



Minuteman Missile National Historic Site • South Dakota



Draft General Management Plan / Environmental Impact Statement  
**MINUTEMAN MISSILE NATIONAL HISTORIC SITE**



"This site was configured by the men and women of the 90th Logistics Group, F.E. Warren AFB Wyoming as a lasting tribute to the Minuteman II weapon system and to all of the Warriors who maintained and operated it. It is standing proof that the Cold War did not just end, it was won!"

"Minuteman II  
Activated 1 Feb 1965 Deactivated 27 Sep 1991  
8,760 days on constant alert  
"Rest easy old friend, your targets are covered."

WORDING FROM DEDICATION PLAQUE  
ON THE VIEWING DOME



Draft  
General Management Plan / Environmental Impact Statement

Minuteman Missile National Historic Site  
Jackson and Pennington Counties, South Dakota

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Minuteman Missile National Historic Site was authorized by an act of Congress on November 29, 1999 (Public Law 106-115). A plan is needed to guide decision-makers on how to manage this national historic site. This document presents four alternatives for how the national historic site should be managed — e.g., where should the visitor / administrative facility be located, what should visitors learn about the site, and how should visitors access the site? Each of these decisions has implications for how visitors access and use the national historic site and the facilities needed to support those uses, how the site’s resources are managed, and how the National Park Service manages its operations.

This document examines four alternatives for managing the national historic site for the next 25 years. It also analyzes the impacts of implementing each of the alternatives. The “**no-action**” **alternative 1**, consists of the existing national historic site management and trends and serves as a basis for comparison in evaluating the other alternatives. The concept for national historic site management under **alternative 2** would be to present the site as though it were still in operation (ready-alert status, i.e., before July 1991 when the START treaty was signed) at the end of the Cold War. The concept for national historic site management under **alternative 3** would be to present the site in its stand-down appearance (i.e., from the ratification of the START Treaty in October 1992 to the establishment of the national historic site by Public Law 106-115 in 1999), symbolizing the nation’s preparedness during the Cold War. The concept for national historic site management under **alternative 4**, the National Park Service’s preferred alternative, would be to present the Delta facilities as symbols that commemorate the Cold War. Under this alternative, Delta One would be presented in its ready-alert status (as in alternative 2), and Delta Nine would be presented in its stand-down appearance (as in alternative 3).

This *Draft General Management Plan / Environmental Impact Statement* has been distributed to other agencies and interested organizations and individuals for their review and comment (see “How to Comment” on next page.) The public comment period for this document will last for 60 days after the Environmental Protection Agency’s (EPA) notice of availability has been published in the *Federal Register*.

## HOW TO COMMENT ON THIS PLAN

Comments on this plan are welcome and will be accepted for 60 days after the EPA's notice of availability appears in the *Federal Register*. If you wish to respond to the material in this document, you may submit your comments by any one of several methods.

You may comment via the form at <<http://parkplanning.nps.gov>> and click on the link to Minuteman Missile National Historic Site.

You may send written comments to

Minuteman Missile National Historic Site  
Attn: Superintendent Mark Herberger  
21280 SD Hwy 240  
Philip, SD 57567

You may hand-deliver comments at public meetings to be announced in the media following release of this document.

You may contact the superintendent by phone at 605-433-5552 or by fax at 605-433-5558

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment — including your personal identifying information — may be made publicly available at any time. Although you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

## SUMMARY

Minuteman Missile National Historic Site (the national historic site) was authorized by an act of Congress on November 29, 1999 (Public Law 106-115) with a total of 7.85 acres. The national historic site consists of two noncontiguous facilities: the Delta One launch control facility (6.35 acres) and the Delta Nine launch facility (1.5 acres).

A plan is needed to guide decision-makers on how to manage this national historic site. This *Draft General Management Plan / Environmental Impact Statement* presents four alternative concepts for future management of national historic site resources and visitor use and improvement of facilities, including the National Park Service's preferred alternative. The four alternatives are alternative 1, the no-action alternative (continue current management), alternative 2, alternative 3, and alternative 4, the National Park Service's preferred alternative.

Each alternative concept answers the questions — where should the visitor/administrative facility be located, what should visitors learn about the site, and how should visitors access the Delta facilities. Each of these decisions has implications for how visitors use the national historic site and the facilities needed to support those uses, how the site's resources are managed, and how the National Park Service manages its operations.

### **ALTERNATIVE 1: THE NO-ACTION ALTERNATIVE (CONTINUE CURRENT MANAGEMENT)**

The no-action alternative consists of a continuation of existing management and trends at Minuteman Missile National Historic Site and provides a baseline for comparison in evaluating the changes and impacts of the other alternatives. The National Park Service would continue current

management of the national historic site. No new construction would be authorized. Efforts would continue to stabilize, preserve, interpret, and protect the national historic site's fundamental resources to the greatest extent possible. The lands surrounding Delta One and Delta Nine are a mixed-grass prairie. Visitors would find facilities much as they were when turned over to the National Park Service.

Existing operations and visitor facilities would remain at the project office located south of exit 131 on Interstate 90. Staffing would remain minimal. Limited accommodations would be available for visitors with disabilities.

Reservations would be required to tour Delta One and Delta Nine. The facilities would appear much as they did when turned over to the National Park Service. NPS staff would provide interpretation on the importance of the facilities as well as the current preservation and protection efforts underway.

Because acceptance of ethnographic data would occur, impacts on ethnographic resources would be long term, minor, and beneficial. However, there could also be long-term moderate to major adverse impacts because of the lack of a formal program of outreach and advancing age of those who could contribute oral histories and lost opportunities to collect them.

Because of the mothballed appearance and limited interpretation and visitor access to the Delta facilities, the overall quality of the visitors' experiences and the potential for understanding the national historic site would be very limited. This would constitute a major adverse impact on visitors.

The no-action alternative would have a major long-term adverse effect on the overall management of the national historic site

## SUMMARY

because as visitation increases the facilities and staffing levels would be insufficient to provide adequate operation needs and protect the resources. Future visitation could cause moderate to major long-term adverse cumulative impact on NPS operations and budget because staff and facilities would be inadequate to provide visitor amenities and services to these visitors.

### **ALTERNATIVE 2: READY-ALERT STATUS**

The concept of this alternative would be to restore the facilities to their active duty/ ready-alert appearance — i.e., before July 1991 when the START treaty was signed. The facilities would present the significance of the ready-alert duty status at Delta One and Delta Nine at the end of the Cold War. Management actions would recognize the unique historical character of the national historic site as the best-preserved example of the Minuteman II defense system. Visitors could only access the Delta facilities via a shuttle.

Under this alternative there would be an 8,000-square-foot visitor/ administrative facility (based on NPS Facility Calculator) constructed south of exit 127 on Interstate 90. This facility would provide a full-range of visitor amenities and NPS administrative space.

Visitors would find the Delta facilities looking as if military personnel were still there. Visitors would require reservations for about a two-hour shuttle tour (for a fee) of Delta One and Delta Nine. Reservations would be required for a tour of the underground capsule at Delta One and would be limited to six visitors per tour. All visitors would park at the visitor facility at exit 127 to begin their tour; shuttles would load and unload passengers on the entrance roads to the facilities. Parking for buses and RVs would not be available at the facilities. Commercial tours

and school groups would receive their primary visitor experience at the visitor center. The chain link security gates at both Delta facilities would remain locked during business hours except during shuttle tours.

Because oral histories and remembrances of those who worked and served at the Delta facilities would be actively collected, impacts on ethnographic resources resulting from implementation of this alternative would be expected to be long term and moderately beneficial.

Restoring the Delta facilities to their active duty (ready-alert) condition and providing personal service interpretation for visitors would provide high-quality experiences and much interpretive depth. This would be a moderate to major beneficial effect for visitors. This would be counter-balanced if some visitors were unable or unwilling to participate on the guided tours or only experienced seeing one of the two Delta facilities on the tour. This would constitute a major adverse impact for some visitors, which would be mitigated by the quantity, quality, and variety of exhibits, films, and “virtual” tours provided at the visitor facility and on the national historic site web site.

Locating the visitor / administrative facility at exit 127 would increase administrative efficiency and coordination of staff. Providing shuttle stops at both Delta facilities would increase maintenance. Maintaining the grounds at both Delta facilities to military standards and providing shuttle pick-up and drop-off points would moderately increase maintenance activities. The impacts of implementing this alternative on administration and maintenance activities would be long term, moderate, and beneficial.



### **ALTERNATIVE 3: A STRATEGIC COMMITMENT**

The concept of this alternative would be to **rehabilitate** the facilities to their stand-down appearance — i.e., from the ratification of the START Treaty in October 1992 to the establishment of the national historic site by Public Law 106-115 in 1999. The facilities would present the national historic site as a symbol of the United States' preparedness for nuclear attack. This alternative would provide a more museum-like experience of the Delta facilities. Visitors would access the facilities via their personal cars. Management actions would recognize the opportunity to provide public access to a formerly restricted and secret place.

Under this alternative there would be a 10,000-square-foot visitor/ administrative facility constructed north of exit 131 on Interstate 90. This facility would provide a full-range of visitor amenities and NPS administrative/curatorial space.

Visitors would experience the facilities as static displays that maintain their historic character. Visitors would be able to drive their personal cars to both Delta One and Delta Nine and take a self-directed tour. The chain-link security gate at both facilities would remain open during business hours.

Interpretive rangers would be at each facility. Regularly scheduled ranger-led tours would also be available. Reservations would be required for tours of the underground control center (capsule), which would be limited to six visitors per tour. Visitor contact stations and parking areas for passenger cars, RVs, and buses would be available nearby.

With reservations, commercial tours and school groups could receive aboveground tours (during the peak visitor season, this would likely be without entrance into any of the buildings). There would be numerous access options for visitors with disabilities (ramps and benches). There would be few

restrictions on the number of visitors at either facility.

The important impacts of implementing alternative 3 would include adverse effects on buildings and structures from installing protective barriers at Delta One. A greater level of impacts on structures through touching, playing on structures, and other visitor contact would be expected compared to alternative 1. The installation of permanent ramps or other special alterations for access by visitors with disabilities would have adverse impacts.

Installing a viewing enclosure on the launch support building at Delta Nine would directly impact the historic conditions of the structure and result in adverse effects.

Implementation of alternative 3 would have substantial long-term minor to moderate beneficial effects on museum objects primarily due to secured storage and curation.

Because oral histories and remembrances of those who worked and served at the Delta facilities would be actively collected, impacts on ethnographic resources resulting from implementation of this alternative would be expected to be long term and moderately beneficial.

The compromised authenticity of the historic facilities in this alternative would be a minor adverse impact on visitor experience. Otherwise, major beneficial effects would result because visitors would be able to tour both facilities at their own pace and within their own time constraints, or with reservations, go on a guided tour of the control center capsule at Delta One, or see the displays and information at the visitor facility. There would be a wide range of interpretive and experience opportunities that would appeal to most visitors and would be a moderate to major beneficial effect.

## SUMMARY

Locating the visitor / administrative facility at exit 131 and locating staffed visitor contact stations at the Delta facilities would decrease administrative efficiency and coordination of staff compared to alternative 2. Providing visitor contact stations and parking areas at both Delta facilities would increase maintenance activities. This alternative would allow the highest number of visitors on site at the Delta facilities which would also increase maintenance activities. Maintaining the grounds at both Delta facilities to NPS standards would reduce groundskeeping. The impacts of this alternative on administration and maintenance activities would be long term, adverse, and minor to moderate because of the distance between the sites and the increase in facilities.

### **ALTERNATIVE 4: COLD WAR SYMBOLS, THE PREFERRED ALTERNATIVE**

The concept of this alternative would be to **restore** Delta One (as in alternative 2, to its ready-alert status) and **rehabilitate** Delta Nine (as in alternative 3, to its stand-down appearance). The facilities would be presented as symbols commemorating the history and significance of the Cold War, the arms race, and the intercontinental ballistic missile (ICBM) in the second half of the 20th century. Management actions would recognize the opportunity to publicly acknowledge the role of all individuals involved in the Minuteman II mission.

Visitors would experience the Delta One facility on a ranger-led tour. Visitors could drive their personal cars to Delta Nine. Reservations for tours would be required. If visitation numbers increase to the point of needing a shuttle to be cost-effective and to ensure protection of the resources and visitor experiences, a fee would be charged for the shuttle tour to Delta One. Arrangements would be considered for larger school or tour groups.

Under this alternative there would be a 7,700-square-foot visitor/ administrative facility and shuttle system constructed north of exit 131. This facility would provide a full-range of visitor amenities and NPS administrative space. Construction of the visitor center/ administrative facility would be implemented in two stages. Stage one would begin with construction of a stand-alone visitor center (5,300 square feet). This facility would be designed so that the administrative portion (stage two) could be added at a later date when funding becomes available and staffing could be increased. During stage one, the administrative functions and NPS staff would remain in the project office. The shuttle system could be developed and operated after such a time as the level of visitation warranted; until that time visitors would drive to both Delta One and Delta Nine.

Visitors would experience Delta One as in alternative 2 — as if personnel were still on-site. Most artifacts and objects would be in their original location. Visitors would experience Delta Nine as in alternative 3 — as a static display.

Implementation of alternative 4 would have long-term minor to moderate beneficial effects on museum objects, primarily due to secured storage and curation.

Because oral histories and remembrances of those who worked and served at the Delta facilities would be actively collected, impacts on ethnographic resources resulting from implementation of this alternative would be expected to be long term and moderately beneficial.

The sense of seeing Delta One “as it really was” would appeal to most visitors, and those who take a guided tour of the Delta One site would benefit from the attention of an NPS interpreter. This would be a major beneficial impact for most visitors. The wide range of options for visiting and learning about the sites would appeal to most visitors and would

be a major beneficial effect. The richness of interpretation in this alternative would be a major beneficial impact for visitors on the tours, and on-site interpretive media and interpretive programs at the visitor/administrative facility would be a moderate beneficial effect on visitors.

The overall impacts of implementing this alternative would be moderate to major, long term, and beneficial because staff would only be making a shorter (8-mile) round-trip shuttle tour than in alternative 2 and would be providing a high level of on-site visitor support and resource protection at Delta One. Visitors on-site at the Delta One facility would be accompanied by a ranger, which would reduce operation needs. Installing modern utility systems would improve efficiency and reduce maintenance. Not having a staffed facility at either Delta facility would reduce maintenance and operations compared to alternatives 2 and 3.

## THE NEXT STEPS

After the distribution of the *Draft General Management Plan / Environmental Impact Statement* there will be a 60-day public review and comment period after which the NPS planning team will evaluate comments from other federal agencies, tribes, organizations,

businesses, and individuals regarding the draft plan and incorporate appropriate changes into a *Final General Management Plan / Environmental Impact Statement*. The final plan will include letters from governmental agencies, any substantive comments on the draft document, and NPS responses to those comments. Following distribution of the *Final General Management Plan / Environmental Impact Statement* and a 30-day waiting period before the “Record of Decision” approving a final plan will be signed by the NPS regional director. The “Record of Decision” documents the NPS selection of an alternative for implementation. With the signing of the “Record of Decision,” the National Park Service can then begin to implement the plan. A “Record of Decision,” however, does not guarantee that funding and staffing to execute the approved plan will be forthcoming. Budget restrictions, requirements for additional data or regulatory compliance, and competing national park system priorities can prevent immediate implementation of many actions. Full implementation of major or especially costly actions, including capital construction, staffing increases, boundary adjustments, and shuttle operations might be completed years into the future. Therefore, if full funding is not immediately available, a phased approach for implementing the plan will be necessary.

## A GUIDE TO THIS DOCUMENT

This document contains the general management plan, which prescribes a long-term framework for making management decisions.

### DRAFT GENERAL MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT

This *Draft General Management Plan / Environmental Impact Statement* is organized in accordance with the Council on Environmental Quality's implementing regulations for the National Environmental Policy Act and the National Park Service's Director's Orders on "Park Planning" (DO-2) and "Environmental Analysis" (DO-12).

**Chapter 1: The Purpose of and Need for Action** sets the framework for the entire document. It describes why the plan is being prepared and what needs it must address. It gives guidance for the alternatives that are being considered, which are based on the national historic site's legislated mission, its purpose, the significance of its resources, special mandates and administrative commitments, and NPS mandates and policies.

The chapter also details the planning opportunities and issues that were raised during public scoping meetings and initial planning team efforts; the alternatives in the next chapter address these issues and concerns to varying degrees. This chapter concludes with a statement of the scope of the environmental impact analysis — specifically what impact topics were or were not analyzed in detail.

**Chapter 2: Alternatives, Including the Preferred Alternative**, begins by describing the management zones that will be used to manage the national historic site in the future. It also consists of the continuation of current management and trends in the national

historic site (alternative 1, the no-action alternative). Alternatives 2, 3, and 4 are then presented. Mitigative measures proposed to minimize or eliminate the impacts of some proposed actions are described and then a discussion of future studies and implementation plans needed. Next are discussions of the environmentally preferred alternative and the alternatives and actions considered but dismissed. The chapter concludes with summary tables of the alternative actions and the environmental consequences of implementing those alternative actions.

**Chapter 3: The Affected Environment** describes those areas and resources that would be affected by implementing actions in the various alternatives — cultural resources, natural resources, visitor use and experience, the socioeconomic environment, and NPS operations.

**Chapter 4: Environmental Consequences** analyzes the impacts of implementing the alternatives on topics described in the "Affected Environment" chapter. Methods that were used for assessing the impacts in terms of the intensity, type, and duration of impacts are outlined at the beginning of the chapter.

**Chapter 5: Consultation and Coordination** describes the history of public and agency coordination during the planning effort and lists agencies and organizations who will be receiving copies of this document.

The **Appendixes** present supporting information for the document, along with selected references, a list of the preparers and consultants, and an index.

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**CHAPTER 1:  
INTRODUCTION**



VIEWING ENCLOSURE OVER MISSILE SILO



## PURPOSE AND NEED FOR THE PLAN

### INTRODUCTION

This *Draft General Management Plan / Environmental Impact Statement* presents and analyzes four draft alternative future directions for the management and use of Minuteman Missile National Historic Site (the national historic site). Alternative 4, Cold War Symbols, is the National Park Service's preferred alternative. The potential environmental impacts of all alternatives have been identified and assessed.

General management plans are long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in the parks. General management plans usually provide guidance during a 25-year period.

Actions directed by general management plans or in subsequent implementation plans are accomplished over time. Limited funding availability, requirements for additional data or regulatory compliance, and competing national park system priorities mean that implementation of many actions will be accomplished over the life of the plan. Major or especially costly actions could be implemented 10 or more years into the future.

A multidisciplinary planning team prepared this general management plan. The team includes staff from the NPS Midwest Regional Office in Omaha, Nebraska; staff from Minuteman Missile National Historic Site; Badlands National Park; the NPS Denver Service Center in Denver, Colorado; and the Harry S Truman National Historic Site. Partners were also part of the planning team including representatives from the United States Air Force, the United States Forest Service, and the South Dakota Air and Space Museum. In accordance with the legislation, the plan was prepared in consultation with Badlands National Park regarding

administration, management, and personnel functions. (See appendix A for full text of legislation and map.)

Ideas, interests, and concerns related to the future management of the national historic site were received from the team partners mentioned above; the general public; and city, state, and federal agencies through official correspondence, workshops, meetings, newsletters, and personal contacts. These comments were incorporated into the draft alternative concepts. The "Consultation and Coordination" section of this document describes the public involvement process in greater detail.

The project began in 2001. At that time, the initial development of the general management plan was overseen by the superintendent and staff of Badlands National Park. In October 2003, the completion of the plan was turned over to newly appointed superintendent and staff of Minuteman Missile National Historic Site.

### BRIEF DESCRIPTION OF THE NATIONAL HISTORIC SITE

Minuteman Missile National Historic Site, in southwestern South Dakota, was established on November 29, 1999 (PL 106-115; see appendix A). Preserving one of the last remaining Minuteman II intercontinental ballistic missile systems in the United States, the national historic site interprets the deterrent value of the land-based portion of America's nuclear missile defense during the Cold War era and commemorates the people and events during this key period of American history.

The national historic site resources consist of the Delta One and Delta Nine facilities. Both Delta facilities contain substantial amounts of

equipment and infrastructure that are explained in detail in the “Affected Environment” section and appendices. These facilities have changed little since President George H. W. Bush ordered the stand-down of nuclear forces following the signing of the Strategic Arms Reduction Treaty on July 31, 1991.

Delta One, the launch control facility, is where support personnel lived above ground and missile combat crews manned the underground capsule. The 6.35-acre site includes two support buildings. One building was the living quarters for 8 to 10 personnel and various equipment rooms. The second building was a large vehicle storage building (garage) for military vehicles. The living quarters connected via an elevator to the launch control center (underground capsule). Two missile combat crew personnel manned this capsule at all times. Delta One is bordered on the north, west, and south sides by private property and on the east by a county road and the Buffalo Gap National Grassland.

Delta Nine, the launch facility, contains the Minuteman II missile (deactivated) and its silo and underground utility support building. At this 1.5-acre site, visitors can look into the viewing enclosure to see the missile.

Built in accordance with Air Force dispersal strategy, Delta One and Delta Nine were linked through a system of underground cables (HICS: hardened interstate cable system) and a radio communications network. Delta One and Delta Nine were part of a 10-missile operational unit (Delta Flight) assigned to the 66<sup>th</sup> Strategic Missile Squadron of the 44<sup>th</sup> Missile Wing, headquartered at Ellsworth Air Force Base.

The temporary NPS project office housing the superintendent and staff is located on private property in Cactus Flats, just south of exit 131 on Interstate 90.

## REGION

The region surrounding the national historic site contains such highly visited attractions as Mount Rushmore National Memorial, Badlands National Park, Black Hills National Forest, Jewel Cave National Park, and Deadwood National Historic Landmark. The Delta facilities are about 5 to 10 miles north of Badlands National Park, which is about 70 miles east of Rapid City.

The Delta One and Delta Nine sites are generally surrounded by a rural landscape. The Delta facilities are adjacent to Interstate 90, which is a major east-west tourist route. The facilities are located between the communities of Wall (Interstate 90 Exit 110) and Cactus Flat (Interstate 90 Exit 131). Delta One is in Jackson County, about 1.7 miles north of Interstate 90 on County Road CS23A at exit 127. Delta Nine is in Pennington County, about 0.5 mile south of Interstate 90 on 239th Street. Delta Nine is about 11 miles west of Delta One at exit 116 of Interstate 90 (see Region map). Surrounding the Delta One facility on the north, west, and south is a private ranch that includes numerous buildings of differing ages. It is not known which, if any, of the buildings may have been present during the period of significance of the facility. Delta Nine is bordered on the north, west, and south by the national grassland and on the east by private property. The following region map will assist you in understanding the relationship of Delta One and Delta Nine, their regional and local surroundings, and the proposed locations for the visitor/ administrative facility.

## VISITOR / ADMINISTRATIVE FACILITY AND SITE

The enabling legislation directed the team to evaluate two possible locations for a visitor/ administrative facility — exit 127 on Interstate 90 about 1 mile south of Delta One, and exit 131 on Interstate 90 about 4 miles east of Delta One (see Region map). Both of these locations

are within the national grassland boundary; the U.S. Forest Service, upon NPS approval of one of the alternatives through the signing of a “Record of Decision” and congressional legislation, would transfer up to 25 acres of national grassland at one of these two locations for the national historic site’s visitor/administrative facility.

## **PURPOSE OF THE PLAN**

The approved *General Management Plan* will be the basic document for managing Minuteman Missile National Historic Site for the next 25 years. The primary purposes of this general management plan are as follows:

- Clearly define resource conditions and visitor use and experience to be achieved at Minuteman Missile National Historic Site.
- Provide a framework for NPS managers to use when making decisions about such issues as how to best protect national historic site resources, how to provide quality visitor use and experience, how to manage visitor use, and what kinds of facilities, if any, to develop in/near the national historic site.
- Ensure that this foundation for decision making has been developed in consultation with interested stakeholders and adopted by the NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

Legislation establishing the National Park Service as an agency and governing its management provides the fundamental direction for the administration of Minuteman Missile National Historic Site (and other units and programs of the national park system). This general management plan will build on the national historic site’s enabling legislation (appendix A), NPS mandates and policies (appendix B), and other laws and executive orders (appendix C) to provide a vision for the national historic site’s future. The following section, “Guidance for the Planning Effort,”

calls the reader’s attention to topics that are important to understanding the management direction at the national historic site.

## **NEED FOR THE PLAN**

This plan is needed because Minuteman Missile National Historic Site is a new unit of the national park system and currently has no approved, long-term management plan. Such a plan is required for all units in the national park system (National Parks and Recreation Act of 1978, Public Law 95-625). The plan is needed to determine how the creation of the national historic site will affect the preservation of cultural resources, visitor experience, museum and spare parts collections, NPS operations, and the surrounding rural landscape.

The plan is needed to respond to the direction given in the enabling legislation creating the national historic site. The legislation directs that the national historic site “complement the interpretive programs relating to the Minuteman II missile defense system offered by the South Dakota Air and Space Museum at Ellsworth Air Force Base.” The legislation allows for the creation of cooperative agreements to carry out the mission of the site.

The above considerations have resulted in more detailed planning than is typically found in plans for larger, more established national park system units. This detail is intended to ensure adequate guidance in managing the national historic site.

The general management plan represents a commitment by the National Park Service to the public on how the national historic site will be used and managed. As such, it is intended to accomplish the following:

- Confirm the purpose and significance of the national historic site
- Determine the best mix of resource protection and visitor experience beyond what is prescribed by law and policy. This

mix is based on the purpose for and significance of the national historic site; the range of public expectations and concerns; the natural and cultural resources in the national historic site; and the impact of the alternatives on the natural, cultural, and socioeconomic conditions, visitor use and experience, and NPS costs.

- Define management zones that implement the goals of the National Park Service and the public with regard to natural and cultural resource management and protection and visitor use and experience. Facilities that are appropriate within each management zone are also identified.
- Determine the areas to which the management zones should be applied to achieve the overall management goals of the national historic site.
- Serve as the basis for later more detailed management documents, such as strategic plans and implementation plans.

### THE NEXT STEPS

After the distribution of the *Draft General Management Plan / Environmental Impact Statement* there will be a 60-day public review and comment period. After this period the NPS planning team will evaluate comments from other federal agencies, tribes, organizations, businesses, and individuals regarding the draft plan and incorporate appropriate changes into a *Final General Management Plan / Environmental Impact Statement*. The final plan will include letters from governmental agencies, any substantive comments on the draft document, and NPS responses to those comments. Following distribution of the *Final General Management Plan / Environmental Impact Statement* and a 30-day no-action period, a “Record of

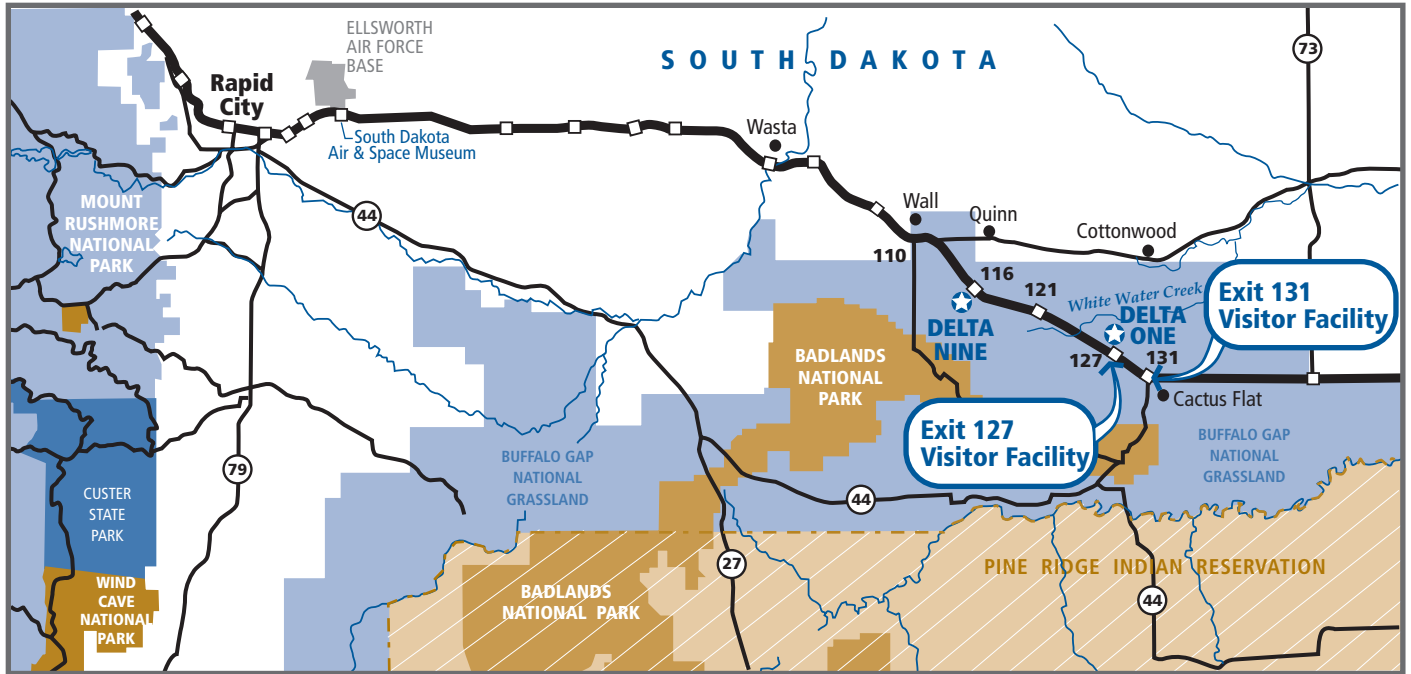
Decision” approving a final plan will be signed by the NPS regional director. The “Record of Decision” documents the NPS selection of an alternative for implementation. With the signing of the “Record of Decision,” the plan can then be implemented.

### IMPLEMENTATION OF THE PLAN

The “Record of Decision” does not guarantee that funding and staffing to execute the approved plan will be forthcoming. Budget restrictions, requirements for additional data or regulatory compliance, and competing national park system priorities can prevent immediate implementation of many actions. Full implementation of major or especially costly actions, including capital construction, staffing increases, boundary adjustments, and shuttle operations might be completed years into the future. Therefore, if full funding is not immediately available, a phased approach for implementing the plan will be necessary. Once the general management plan has been approved, additional feasibility studies and more detailed planning and environmental documentation would be completed, as required, before any proposed actions can be carried out.

The general management plan does not describe how particular programs or projects should be prioritized or implemented. Those decisions will be addressed during the more detailed planning associated with strategic plans, implementation plans, or other types of plans. All of those plans will tier from the general management plan and will be based on the goals, future conditions, and appropriate types of activities established in the approved general management plan.





Note: Delta Nine is 11 miles west of Delta One

- FOREST SERVICE
- STATE LAND
- NATIONAL PARK SERVICE
- PINE RIDGE INDIAN RESERVATION

## Region

MINUTEMAN NATIONAL HISTORIC SITE  
 United States Department of the Interior  
 National Park Service  
 DSC • AUGUST 2007 • 660 • 20,000A



## GUIDANCE FOR THE PLANNING EFFORT

Congress, through the enabling legislation, provides the overall reason for setting the national historic site aside and provides general direction as well as specific guidelines for the future. In addition, planning guidance is given in a number of laws, policies, mandates, and guidelines that already exist and must be followed. All of the guidance provides the foundation for preparing the general management plan.

To begin planning for the future of Minuteman Missile National Historic Site, it is important to first verify our understanding of Congress' intent for the site (purpose) and reaffirm what is special about it (the significance). The purpose and significance statements are key components of a general management plan and set direction and limits for the plan. The statements help to determine how the site should be managed and used, set management priorities, and provide a rationale against which proposed actions can be evaluated. Actions proposed in the alternatives should be consistent with purpose and should maintain or enhance significance.

Planning in the national park system is organized around three primary questions:

**WHY** was this park system unit established (what is the overall mission of this park system unit?)

**WHAT** is the vision for the future of this park system unit (what kind of place do we want it to be?)

**HOW** do we accomplish our future vision (what actions are needed to create desired future conditions).

Developing a vision for the national historic site's future (answering the **WHAT** question) is the primary role of a general management plan.

### PURPOSE AND SIGNIFICANCE

#### Purpose

The site's purpose statements answer the question: **WHY** was Minuteman Missile National Historic Site set aside as a unit of the national park system? Purpose statements are based on the site's enabling legislation and legislative history and NPS policies.

The purpose of Minuteman Missile National Historic Site, taken directly from its enabling legislation, is to

- preserve, protect, and interpret for the benefit and enjoyment of present and future generations the structures associated with the Minuteman II missile defense system;
- interpret the historical role of the Minuteman II missile defense system —
  - as a key component of America's strategic commitment to preserve world peace; and
  - in the broader context of the Cold War; and
- complement the interpretive programs relating to the Minuteman II missile defense system offered by the South Dakota Air and Space Museum at Ellsworth Air Force Base.

#### Significance

Significance statements capture the essence of the national historic site's importance to our country's natural and cultural heritage.

Significance statements do not inventory the site's resources; rather, they describe the site's distinctiveness and help to place the national historic site in its regional, national, and international contexts. Significance statements answer questions such as why are the national historic site's resources distinctive and what

do they contribute to our natural/ cultural heritage? Defining the national historic site significance helps managers make decisions that preserve the resources and values necessary to accomplish the national historic site’s purpose.

Minuteman Missile National Historic Site was nominated for inclusion in the National Register of Historic Places upon congressional authorization and presidential signature of its enabling authorization dated November 29, 1999. National register listing through a well-researched and written nomination came on May 5, 2005, when historic district boundaries were drawn, contributing features were identified, and significance was established at the national level for Minuteman Missile National Historic Site. The nomination recognizes as important elements of the overall site “associated features, including recreational equipment, mechanical and electrical equipment, historic objects, furnishings, and landscape elements” for listing in the national register. The historic district meets the criteria for national historic landmark status; however, it has not been nominated as such because it is already a cultural/historic unit of the national park system.

Minuteman Missile National Historic Site is significant because of the following:

- The Minuteman II intercontinental ballistic missile (ICBM) facilities known as Delta One and Delta Nine are the best preserved examples of the operational character of American history during the Cold War.
- The facilities are symbolic of the dedication and preparedness exhibited by the missileers\* of the U.S. Air Force stationed throughout the upper Great Plains in remote and forbidding locations during the Cold War.
- The facilities provide a unique opportunity to illustrate the history and significance of the Cold War, the arms race, and ICBM development.

- Delta One and Delta Nine, as represented through the 44th Strategic Missile Wing, highlight the traditional values, training, and esprit de corps of military personnel from the U.S. Air Force, the Strategic Air Command, and Ellsworth Air Force Base, and their undeterred commitment to defend the country.
- The facilities represent unparalleled engineering feats and collaboration between military personnel and civilian contractors in the design, construction, activation, and maintenance of the upper Great Plains Missile Fields.
- Delta One and Delta Nine remain as examples the ability of the American people to construct, in a short period of time, complex facilities that would not only serve as a protection against others that have similar power but also to withstand the test of time.
- Although the Minuteman system was a catalyst for rural electrification, road improvements, and economic development, the facilities also exemplify the historic concerns among rural South Dakota communities and ranchers towards land-ownership issues and potential disruptions of their traditional “western way of life.”
- The facilities offer the opportunity for civic engagement, discussion, and debate on past, present, and future ramifications of the Cold War era and the country’s missile defense program.
- Delta One and Delta Nine allow access, for national and international visitors, to seldom-seen military technology and the powerful tangible cultural resources that may have had a profound impact upon their political and social ideals.

*\*Although the term **missileer** is most often used to refer to the operations officers on 24-hour alert in the underground capsules responsible for launching the missiles, in the broader context it includes the missile maintainers, security forces, chefs, civil engineers, communications personnel, and others that directly supported the strategic alert mission.*

## **PRIMARY INTERPRETIVE THEMES**

Based on the park's purpose, significance, and primary resources, the following interpretive themes have been developed. Primary interpretive themes are the key stories, concepts, and ideas of a park. They are the groundwork that NPS staff will use for educating visitors about the national historic site and for inspiring visitors to care for and about the nation historic site's resources. With these themes, visitors can form intellectual and emotional connections with national historic site resources and experiences. Subsequent interpretive planning may elaborate on these primary themes.

The following primary theme statements were developed by the NPS staff:

1. **Cold War** — The Cold War was one of the most significant national and international events of the last half of the 20th century. Cold War activities influenced political, economic, cultural, educational, and social programs throughout the United States, the Soviet Union, and other nations. In the Cold War, the "front line" was everywhere.
2. **Technology** — To counter the Soviet threat, technological superiority, when coupled with the ability to deliver unprecedented force, was required to maintain peace. To deter Communist aggression, the United States developed the Minuteman missile defense system with the ability to respond to an attack with immediate and massive retaliation.
3. **Human/Cultural** — Whether the threat of nuclear annihilation kept the superpowers from mutual assured destruction may never be fully determined. What is clear is that deterrence worked. Minuteman was one such deterrent; it was a weapon that came to shape the American landscape,

leaving a mark on the men and women who built it, operated it, and lived alongside it.

4. **Economic/Industrial** — The Minuteman system was a catalyst for rural electrification, improved road access, economic enhancement, education, and community stability. Research and development for weapons and delivery and support systems influenced a military/industrial complex that became a fact of United States' economic life.
5. **Political** — The Cold War is in the past, but it has a lasting effect on the present and future. Minuteman Missile National Historic Site facilitates a public dialogue on the Cold War, nuclear weapons proliferation and disarmament, the role and dedication of U.S. Air Force personnel, and the nation's political and military future. Debates about missile defense, energy, taxes, and terrorism all reflect the experiences of decades just past.

## **SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS**

Special mandates and administrative commitments refer to specific requirements to which the National Park Service must adhere. These formal commitments are often established concurrently with the creation of a unit of the national park system. There are often conditions of, for example, visitor use or resource preservation or development of the site that are specified in the legislation that established that particular national park system unit. In this document these conditions are called special mandates and administrative commitments or agreements. The special mandates called for in the legislation are listed in table 1.

**TABLE 1. MANDATES FROM THE ENABLING LEGISLATION**

<b>DIRECTION</b>	<b>STATUS</b>
<p><b>PARTNERSHIPS</b> The historic site shall “complement the interpretive programs related to the Minuteman II missile defense system offered by the South Dakota Air and Space Museum at Ellsworth Air Force Base.”</p>	<p>The Director of the South Dakota Air and Space Museum attended workshops and meetings and was directly involved in the development of the draft conceptual alternatives. (See “Consultation and Coordination” chapter.)</p>
<p><b>NATIVE AMERICANS</b> The Secretary [of the Interior] shall consult with the Secretary of Defense and the Secretary of State . . . to ensure . . . compliance with applicable treaties.</p>	<p>Tribal consultation was conducted and is documented in the “Consultation and Coordination” chapter.</p>
<p><b>BOUNDARY</b> The “Establishment” Section 3(a) states that the historic site shall consist of the land and interests in land . . . as generally depicted on the map (APPENDIX A). The map shows Delta One at 6.65 acres and proposes it to be at 10 acres. The map shows Delta Nine at 1.5 acres and proposes it to be at 5 acres. Section 3(a)(4) states that the Secretary of Interior is authorized to make minor adjustments to the boundary of the historic site.</p> <p>The “General Management Plan” Section 3(f) states that the boundary of the site shall be modified to include the preferred location for the future visitor / administrative facility.</p>	<p>All action alternatives propose boundary adjustments or changes (through easements or willing-seller purchases) to provide for adequate protection of the Delta facilities, to protect the historic landscape, and/or to provide for visitor and administrative facilities (as shown in the alternative maps).</p>
<p><b>HAZARDOUS MATERIALS</b> The Secretary [of the Interior] shall not acquire any lands if the Secretary determines that the land . . . is contaminated with hazardous substances . . . unless . . . remedial action . . . has been taken.</p>	<p>The U.S. Air Force preformed necessary environmental sampling and remediation before transferring the property to another government agency.</p>
<p><b>VISITOR FACILITY LOCATION</b> The General Management Plan shall include an evaluation of appropriate locations for a visitor facility and administrative site within the areas depicted on the map. [and] . . . the boundary of the historic site shall be modified to include the selected site.</p>	<p>The draft conceptual alternatives respond to this mandate. The boundary would be adjusted as indicated on the alternative maps in chapter 2.</p>
<p><b>LAND TRANSFER BETWEEN FEDERAL AGENCIES</b> Land Acquisition Section 3(e) of the enabling legislation authorized): “Except as provided in paragraph (2), the Secretary may acquire land and interests in land within the boundaries of the historic site by — donation, purchase with donated or appropriate funds; or exchange or transfer from another Federal Agency.”</p>	<p>The U.S. Forest Service would transfer up to 3.65 acres at Delta One under alternatives 3 and 4 and up to 5 additional acres at Delta Nine in alternative 3. In alternatives 2, 3, and 4, the U.S. Forest Service would transfer up to 25 acres for the NPS visitor center/administration facility at the exit designated in the approved plan/“Record of Decision.” Congressional legislation will be required for the Delta Nine and visitor center area transfer/boundary adjustment.</p>

**TABLE 2. CURRENT AGREEMENTS WITH OTHERS**

Agreements are generally contracts between the National Park Service and another entity. They are found in documented NPS administrative memorandums of agreement. Currently, Minuteman Missile National Historic Site has the following agreements.

Agreement and Contract	Management Action
In agreement with the START Treaty, a deactivated Minuteman II Missile is on static display at Delta Nine	The missile is on loan to the National Park Service by the U.S. Air Force. The Park Service shall maintain the static display as directed in the START Treaty. See appendix D.
NPS Project Office	The project office is currently on private property under a GSA Occupancy Agreement No. GS-08P-14014 with the owners.

**NPS MANDATES AND POLICIES**

This section identifies what must be done at Minuteman Missile National Historic Site to comply with federal laws and policies of the National Park Service, such as NPS *Management Policies 2006* and NPS-28 “Cultural Resource Management Guidelines.” Many management directives are specified in laws and policies guiding the National Park Service and are therefore not subject to alternative approaches. For example, there are laws about managing environmental quality (such as air quality, threatened and endangered species, and wetlands); laws governing the preservation of cultural resources (such as the National Historic Preservation Act); and laws about providing public services (such as barrier-free access). A general management plan is not needed to decide, for instance, that it is appropriate to protect endangered species, control exotic species, protect archeological sites, provide for handicap access, or conserve artifacts. Laws and policies have already decided those and many other things for us. For example, the National Park Service does not have the choice to do anything but preserve the historic structures above and below ground at Delta One and Delta Nine. These are key elements of the purpose for which the site was established. Understanding this guidance and how it affects each unit’s mission is fundamental to planning for the national historic site’s future. This section highlights the legal and policy mandates that guide the manage-

ment of Minuteman Missile National Historic Site.

There are also decisions to be made where law, policy, and regulations do not provide clear guidance or limits. For example, do we preserve the support structures and underground capsule at Delta One by limiting the number of visitors, by not limiting visitors, or by excluding visitors? Decisions like these, with more than one possible answer, would be based on the purpose, significance, and the laws and policies mentioned below, as well as

- the significant resources that are to be protected/preserved
- public expectations and concerns
- resource analysis
- an evaluation of the cultural, natural, and social impacts of alternative courses of action
- consideration of long-term costs

These kinds of decisions are the heart of a general management plan.

Many of the laws and executive orders that guide national park unit management, with their legal citations, are identified in appendixes B and C. Some of these laws and executive orders are applicable solely or primarily to units of the national park system. These include the 1916 Organic Act that created the National Park Service, the General Authorities Act of 1970, the act of March 27, 1978, relating to the management of the

national park system, and the National Parks Omnibus Management Act (1998). Other laws and executive orders have much broader application, such as the Endangered Species Act, the National Historic Preservation Act, and Executive Order 11990 addressing the protection of wetlands.

The NPS Organic Act (16 USC § 1) provides the fundamental management direction for all units of the national park system:

Promote and regulate the use of the Federal areas known as national parks, monuments, and reservations . . . by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

The National Park System General Authorities Act (16 USC Section 1a-1 et seq.) affirms that while all national park system units remain “distinct in character,” they are “united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage.” The act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Further, amendments state that NPS management of park units should not “derogat[e] . . . the purposes and values for which these various areas have been established.”

The National Park Service also has established policies for all units under its stewardship. These are identified and explained in a guidance manual entitled *NPS Management Policies 2006* (<http://www.nps.gov/policy/>

[gmp/policies.pdf](#)). The alternatives considered in this document incorporate and comply with the provisions of these mandates and policies.

Public Law 95-625, the National Park and Recreation Act, requires the preparation and timely revision of General Management Plans for each unit of the national park system. Section 604 of that act outlines several requirements for general management plans, including measures for the protection of the area’s resources and “indications of potential modifications to the external boundaries of the unit and the reasons therefore.” NPS *Management Policies* adopted in 2006 reaffirm this legislative directive.

To truly understand the implications of an alternative, it is important to combine the NPS mandates and policies with the management actions described in an alternative.

Table 3 shows some of the most pertinent NPS mandates and policy topics related to planning and managing Minuteman Missile National Historic Site. Across from each topic are listed the *desired conditions that the staff is striving to achieve* for that topic — thus the table is written in the present tense. Although attaining some of these conditions set forth in these laws and policies has been temporarily deferred at the national historic site because of funding or staffing limitations, the National Park Service will continue to strive to implement these requirements with or without a new general management plan. Appendix B gives more detail about the laws and policies directing these and other actions.

The alternatives in this general management plan address the desired future conditions that are *not mandated by law and policy* and must be determined through a planning process.



**TABLE 3. NPS MANDATES AND POLICIES PERTAINING TO MINUTEMAN MISSILE NATIONAL HISTORIC SITE**

TOPIC	TO BE ACHIEVED BY LAW OR POLICY
<b>CULTURAL RESOURCE PROTECTION</b>	
<b>Historic Structures</b>	<p>Historic structures are inventoried and their significance and integrity are evaluated under National Register of Historic Places criteria. The qualities that contribute to the listing or eligibility for listing of historic structures on the national register are protected in accordance with the <i>Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> (unless it is determined through a formal process that disturbance or natural deterioration is unavoidable).</p>
<b>Cultural Landscapes</b>	<p>The management of cultural landscapes focuses on preserving the landscape's physical attributes, biotic systems, and use when that use contributes to its historical significance.</p> <p>The preservation, rehabilitation, restoration, or reconstruction of cultural landscapes is undertaken in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes</i>.</p> <p>Cultural landscape inventories are conducted to identify landscapes potentially eligible for listing in the national register, and to assist in future management decisions for landscapes and associated resources, both cultural and natural.</p>
<b>Ethnographic Resources</b>	<p>Appropriate cultural anthropological research is conducted in cooperation with groups associated with the park.</p> <p>To the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, the National Park Service accommodates access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of these sacred sites."</p> <p>NPS general regulations on access to and use of natural and cultural resources in the national park are applied in an informed and balanced manner that is consistent with national park purposes and does not unreasonably interfere with American Indian use of traditional areas or sacred resources and does not result in the degradation of national park resources.</p> <p>American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony, and associated funerary objects are consulted when such items may be disturbed or are encountered on park lands.</p> <p>Access to sacred sites and park resources by American Indians continues to be provided when the use is consistent with park purposes and the protection of resources.</p> <p>All ethnographic resources determined eligible for listing or listed on the national register are protected. If disturbance of such resources is unavoidable, formal consultation with the state historic preservation officer and the Advisory Council on Historic Preservation, and with American Indian tribes as appropriate, is conducted.</p> <p>All executive agencies are required to consult, to the greatest extent practicable and to the extent permitted by law, with tribal governments before taking actions that affect federally recognized tribal governments. These consultations are to be open and candid, and confidential as needed, so that all interested parties may evaluate for themselves the potential impact of relevant proposals.</p> <p>In addition to the inadvertent discoveries of cultural resource, <i>NPS Management Policies 2006</i> states in part that a park unit's "traditionally associated peoples should be consulted about ... other proposed NPS actions that may affect the treatment of, use of, and access to park resources with cultural meaning to a group."</p>

TOPIC	TO BE ACHIEVED BY LAW OR POLICY
<b>Museum Collections</b>	<p>All museum collections (prehistoric and historic objects, works of art, archival documents, and natural history specimens) are identified and inventoried, catalogued, documented, preserved, and protected, and provision is made for access to and use of items in the collections for exhibits, research, and interpretation in consultation with traditionally associated groups.</p> <p>The qualities that contribute to the significance of collections are protected in accordance with established standards.</p>
<b>NATURAL RESOURCE PROTECTION</b>	
<b>Air Quality</b>	<p>Air quality in the national historic site meets national ambient air quality standards for specified pollutants. The national historic site's air quality is maintained or enhanced with no significant deterioration.</p>
<b>Native Vegetation and Animals</b>	<p>The National Park Service will maintain, as parts of the natural ecosystem, all native plants and animals in the national historic site.</p>
<b>VISITOR USE AND EXPERIENCE</b>	
<b>Visitor Use and Experience</b>	<p>National historic site resources are conserved "unimpaired" for the enjoyment of future generations. Visitors have opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative cultural resources found in the national historic site. No activities occur that would cause derogation of the values and purposes for which the national historic site has been established.</p> <p>For all zones, districts, or other logical management divisions in a park system unit, the types and levels of visitor use are consistent with the desired resource and visitor experience conditions prescribed for those areas.</p> <p>National historic site visitors will have opportunities to understand and appreciate the significance of the national historic site and its resources, and to develop a personal stewardship ethic.</p> <p>To the extent feasible, programs, services, and facilities in the national historic site are accessible to and usable by all people, including those with disabilities.</p>
<b>Commercial Services</b>	<p>Same as Visitor Use and Experience above.</p> <p>All commercial services must be authorized, must be necessary and/or appropriate, and must be economically feasible. Appropriate planning must be done to support commercial services authorization.</p>
<b>Public Health and Safety</b>	<p>Visitor and employee safety and health are protected.</p>
<b>Transportation to the National Historic Site</b>	<p>Visitors have reasonable access to the national historic site, and signs along the interstate adequately direct people to the sites. Visitors have transportation options to Delta One and Delta Nine. NPS transportation vehicles preserve the integrity of the surroundings, respect ecological processes, protect national historic site resources, and provide the highest visual quality and a rewarding visitor experience.</p> <p>The National Park Service participates in all transportation planning forums that may result in links to the national historic site or impact national historic site resources. Working with federal, tribal, state, and local agencies on transportation issues, the National Park Service seeks reasonable access to the national historic site.</p>

TOPIC	TO BE ACHIEVED BY LAW OR POLICY
<b>ADMINISTRATION AND OPERATIONS</b>	
<b>Sustainable Design/ Development</b>	<p>NPS and concessioner visitor management facilities are harmonious with national historic site resources, compatible with the natural environment, aesthetically pleasing, functional, as accessible as possible to all segments of the population, energy-efficient, and cost-effective.</p> <p>All decisions regarding national historic site operations, facilities management, and development in the national historic site — from the initial concept through design and construction — reflect principles of resource conservation. Thus, all developments and operations are sustainable to the maximum degree possible and practical. New developments and existing facilities are located, built, and modified according to the <i>Guiding Principles of Sustainable Design</i> (NPS 1993) or other similar guidelines.</p> <p>Management decision making and activities throughout the national park system should use value analysis, which is mandatory for all bureaus of the Department of the Interior to help achieve this goal. Value planning, which may be used interchangeably with value analysis/value engineering/value management, is most often used when value methods are applied on general management or similar planning activities.</p>
<b>Utilities and Communication Facilities</b>	<p>National historic site resources or public enjoyment of the national historic site are not denigrated by nonconforming uses. Telecommunication structures are permitted in the national historic site to the extent that they do not jeopardize the site's mission and resources. No new nonconforming use or rights-of-way are permitted through the national historic site without specific statutory authority and approval by the director of the National Park Service or his/her representative, and are permitted only if there is no practicable alternative to such use of NPS lands.</p>
<b>PARTNERING</b>	
<b>Relations with Private and Public Organizations, Owners of Adjacent Land, and Governmental Agencies</b>	<p>Good relations are maintained with adjacent landowners, surrounding communities, and private and public groups that affect and are affected by the national historic site. The national historic site is managed proactively to resolve external issues and concerns and ensure that national historic site values are not compromised.</p> <p>Because the national historic site is an integral part of the larger regional environment, the National Park Service works cooperatively with others to anticipate, avoid, and resolve potential conflicts, protect national historic site resources, and address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, Indian tribes, neighboring landowners, and all other concerned parties.</p> <p>Periodic consultations occur with landowners and communities affected by site visitors and management actions.</p>
<b>Land Protection</b>	<p>The National Park Service will identify and evaluate boundary adjustments that may be necessary or desirable in order to carry out the purposes of the national historic site.</p> <p>The National Park Service may employ a variety of land protection methods, including acquisition of less-than-fee real property interests such as easements.</p>

## RELATIONSHIP OF OTHER PLANNING EFFORTS TO THIS GENERAL MANAGEMENT PLAN

The *Minuteman Missile National Historic Site General Management Plan / Environmental Impact Statement* is required to include an assessment of other plans being developed by any local, state, or federal agencies that could affect the general management plan.

### NPS STUDIES / PLANS

#### NPS Special Resource Study

A special resource study was developed in 1995. This study recommended that the Minuteman Missile facilities become a new national park system site. The 1995 study analyzed five locations for a visitor/administrative facility. The study drew no conclusion as to the appropriate location for a visitor/administrative facility. The enabling legislation creating Minuteman Missile National Historic Site directed the team to evaluate two possible locations — exit 127 about 1 mile south of Delta One, and exit 131 about 4 miles west of Delta One. Both locations exit off of Interstate 90, and both are within the boundary of the national grassland. The U.S. Forest Service will transfer up to 40 acres of grassland at one of these two locations for the national historic site's visitor/administrative facility.

#### Badlands National Park General Management Plan

Badlands National Park is approximately 10 miles south of Minuteman Missile National Historic Site. A general management plan was recently completed for the park. The *Badlands National Park General Management Plan / Environmental Impact Statement* and the *Minuteman Missile National Historic Site General Management Plan / Environmental Impact Statement* planning efforts were developed concurrently with many of the

same NPS personnel serving on both planning teams.

The general management plan for Badlands National Park will provide overall direction for the next 20 years. The park currently draws 1.2 million visitors a year, most of which enter the park using exit 131 of Interstate 90. It is anticipated that many visitors going to Badlands National Park will also stop at Minuteman Missile National Historic Site.

#### Ben Reifel Visitor Center Rehabilitation and Expansion Environmental Assessment

Remodeling of the visitor center in Badlands National Park was completed in 2005. This visitor center is 8.5 miles from the project office and 12.5 miles from Delta One.

#### Badlands National Park Curatorial Facility

A new museum and collection storage structure was constructed near the Ben Reifel Visitor Center in Badlands National Park. The planning for this facility took into consideration space for the storage for museum objects that would be needed by Minuteman Missile National Historic Site.

### NON-NPS STUDIES / PLANS

#### Lakota Heritage and Education Center Environmental Assessment

Before starting the general management plan, the National Park Service and the Oglala Sioux Tribe began partnering in an effort to create a Lakota Heritage and Education Center in the South Unit of Badlands National Park. The origin of the Lakota Heritage and Education Center is derived from congressional authorization (16 USC Section 441o).

Development of the Lakota Heritage and Education Center will create an additional attraction and increase visitation within the region. This anticipated increase is expected to result in an increase in visitation to the Badlands National Park. It could also increase visitation to Minuteman Missile National Historic Site.

### **Nebraska National Forest Land and Resource Management Plan**

The U.S. Forest Service prepared the *Nebraska National Forest Land and Resource Management Plan* in 2001 to provide overall management direction for the national forest, including the Buffalo Gap National Grassland. The plan establishes several land management zones and calls for action that could affect the national historic site. The National Park Service reviewed this plan and submitted comments to the Forest Service.

### **Scenic Byways**

The Wall-Badlands Area Chamber of Commerce prepared a proposal for the creation of Badlands Loop Scenic Byway. The National Park Service supported the designation of that scenic byway, which the state of South Dakota reviewed and approved. The scenic byway starts at Cactus Flats and travels south and

west along the Loop Road through Badlands National Park to the Pinnacles entrance at the western end of the park.

The Oglala Sioux Parks and Recreation Authority has prepared and submitted a proposal for the creation of the Crazy Horse Scenic Byway. The state's main concern is that part of the proposed route is a gravel-surfaced road. However, the Bureau of Indian Affairs is planning to pave that section of road.

The tribe's proposed 133-mile route would enter Cactus Flats at exit 131 of Interstate 90, go south through the town of Interior, then go west on South Dakota Highway 44 to the town of Scenic. From there it would go south on Bureau of Indian Affairs (BIA) Highway 27, intersecting BIA 2 near the White River Visitor Center. It then would continue west, intersecting BIA 41, and then go north to the town of Red Shirt, on west to Hermosa, and on into the Black Hills. It also would go to the entrance of Custer State Park. Effectively, the scenic byway would circle the Stronghold area (Oglala Sioux Parks and Recreation Authority 2000).

It is expected that these scenic byways will increase visitation to both the Badlands National Park and Minuteman Missile National Historic Site.

## PLANNING ISSUES / OPPORTUNITIES

### INTRODUCTION

The general public, NPS staff, and other agencies and organizations identified various issues and concerns during scoping (early information gathering) for this general management plan. An issue is defined as an opportunity, conflict, or problem regarding the use or management of public lands. Comments were solicited at public meetings, through planning newsletters, and on the national historic site's Web site (see the "Consultation and Coordination" chapter).

The issues and concerns generally involve determining the appropriate visitor use, types and levels of facilities, services, and activities while remaining compatible with desired resource conditions. The general management plan alternatives provide strategies for addressing the issues within the context of the national historic site's purpose, significance, and special mandates.

The following issues were identified for Minuteman Missile National Historic Site.

### ISSUES

#### Delta One and Delta Nine Facilities

The Delta facilities have been transferred to the National Park Service with a seldom-equalled level of integrity. The facilities, particularly Delta One, still contain items used in the daily activities of the personnel stationed there. The exterior of the facilities also remain intact, including the grounds. What is the appropriate method of preservation for these facilities? What types of protection should be provided?

#### Cultural Landscape

The landscape surrounding the Delta facilities remains rural. It provides the visual context of the remoteness of the facilities. How can this historic view be maintained and preserved?

#### Collections

The facilities contain numerous collection items both inside and on the grounds. It will be necessary to stockpile restoration support items — spare parts necessary to maintain the facilities that have no intrinsic collection value. What are ways to provide visitors with opportunities to see original collection items? What items should be placed on exhibit at the visitor center? What items should be reproduced or replaced in kind?

#### Visitor Experience

How would visitors access the Delta facilities? What are the visitor experiences that should be offered? How will visitors safely tour the facilities? What type of tours should be provided at each facility? How will visitors travel between facilities?

#### Visitor / Administrative Facility

The legislation directs that exits 127 and 131 be evaluated to determine which would be the NPS preferred location for a visitor facility and administrative site. What is the function of this facility? What should visitors be able to do at this location? How will visitors understand the logistics of the site, what opportunities are available to them, and how would they make decisions about where to go and what to see? What support facilities or infrastructure would be needed?

## **Interpretation**

The legislation directs that the national historic site complement the interpretive programs offered by the South Dakota Air and Space Museum. What level of interpretation would avoid duplication of effort and be complementary?

## **Boundary**

The legislation authorizes “minor” adjustments to the boundaries of Delta One and Delta Nine. It also directs that the boundary of the national historic site be modified to include the selected site of the visitor facility/administrative site. The cultural landscape should be preserved and protected. What boundary changes are needed to protect, interpret, and provide adequate visitor / administrative facilities at the national historic site? What boundary changes are needed to protect and interpret the historic landscape surrounding the site?

## **ISSUES AND CONCERNS NOT ADDRESSED IN THE GENERAL MANAGEMENT PLAN**

Not all of the issues raised by the public are included in this general management plan. Other issues raised by the public were not considered because they

- are already prescribed by law, regulation, or policy (see the “NPS Mandates and Policies” section)
- would be in violation of laws, regulations, or policies

- were at a level that was too detailed for a general management plan and are more appropriately addressed in subsequent planning documents

Many members of the public commented on the types of interpretive stories they would like to hear about at the visitor facility. These suggestions included telling stories of the people who built the Delta facilities, getting service personnel to relate their experiences while stationed at the national historic site, and what it was like to live in the area. This document does contain the primary interpretive themes that would be presented to the public; however, the method of presenting these stories would be detailed in a long range interpretive plan and thus is not considered in this document.

The public suggested items they would like to see on display at the national historic site. A scope of collections statement will be developed that will provide the details of what items should be sought as part of the collection and the manner most appropriate for display of these items. Thus, the items that will be collected and displayed were not addressed in this management plan.

Former military personnel who were stationed at the Delta facilities expressed concern about the public’s safety in a military installation. Concerns were expressed about the public using ladders, elevators, the condition of the air, and other potential dangers. These concerns are not addressed in this plan because there are current laws, regulations, policies, and guidelines the National Park Service must adhere to for visitor safety and resource protection.

## IMPACT TOPICS — RESOURCES AND VALUES AT STAKE IN THE PLANNING PROCESS

### IMPACT TOPICS

An important part of planning is seeking to understand the consequences of making one decision over another. To this end, NPS general management plans are accompanied by environmental impact statements. Environmental impact statements identify the anticipated impacts of possible actions on resources and on national historic site visitors and neighbors. Impacts are organized by topic, such as “impacts on the visitor experience” or “impacts on vegetation and soils.” Impact topics serve to focus the environmental analysis and to ensure the relevance of impact evaluation. The impact topics identified for this general management plan are outlined in this section; they were identified based on federal laws and other legal requirements, Council on Environmental Quality (CEQ) guidelines, NPS management policies, staff subject-matter expertise, and issues and concerns expressed by the public and other agencies early in the planning process (see previous section). Also included is a discussion of impact topics that are commonly addressed, but that are not addressed in this plan for the reasons given.

### IMPACT TOPICS ANALYZED IN DETAIL

#### Cultural Resources

The National Historic Preservation Act, the Archeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, and the National Environmental Policy Act require that the effects of any federal undertaking on cultural resources be examined. Also, NPS *Management Policies 2006* and *Cultural Resource Management Guideline* (Director’s Order 28) call for the consideration of cultural resources in planning proposals. Actions proposed in this plan could affect historic structures, cultural

landscapes, ethnographic resources related to missileers and those associated with constructing or operating the site, and museum collections.

#### Natural Resources

**Air Quality.** The Clean Air Act requires federal land managers to protect air-quality-related values. Air quality impacts have occurred in and near Badlands National Park (the closest air monitoring station and statistics) due primarily to external sources, and are a concern. Implementation of the alternatives could affect the national historic site’s air quality during construction.

**Vegetation.** The Organic Act and NPS *Management Policies 2006* both require the National Park Service to protect and conserve native plants and vegetative communities that could be affected by visitors, managers, and external sources. Impacts from actions proposed in the alternatives, especially the construction of a visitor / administrative facility, would alter or adversely affect these resources.

**Wildlife.** The region supports a diverse wildlife population, including small mammals, ungulates, birds, reptiles, amphibians, and invertebrates. The Organic Act and NPS *Management Policies 2006* both require the National Park Service to protect and conserve native wildlife populations that could be affected by visitors, managers, and external sources. Loss of wildlife habitat could occur with the implementation of alternatives being considered in this plan.



## **Visitor Experience**

Providing for visitor enjoyment and understanding is one of the fundamental purposes of the National Park Service. Many actions proposed in this management plan could affect patterns of visitor use and the type and quality of visitor experiences. Visitor access, orientation, and interpretation are elements of the visitor experience. Some actions in the plan will impact the visitor experience. Therefore this topic will be analyzed.

## **Socioeconomic Environment**

The National Environmental Policy Act requires an examination of social and economic impacts caused by federal actions as part of a complete analysis of the potential impacts on the “Human Environment.” Jackson, Pennington, and Shannon Counties make up the affected area for socioeconomic analysis. Smaller local communities within these counties and private sector businesses, including visitor service facilities and operators (e.g., restaurants and motels) could be affected by actions proposed in this management plan. Developments proposed in the alternatives could affect some parts of the regional social and economic environment. The proposed boundary changes could also affect the socioeconomic environment in the area. Therefore, this topic will be analyzed.

## **NPS Administration and Operations**

Staffing and park priorities may change under some of the alternatives. Therefore, the effects on national historic site operations under each alternative will be examined.

## **IMPACT TOPICS CONSIDERED BUT NOT ANALYZED IN DETAIL**

Several potential impact topics were dismissed because they would not be affected, or the

potential for impacts under all of the alternatives would be negligible or minor. These topics are listed below, with an explanation of why they were not considered in detail.

## **Cultural Resources**

**Archeological Resources.** At the time of the authorization and construction of both the Delta One or Delta Nine facilities, there were no federal mandates to identify, record, or salvage archeological resources before or during military construction activities. It is therefore impossible to know whether any archeological sites were present at either of the two facilities before their construction was undertaken.

Historic photographs show that archeological sites or associated material culture would have been severely impacted to the point of complete obliteration by construction activities. The construction requirements of building subterranean structures to the necessary depth and size required for protection from a near miss of a nuclear detonation necessitated large areas of the surface to be completely removed. The precise limits of these construction impacts are unknown, but it is evident that the disturbance was complete within the fenced enclosure limits of each facility and the immediately surrounding concurrent and direct use areas. Any preexisting archeological sites and materials present would have been destroyed as a result of the construction of the launch control and launch facilities.

It was a typical practice of the U.S. Air Force during the operational period of the facilities to police the facility grounds to keep them free from trash and litter. However, it is unlikely that all trash or lost personal items would have been recovered. As a result during its operational life, it would be expected that archeological formation process would have continued to occur at both Delta One and Delta Nine. Nevertheless, the materials shaping such formation processes would be limited to

the daily litter or the occasional lost personal item and would not be considered significant or likely to contribute to the National Historic Sites National Register of Historic Places eligibility.

Two areas have been identified for locating a proposed visitor center. Both of these areas are out of the footprint of both the Delta One and Delta Nine installations. Neither of these two areas has been inventoried for archeological remains. Before any ground-disturbing activities at either of the two locations, an archeological survey would be conducted to ensure that any if any archeological remains were present proper mitigation of those affects would be undertaken.

**Ethnographic Resources Related to Native Americans.** Native American tribes identified as having a cultural affiliation with the area of the national historic site (see table 4) were consulted to ascertain whether they had any resource concerns within the boundaries or in the surrounding areas of the national historic site. Those contacts resulted in no concerns being expressed.

### Natural Resources

**Floodplains.** The national historic site's facilities are outside of regulatory 100-year floodplains, and none of the developments being proposed in the alternatives would fall within 100-year floodplains. Therefore this topic was dismissed from further analysis.

**Geologic Features and Processes and Soils.** The Organic Act and NPS *Management Policies 2006* both require the Park Service to protect and conserve geologic resources, including soils and paleontological resources, that could be affected by visitors and

managers. All areas proposed for disturbance are areas that are not known to be rich in fossils. However, to ensure preservation, the visitor facility and parking lot areas will be surveyed prior to construction for paleontological resources. Likewise, none of the areas proposed for development contain any unique geologic features. Impacts on geologic features and processes are anticipated to be negligible; therefore they were dismissed from further analysis.

The soils found in the areas proposed for development are common soils found throughout the region. The amount of area that would be impacted from proposed development is a very small area relative to the areas with these soils types. Therefore the impacts on soils are anticipated to be negligible and this topic was dismissed from further analysis.

**Lightscape Management.** In accordance with its *Management Policies 2006*, the National Park Service strives to preserve natural ambient lightscapes, which are natural resources and values that exist in the absence of human-caused light. The national historic site strives to limit the use of artificial outdoor lighting to that which is necessary for basic safety requirements, to ensure that all outdoor lighting is shielded to the maximum extent possible, and to keep light on the intended subject and out of the night sky. The proposed actions would not affect the existing exterior lighting of the Delta One or Delta Nine sites. The addition of a visitor / administrative facility would have a negligible effect on the lightscape; all facilities would be designed to minimize the use of lighting and necessary lighting would be designed to mitigate impacts on the lightscape. Therefore, lightscape management was dismissed as an impact topic.

**TABLE 4. TRIBAL GROUPS WITH AFFILIATION TO MINUTEMAN MISSILE NATIONAL HISTORIC SITE**

Cheyenne River Sioux Tribe	Crow Creek Sioux Tribe
Flandreau Santee Sioux Tribe	Lower Brule Sioux Tribe
Oglala Sioux Tribe	Sisseton-Wahpeton Sioux Tribe
Rosebud Sioux Tribe	Yankton Sioux Tribe
Standing Rock Nation	Ponca Tribe
Omaha Tribe	Santee Sioux Tribe
Winnebago Tribe	Spirit Lake Nation
Three Affiliated Tribes	Turtle Mountain Band of Chippewa
Trenton Indian Service Area	

**Prime and Unique Agricultural Lands.**

According to the Natural Resource Conservation Service, U.S. Department of Agriculture, there are no prime or unique agricultural soils in the national historic site or at either visitor facility or parking area sites. Therefore, this topic has been dismissed from further analysis.

**Soundscape.** NPS *Management Policies 2006* and Director’s Order 47: “Soundscape Preservation and Noise Management” recognize that natural soundscapes are a resource and call for the National Park Service to preserve, to the greatest extent possible, the natural soundscapes of national park system units. The policies and director’s order further state that the National Park Service will restore degraded soundscapes to the natural condition whenever possible, and will protect natural soundscapes from degradation due to noise (undesirable human-caused sound). Minuteman Missile National Historic Site is along Interstate Highway 90, which generates considerable noise. The impacts of the alternative actions proposed in this management plan such as vehicles transporting visitors would contribute a negligible amount of noise relative to the ambient levels of noise in the area. Therefore soundscapes have been dismissed as an impact topic.

**Threatened and Endangered and Special Status Species.** The Endangered Species Act of 1973, as amended, requires an examination of impacts on all federally listed threatened or endangered plant and animal species. NPS *Management Policies* repeat this requirement

and add the stipulation that the analysis examine impacts on state-listed endangered, threatened, or rare species, and federal species proposed for listing. Although the national historic site falls within the range of a few status species, it is not known to support any populations of federal or state endangered species, species proposed for federal listing, state threatened species, or state-listed rare species (see appendix E).

This document does not analyze the environmental effects that the alternatives might have on several federal and stated listed threatened and endangered species that are located in the vicinity of the national historic site. However, NPS staff would conduct site-specific surveys before any ground disturbance took place to be sure that they would not be affected. If any of these species were present, NPS staff would reschedule, reroute, relocate, or otherwise mitigate impacts from the actions being taken. The following special status species have been known to occur within the vicinity of the national historic site.

*Black-tailed prairie dog*— The U.S. Fish and Wildlife Service has identified the black-tailed prairie dog as a candidate for listing as a threatened species. That agency determined in 2000 that listing the species was warranted but precluded by other higher priority actions (*Federal Register*, February 4, 2000). The state of South Dakota classifies the black-tailed prairie dog as a species of management concern. This herbivorous, social, ground squirrel is considered a keystone species of the Great

Plains. There are no prairie dog towns on the two parcels of land being considered for the visitor / administrative facility. Likewise there are no prairie dog towns at Delta One or Delta Nine. Therefore this topic was dismissed from further analysis.

*Black-footed ferret* — The black-footed ferret (*Mustela nigripes*) is listed by both the federal and state governments as endangered. Indeed, it is one of the most endangered mammals in North America. In 1987 only 18 individuals survived. An aggressive captive-breeding and reintroduction program has made progress in recovering the ferret population. There are no known ferrets on or near either of the locations proposed for the visitor/ administrative facility or at or near Delta One or Delta Nine because there are no prairie dog towns, the ferrets' primary habitat, near these sites. Therefore this topic was dismissed from further analysis.

*Swift fox* — Minuteman Missile National Historic Site falls within the estimated historic and current range of the swift fox (*Vulpes velox*), which the state lists as threatened. Swift foxes have been documented infrequently southwest of the South Unit of Badlands National Park in 1995 and in the national grassland adjacent to the North Unit in 1996, 1997, 1998, and 1999, primarily in the Upper Sage Creek area. There have been no sightings of swift foxes near either location being evaluated for the construction of the visitor/ administrative facility, or near or at Delta One or Delta Nine. Therefore this topic was dismissed from further analysis.

*Bald eagle* — Bald eagles (*Haliaeetus leucocephalus*), a state-listed threatened species, is known to occur in the region. Only 27 observations of bald eagles have been documented in nearby Badlands National Park since 1960 (Badlands National Park Natural History Database 2002). Most of these observations have been near water sources (e.g., White River,

stock dams) or prairie dog towns between December and April. Consequently, bald eagle use of the area is considered to be sporadic, uncommon, and unpredictable. Large congregations do not occur, and there are no known, regularly used winter perch sites, roost sites, or nest sites within or adjacent to the national historic site. Given the very limited and sporadic use by eagles in the area, the alternatives being considered would be expected to have no effect on bald eagles.

*Whooping crane* — The federally and state endangered whooping crane (*Grus americana*) is a migrant that uses shallow, sparsely vegetated wetlands, wet meadows, and agricultural fields. No actions are being proposed in the alternatives proposed in this management plan that would be expected to detrimentally affect the areas that the cranes use. With their very limited use of the area, no impacts are expected to occur to whooping cranes under any of the alternatives under consideration.

*Peregrine falcon* — The peregrine falcon (*Falco peregrinus*) is listed by the state as endangered. The national historic site does not include suitable nesting habitat for the falcon. Therefore impacts on the falcon are not anticipated.

*Mountain lion* — Mountain lion (*Felis concolor*), a state-listed threatened species, are believed to be expanding out from the Black Hills. However, mountain lions are not believed to frequent the national historic site. There have been only 37 documented mountain lion observations in nearby Badlands National Park since 1960, averaging less than one sighting per year between 1960 and 1995 (Badlands Natural History Database 2002). Although sightings have increased within nearby Badlands National Park to an average of two or three per year since 1995, most of the sightings throughout the park appear to be young transient males that are probably

emigrating from the expanding Black Hills population. Mountain lions have extremely large home ranges (territories can be greater than 500 square kilometers depending on the mountain lion's age, sex, and season of the year), and there is a large land base in the region for them to use, if disturbed. Consequently, impacts due to the actions proposed in the alternatives likely would be negligible.

**Water Quantity.** Surface water is scarce in this area of South Dakota. Most streams in the region flow intermittently. Most water used in NPS facilities is obtained from groundwater and from sources outside the national historic site. The national historic site will be receiving additional water from regional water distribution systems, which should meet its needs for the foreseeable future. None of the alternatives being considered would be expected to substantially change either surface or groundwater flows in the national historic site, or affect its water supply.

**Water Quality.** Water quality is believed to vary seasonally and from stream to stream, although the causes of these fluctuations are unknown (Black & Veatch 1998). Construction of developments proposed in the alternatives would likely increase erosion, even with mitigative measures, which in turn would result in a temporary increase in sediment-loading of surface waters. However, this increase is expected to be negligible given the naturally high rates of erosion and sediment loading that characterize the landscape — the additional sediments that would be temporarily added as a result of the alternatives being considered would be a small increment in what are normally turbid, sediment-laden waters. Thus, the impacts would be negligible.

**Wetlands.** Delta One and Delta Nine sites have no areas that meet the definition of a wetland, nor does the preferred location for the visitor/ administrative facility on National Grassland property northwest of exit 131 area. The National Grasslands property located on

the south side of exit 127 contains a wetland (see Region map). However, if this location was selected, impacts on the wetland would be avoided or minimized through design of the visitor/ administrative facility. Therefore wetlands were dismissed as an impact topic.

**Natural or Depletable Resource Requirements and Conservation Potential.** None of the alternatives being considered would result in the extraction of resources from the national historic site. Under all of the alternatives ecological principles would be applied to ensure that the national historic site's natural resources were maintained and protected. Implementation of the alternatives would result in the use of limited natural resources and energy for construction and operation of new facilities. New developments would be designed to be sustainable to the maximum extent practicable. Thus, there would likely be a negligible impact on natural resources.

**Environmental Justice.** On February 11, 1994, President William J. Clinton signed Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This order requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs/policies on minorities and low-income populations and communities. The Secretary of the Interior established Department of the Interior policy under this order in an August 17, 1994, memorandum. This memorandum directs all bureau and office heads to consider the impacts of their actions and inactions on minority and low-income populations and communities; to consider the equity of the distribution of benefits and risks of those decisions; and to ensure meaningful participation by minority and low-income populations in the Department's wide range of activities where health and safety are involved.

For fulfilling Executive Order 12898, in the context of the National Environmental Policy Act, the planning team assessed the alternatives presented in this management plan during the planning process. The team determined that none of the proposed alternatives would result in major direct or indirect negative or disproportionately adverse effects on any minority or low-income population or community as defined in the Environmental Protection Agency's *Environmental Justice Guidance* (1998). Therefore, the topic of environmental justice was dismissed as an impact topic in this document. The following information contributed to the dismissal of environmental justice as an impact topic.

As explained in the "Affected Environment" chapter, American Indian is the largest minority group in the three-county affected region. The 20,307 American Indians (Oglala Sioux Tribe) represent about 19.5% of the region's total population of 103,961 persons. Other minority groups make up less than 1% (each) of the total population. American Indians make up the majority of persons living in Shannon County and comprise almost half of the population in Jackson County. (All of Shannon County and more than half of Jackson County are within the Pine Ridge Indian Reservation.) A small percentage of people who are of Hispanic or Latino ethnicity also live within the affected region.

The national average for persons living in poverty in 1989 was 13.1% (see table 20 in Chapter 3). The poverty rate for South Dakota was slightly higher at 15.9%. Over the years, only Pennington County's poverty rate has been near that for the state and nation. Both Jackson and Shannon Counties exhibit patterns of high poverty rates. Both of these counties have had a history of poverty rates that were substantially higher than the state and national averages.

The following information contributed to the dismissal of environmental justice as an impact topic:

- The developments and actions of the alternatives would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect negative or adverse health effects on any minority or low-income population or community.
- The impacts on the natural and physical environment that occur due to any of the alternatives would not disproportionately adversely affect any minority or low-income population or community.
- The alternative would not result in any identified effects that would be specific to any minority or low-income community.
- The Minuteman Missile National Historic Site planning team actively solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- NPS staff and planning team members have consulted and worked with the affected American Indian Tribe (Oglala Sioux Tribe) and will continue to do so in cooperative efforts to improve communications and resolve any problems that occur. In addition, the planning team did not identify any negative or adverse effects that disproportionately and adversely affect this tribe.
- Impacts on the socioeconomic environment due to the alternatives are minor or positive and occur mostly within the three-county region containing the national historic site. These impacts would not occur all at one time but would be spread over a number of years, thus mitigating their effects. In addition, the planning team does not expect impacts on the socioeconomic environment to result in major effects on the physical and social structure of the nearby communities.



**CHAPTER 2:  
ALTERNATIVES,  
INCLUDING  
THE PREFERRED  
ALTERNATIVE**

TRANSPORTER ERECTOR  
AT ELLSWORTH AIR FORCE BASE



VIEW OF LAUNCH CONTROL FACILITY  
SUPPORT BUILDING, DELTA ONE



AERIAL VIEW OF DELTA ONE





## INTRODUCTION

Many aspects of the desired future condition of Minuteman Missile National Historic Site are defined in the enabling legislation, the national historic site's purpose and significance statements, and the NPS mandates and policies that were described earlier. Within these parameters, the National Park Service solicited input from the public, partners, NPS staff, government agencies, tribal officials, and other organizations regarding issues and desired conditions for the national historic site.

Planning team members gathered information about existing visitor use and the condition of the national historical site's facilities and resources. A transportation study was conducted to analyze the transportation needs for the national historic site, possible road improvements, and projections of visitor numbers.

Using the above information the planning team developed a set of six management zones and four alternatives to reflect the range of ideas proposed by the planning team, NPS/national historic site staff, and the public.

This chapter describes the management zones and the alternatives for managing the national historic site for the next 25 years. It includes tables that summarize the key differences between the alternatives and the key differences in the impacts that are expected from implementing each alternative. (The summary of impacts table is based on the analysis in "Chapter 4, Environmental Consequences.") This chapter also describes mitigative measures that would be used to lessen or avoid impacts, the future studies that would be needed, and the environmentally preferred alternative.

## IMPLEMENTATION

More detailed plans or studies will be required before most conditions proposed in the alternatives are achieved. The implementation of any alternative (approved plan) also depends on future funding, environmental compliance, and NPS priorities. This general management plan establishes a vision of the future that will guide day-to-day and year-to-year management of the national historic site, but **full implementation could take many years**. Full implementation of major or especially costly actions, including capital construction, staff increases, boundary adjustments, and shuttle operations may be completed years into the future. If full funding is not immediately available, a phased approach for implementing the plan will be necessary.

Current staffing levels at the national historic site total 7.75 full-time-equivalent (FTE) employees — 6 permanent employees, 3 temporary employees, and 1 temporary "split position" employee shared with Badlands National Park. Alternatives 2, 3, and 4 propose staffing increases to fully implement the alternative. Funding, however, may not be immediately available when the plan is finalized. If this is the case, staff increases and the actions these additional employees would accomplish would have to be phased in as future funding becomes available. An implementation schedule for the preferred alternative is described in this chapter under alternative 4.

## MANAGEMENT ZONES

The building blocks for reaching an approved plan for managing a national park system unit are the management zones and the alternatives. Both are developed within the

scope of the national historic site's purpose, significance, mandates, and legislation.

Management zones propose a range of desired future conditions for resources, visitor experiences, facilities, and administrative needs in each alternative. Management zones are determined for each national park system unit; however, the management zones for one unit will likely not be the same for any other national park system unit (although some might be similar). The management zones fall within the scope of the national historic site's purpose, significance, and special mandates. Six management zones have been identified for the national historic site (see table 5).

Each of the alternatives in this plan has an overall management concept and a description of how different areas of the national historic site would be managed (management zones and related actions). For example, perhaps one management zone is called "self-directing" and another zone is called "preservation learning." An alternative whose concept is to allow visitors to see most of the national historic site on their own would have more of the self-directing zone than the preservation/learning zone. Both zones might also be larger or smaller and in different locations in different alternatives, depending on the overall concept for each alternative.

Special circumstances also may influence the placement of the zones. For example, the underground launch control center (capsule) is in the preservation/learning zone in each alternative because the load capacity of the elevator dictates a maximum of six visitors and an NPS ranger.

## THE ALTERNATIVES

This *Draft General Management Plan / Environmental Impact Statement* presents four alternatives, which includes the National Park Service's preferred alternative, for future management of the national historic site. Alternative 1, the "no-action" alternative,

presents a continuation of existing management direction and is included as a baseline for comparing the consequences of implementing each alternative. The other "action" alternatives are alternative 2, alternative 3, and alternative 4 (preferred). These action alternatives present different ways to manage resources and visitor use to preserve and protect the cultural and natural resources at the national historic site. These four alternatives embody the range of what the public and the National Park Service want to see accomplished with regard to cultural resource conditions, natural resource conditions, visitor use and experience, the socioeconomic environment, and NPS operations at Minuteman Missile National Historic Site. The actual configurations for each action alternative were developed by overlaying the management zones on a map of the national historic site.

The management concept developed for each alternative, and its accompanying management zone scheme, gives the planning team and the public an idea of what the national historic site would be like under each alternative in 25 years.

As noted in the "Guidance for Planning" section in Chapter 1, the National Park Service would continue to follow existing agreements and NPS mandates, laws, and policies regardless of the alternatives considered in this plan. These mandates and policies are not repeated in this chapter. (See also appendix B.)

*To truly understand the implications of an alternative, it is important to interpret the actions proposed in an alternative in the context of the NPS mandates and policies.*

**TABLE 5. MINUTEMAN MISSILE NATIONAL HISTORIC SITE MANAGEMENT ZONES, ALTERNATIVES 2, 3, AND 4**

Management Zone	Resource Condition or Character	Visitor Experience (what the visitor sees, feels, encounters)	Appropriate Activities or Facilities (what the visitor is doing, what facilities may be appropriate)
Limited Access	<p>The zone would provide maximum preservation of significant resources, primarily located underground and difficult or dangerous to access. Tolerance for resource degradation would be very low. Resources in this zone have a high level of integrity and are one of a kind.</p>	<p>Access to this zone would be restricted and permitted only for the purposes of research and other well-justified special uses. Access to underground resources would require a moderate to high expenditure of physical exertion.</p>	<p>Visitor access would be restricted to approved activities. Management actions would focus on resource preservation. The rattle space around the launch control center, the underground maintenance access for the hardened HF and UHF antennas, the interior of the missile launcher (silo) and underground area of the launch facility support building are in the limited access zone in all action alternatives.</p>
Preservation/ Learning	<p>Resources in this zone would be restored to ready alert (active duty) conditions. Resources would be on site and in place as much as possible to give the impression that military personnel were still present. Tolerance for resource degradation would be low. Only those changes that are essential for visitor access, safety or to ensure resource preservation would be allowed. Changes to the original fabric would be reversible or removable.</p>	<p>Predominant activities would include viewing resources and attending interpretive walks and talks. The visitor experience would be controlled, structured, and directed through ranger-led tours. Intimate interaction with resources would be offered where possible without undue resource impacts. Visitors would need to exert some physical effort and make a moderate (one-hour) to high (three-hour) time commitment. Reservations would be required to enter the underground capsule on a guided tour. There would be a high probability of encountering NPS staff. There would be a low probability of seeing evidence of other NPS management activities.</p>	<p>Visitors and resources would be intensively managed to ensure maximum resource protection and to provide for public safety. Accommodations would be made to facilitate visitor access. Management actions essential for visitor access, safety, or resource protection would be as unobtrusive as possible to provide the atmosphere of an active military operation.</p>
Education/ Interpretation	<p>Collections and exhibit items (e.g., artifacts, collections, vehicles, and missiles) could be available for viewing. The cultural and natural environment could be minimally rehabilitated (modified) for visitor use, interpretation, and administrative support. This zone is used at Delta One and Delta Nine and at the visitor / administrative facility.</p>	<p>Visitors would get an overview of site resources and significance in a short time and with a minimum of physical exertion. Learning about the site, seeing interpretive media, and attending interpretive programs would be common activities. Interaction and encounters with other visitors and NPS staff would be common. There would be a high probability of evidence of NPS management activities.</p>	<p>Development near Delta One or Delta Nine would be minimal and blend with the surrounding environment. Orientation, interpretation, visitor services (wayside exhibits, interpretive media including outdoor classrooms, restrooms, picnic facilities, parking) and administrative support (kiosk, contact station) could be appropriate. This zone could also include the facilities necessary to support a shuttle system. Orientation and interpretive facilities, such as a visitor / administrative facility, could also occur in this zone.</p>

CHAPTER 2: ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

Management Zone	Resource Condition or Character	Visitor Experience (what the visitor sees, feels, encounters)	Appropriate Activities or Facilities (what the visitor is doing, what facilities may be appropriate)
Administration/ Operations	<p>The cultural and natural environment could be modified for NPS operational needs. These modifications would harmonize with the surrounding environment.</p> <p>This zone is used at Delta One and Delta Nine and at the headquarters.</p>	<p>There might be some restrictions on visitor activities to provide for visitor safety. Media for interpretation, resource protection, and visitor safety could be available. Visitors could encounter NPS staff and administrative support facilities.</p>	<p>Facilities appropriate in this zone would include parking, picnic areas, kiosks, safety and interpretive signs, shuttle support areas, headquarters, maintenance areas, residential areas, and access roads. In this zone, any development at or near Delta Nine and Delta One would be minimal and blend in with the surrounding environment.</p>
Self-Directing	<p>Resources would be rehabilitated/restored to stand-down conditions. As part of rehabilitation, primary materials, features, and details significant to the stand-down appearance are preserved. Changes to the remaining cultural resource fabric are allowed to facilitate visitor experience and protect primary cultural resources.</p> <p>Collections and artifacts on site would have a high level of integrity but be able to withstand high visitation with little or no damage to the resources. To accommodate increased visitation, resources could be protected using a variety of methods, such as securing in place, using reproductions, placing on display at the visitor facility, or placing in storage. Tolerance for resource degradation would be low.</p>	<p>The experience would be primarily a self-guided exploration opportunity. Opportunities for learning would be provided through unobtrusive interpretive media and signs. Visitors would determine the length of their stay. There would be a moderate to high probability of encountering other visitors and a very low chance of encountering NPS staff. A limited number of guided tours or interpretive talks would be available above ground. Reservations would be required to enter the underground capsule on a guided tour.</p>	<p>Minimal and unobtrusive interpretive media, such as waysides or brochures, would be provided to assist visitors in a self-guided experience. Tours or interpretive talks would be available. Unobtrusive modifications could be made to protect resources and provide for visitor safety and accommodate accessibility — such as trails or benches, ramps, barriers, or protective coverings.</p>
Perimeter	<p>The landscape would retain its historic use and character (primarily rural and agricultural). Scattered cultural resources in this zone (e.g., HICS [hardened interstate cable system], helipad, azimuth markers, catholic protection well, and chain link security fence) would be preserved.</p>	<p>Visitors could wander in this zone for activities such as sightseeing and photography, but no facilities would be developed to encourage or support this use.</p>	<p>Mowing and other range management activities, such as livestock grazing, would be allowed up to the perimeter fences at Delta One and Delta Nine. Minimal and unobtrusive interpretive signs would be allowed.</p>

## Formulation of the Alternatives

The action alternatives focus on *what* future resource conditions and visitor uses and experiences/opportunities are needed to achieve the concept of that alternative rather than on details of *how* these conditions should be achieved. However, because Minuteman Missile National Historic Site is a new unit of the national park system and because the site is very small, this plan has more detail than normally found in general management plans for larger, more established sites. This detail is intended to ensure adequate guidance.

## Identification of the Preferred Alternative

The development of a preferred alternative involves evaluating the alternatives with the use of an objective analysis process called “choosing by advantages” (CBA). Through this process, the planning team identified and compared the relative advantages of each alternative according to a set of factors.

The relationships between the advantages and costs of each alternative are established. This information is used to combine the best attributes of the initial alternatives into the preferred alternative. The preferred alternative gives the National Park Service the greatest overall benefits (see appendix F).

Exit 131 was chosen as the preferred location for the visitor / administrative facility (see appendix F) and combined with alternative 4, the preferred alternative.

## USER (CARRYING) CAPACITY

The National Parks and Recreation Act of 1978 (Public Law 95-625) requires, among other things, that general management plans include “*identification of an implementation commitment for visitor carrying capacities for all areas of the unit. . .*” In addition, NPS *Management Policies* require that general management plans address the issue of visitor

use (formerly carrying) capacity. Identifying the user capacity as a management tool is a legal and a procedural mandate designed to assist in effective management of national park system unit resources and visitors.

Visitor use capacity is the type and level of visitor use that can be accommodated while sustaining the quality of a park unit’s resources and visitor opportunities consistent with the purposes of the park unit. It is not necessarily a set of numbers or limits but rather a process involving monitoring, evaluation, actions (managing visitor use), and adjustments to ensure park unit values are protected. At the general management plan level of decision making, management zones address user capacity because they include qualitative descriptions of desired resource conditions and visitor opportunities. The strategy of addressing user capacity at Minuteman Missile National Historic Site is a tiered approach that will keep a general eye on broad trends while focusing more specific monitoring and management on areas where action is most likely needed to achieve desired conditions.

One of the first implementation actions will be to initiate general monitoring of visitor use. NPS staff need to keep a broad perspective on user capacity, watching for trends that may warrant moving to more specific monitoring and management. NPS staff at the national historic site are currently collecting data on visitation numbers. The staff will develop a more systematic database that will pull information and observations together on a regular interval of time in a manner that will make trends visible. Significant changes in trends seen in the database may trigger more specific monitoring and management focused on specific areas of concern.

Where there are known threats or impacts to resources or visitor experience, monitoring and management actions will begin.

If this first tier of monitoring indicates trends of resource degradation or impacts to the visitor experience, a more systematic visitor use management planning effort will be required. This will entail using a planning process such as Visitor Experience and Resource Protection (VERP). This planning framework will allow NPS staff to develop more detailed goals for resource conditions and visitor experiences in specific areas of the national historic site. Based on these goals a monitoring program, using indicators and standards, will be established. The results of the monitoring will be applied to managing visitor use in these areas.

## VISITATION AND TOUR CAPACITY

The alternative transportation system study conducted in May 2003 estimated visitation figures for the life of this plan.

The projected visitation figures outlined below are considered reasonable at this time (2006). The method used to arrive at these figures is contained in the 2003 “Alternative Transportation System Study.” This study is available from the national historic site’s headquarters upon request or may be ordered at cost from the Denver Service Center’s Technical Information Center. Because it is not possible to predict future visitation figures with certainty, these numbers were developed using the best information available at the time. The figures presented here are **estimates** only, and are used to assist the decision makers and readers in understanding the differences in the alternatives.

### Visitor and Administrative Facility

The transportation study anticipated that in five years a visitor facility developed near exit 127 would attract approximately 221,000 visitors annually and 228,000 visitors annually in 20 years. A visitor facility developed near exit 131 would attract approximately 474,000 annual visitors in five years and 488,100

visitors annually in 20 years. The estimates considered regional visitation trends, local attractions, and visitor patterns. The estimates for a facility at exit 131 took into account the estimated 1.2 million annual visitors that currently use this exit to travel to Badlands National Park. Although estimates only, developing a new visitor center/administrative facility at either exit will draw a significant number of annual visitors. In turn, visitation numbers affect decision making on issues such as landscape protection, boundary changes, and shuttle tours.

### Interpretive Tours

The underground launch control center (capsule) at Delta One was designed for two military personnel to access the capsule. The elevator can accommodate six visitors plus an interpreter. Therefore, in all alternatives reservations are required for tours of the capsule.

The above ground launch control facility support building at Delta One was designed to house 8 to 10 military personnel. This small building contains many original furnishings. Therefore, the alternatives provide different methods for maximizing visitation inside the support building while protecting sensitive resources.

Once the national historic site is fully operational, tour schedules and tour group sizes would be adjusted up or down depending on actual visitation figures, visitor and operational needs, interpretation goals, visitor safety, resource protection, and a number of other considerations.

### Shuttle Tours

Alternatives 2 and 4 call for shuttle tours. The “Alternative Transportation System Study” developed several methods of operation for shuttle tours. The study estimated a 40-

passenger shuttle for alternative 2 and an 18-passenger shuttle for alternative 4. The shuttle tours would start at the visitor facility. The differences in shuttle tour operations are contained in the descriptions of alternatives 2 and 4. These shuttles could be purchased or rented by the National Park Service. Note that shuttles would not be used until visitation is at a level where the protection of resources was a concern and the shuttles were cost-effective.

## **COMPARISON OF ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES**

The actions of the alternatives are compared in table 10. The environmental consequences that would result from each alternative are compared in table 11.

## BOUNDARY ASSESSMENT AND COST ESTIMATES

### BOUNDARY ASSESSMENT

NPS *Management Policies 2006* states that the boundary of a national park system unit may be modified only as authorized by law (section 3.5). As part of the planning process, the National Park Service is required to identify and evaluate boundary adjustments that may be necessary or desirable in order to carry out the purposes of the park unit. Boundary adjustments may be recommended to

- protect significant resources and values, or to enhance opportunities for public enjoyment related to park purposes;
- address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineation such as topographic or other natural features or roads; or
- otherwise protect park resources that are critical to fulfilling park purposes.

Additionally, all recommendations for boundary changes must meet the following criteria:

- The added lands will be feasible to administer, considering their size, configuration, and ownership, and hazardous substances, costs, the views of and impacts on local communities and surrounding jurisdictions, and other factors such as the presence of exotic species; and
- Other alternatives for management and resource protection are not adequate.

The statutory authority included in the enabling Act for Minuteman Missile National Historic Site allows the secretary of the Department of the Interior to make minor adjustments to the boundary, and contains authorization for the transfer of lands from another federal agency to the National Park

Service for the development of a visitor facility and administrative site. As a part of this planning process, the National Park Service has evaluated the boundary and identified the adjustments necessary — those allowed by existing legislation and those needing additional legislative authority) for carrying out the purposes of the national historic site under each of the alternatives.

### Delta One Launch Control Facility

The legislated boundary at Delta One is 10 acres. This area encompasses 6.35 acres transferred to the National Park Service from the United States Air Force on October 12, 2001. The former USAF acres align with the tracts originally obtained by the USAF (for construction of the facility) from private landowners. Although the intention of Congress was to provide for a boundary that encompassed publicly owned land from the U.S. Air Force and U.S. Forest Service, a survey shows that the remaining 3.65 acres within the legislated boundary are actually privately owned. A technical revision to the official map accompanying the legislation will be needed to align the boundary with existing public ownership. When completed, the enabling legislation would allow the transfer, from the U.S. Forest Service to the National Park Service of the remaining 3.65 acres within the boundary around Delta One without additional legislation.

**Significance of the Potential Addition.** In the 1999 enabling legislation, Congress found the site “symbolic of the dedication and preparedness exhibited by the missileers of the Air Force stationed throughout the upper Great Plains in remote and forbidding locations during the Cold War.” The facilities of Delta One are situated in a rural landscape of prairie grasslands, agricultural pastures, and wheat fields, largely unchanged from their



appearance during the active years of the Cold War. The cultural landscape provides a compelling illustration of the remoteness noted in congressional testimony. During congressional hearings on S. 382 (Senate Bill 382, to establish the Minuteman Missile National Historic Site in South Dakota), testimony from Ellsworth Air Force Base personnel described the site as “the secret underground world of the nuclear missile, silently poised beneath the peaceful prairies of the Great Plains.” The Delta facilities were built in accordance with Air Force strategy of “dispersal.” Facilities were dispersed in rural areas outside the confines of Air Force bases to increase their chances for surviving a nuclear attack. As the only remaining example of this significant period in U.S. history, Delta One and its rural setting provide an opportunity to interpret the historic role of geography in Cold War defense. According to the South Dakota state historic preservation officer, “At some sites, the setting, location, feeling, and association take a back seat to the more physical aspects of design, craftsmanship, and materials. But with this site, those elements are integral. A large part of the significance of the site is clearly its isolated location.”

**Feasibility of the Potential Addition.** The Minuteman Special Resource Study Team (1993) determined that the “primary threat to Delta One and Delta Nine is the potential for development of adjacent lands in ways that might intrude on the historic character . . . .” Recently, the introduction of a cellular tower at Delta One has altered the historic landscape, and although the integrity of the remaining landscape is remarkably intact, this visual intrusion will continue to have an adverse effect. Further alterations to the traditional agricultural uses and prairie grasslands could have adverse impacts on the historic landscape at Delta One. The National Park Service and the South Dakota state historic preservation office have jointly analyzed the former security easements “leased” by the U.S. Air Force, the historic viewshed, and topography surrounding Delta One. After consulta-

tion with the landowners, the National Park Service recommends the inclusion of the associated cultural landscape (approximately 420 acres) within the boundary of the national historic site. Because the National Park Service is interested in protecting the traditional agricultural uses of the prairie grasslands, full fee ownership is not required. Willing-seller, or less-than-fee interest acquisition, would be appropriate and would maintain some private property rights while protecting the historic character of the surrounding landscape. Any such action would be contingent upon available funding and congressional legislation would be required for the boundary adjustment.

**Other Alternatives for Management.**

Historic preservation clearly is within the mission of the state historic preservation office and the state has easements pertaining to historic structures within their jurisdiction. Although the state historic preservation office is very supportive of a greater level of protection for these nationally significant resources, the state does not pursue easements for interests in lands outside of state parks and historic sites and is unwilling, due to budget constraints, to enter into a cooperative arrangement to preserve the cultural landscape at Delta One.

Although a major stakeholder in issues affecting the national historic site, Ellsworth Air Force Base lacks a mission agenda for land conservation purposes and cannot preserve resources that they no longer own.

The U.S. Forest Service owns huge tracts of land adjacent to both Delta One and Delta Nine. The mission of the U.S. Forest Service is to ensure sustainable ecosystems by restoring and maintaining species diversity and ecological productivity that helps provide recreation, water, timber, minerals, fish, wildlife, wilderness, and aesthetic values to meet the needs of present and future generations. The multiple-use mission of the U.S. Forest Service, while including recreation and

aesthetic values, does not directly include the preservation of historic resources.

**Summary.** The lands surrounding the national historic site are significant cultural assets, directly related to the purposes for which Minuteman Missile National Historical Site was established. A boundary adjustment is recommended to protect significant national historic site resources and values at Delta One. For all the alternatives, in addition to the acreage described in the enabling legislation, the National Park Service proposes that 420 acres be added around the control facility to protect the associated cultural landscape. A congressional boundary adjustment would be necessary at Delta One.

### **Delta Nine Missile Silo Facility**

The legislated boundary at Delta Nine is 5 acres. The 5 acres includes a core 1.5 acres that encompasses the actual missile silo, and was transferred to the National Park Service from the U.S. Forest Service. The 1.5 acres align with the tract formally used by the U.S. Air Force for the Minuteman Missile program. The enabling legislation allows for the transfer of the remaining 3.5 acres within the boundary around Delta Nine from the U.S. Forest Service to the National Park Service.

In alternatives 1, 2, and 4, the boundary as depicted on the alternative maps suffice; no additional acres would be added to the current boundary. In alternative 3, an additional 5 acres would be added to the site, bringing the boundary at Delta Nine to 10 acres. Under alternative 3 the purpose of the additional acreage would be to enhance opportunities for public enjoyment related to national historic site purposes. Alternative 3 includes development of a visitor contact station, parking area, and restrooms. These facilities would provide for visitor services and interpretation. A congressional boundary adjustment would be needed for adding 5 acres under alternative 3.

### **Future Visitor Center / Administrative Facility**

The act establishing the national historic site outlined the study areas for the visitor and administrative support facility and authorized, on a determination by the secretary of the Department of the Interior, a boundary modification for the visitor facility and administrative site to serve the national historic site. In alternative 1, no additional lands would be added to the boundary. In addition to those lands depicted on the map accompanying the legislation, the National Park Service proposes that up to 25 acres be transferred from the U.S. Forest Service to the National Park Service in alternatives 2, 3, and 4 to accommodate the full range of infrastructure to support visitor and administrative services and operations of the site. A congressional boundary adjustment would be needed.

## **DEVELOPMENT OF COST ESTIMATES**

NPS decision makers and the public must consider an overall picture of the complete costs and advantages of various alternatives, including the no-action alternative, to make wise planning and management decisions for the national historic site. Such consideration can shed light on the cost of the no-action alternative and make possible a more legitimate comparison to the action alternatives. Class C estimates are used; these figures are not to be used for budgetary purposes or implementation funding requests.

It is important that the cost estimates contain the same elements and that they be developed with the same general assumptions so that there can be consistency and comparability among alternatives. The development of total one-time costs provides a way to combine annual costs (such as staff salaries and operating costs) into comparable numbers. Total one-time cost estimates are a key factor, along with the impacts and advantages of the various alternatives, that are used during the selection of a preferred alternative.

### **Initial Construction Costs**

- new development (including NPS infrastructure costs)
- major rehabilitation or restoration of existing facilities
- resource management and visitor service costs (resource and visitor inventories, implementation planning, compliance)

### **Recurring Annual Costs**

- annual national historic site operating costs (staff salary and benefits, maintenance, utilities, monitoring, contract services)

### **Other One-Time Costs**

- interpretive media (audiovisual materials, exhibits, waysides, and publications)
- costs that require separate federal appropriations.

### **Boundary Expansion Costs**

Proposing expansion of the boundary of the national historic site does not make funds available. It may be several years before funds are actually available to implement the plan. Therefore, these costs have not been included in the estimates.

### **NPS Facilities Model**

The National Park Service has developed facility models for several types of facilities, such as visitor centers and maintenance facilities, based on a number of factors unique to each national park system unit. This model was used in estimating the square footage of the visitor / administrative facility to be constructed in each action alternative. The 7,700-square-foot facility model was approved by the NPS Midwest Regional Office.

## ALTERNATIVE 1, NO ACTION

### CONCEPT

This alternative consists of a continuation of current management direction and trends at Minuteman Missile National Historic Site. It provides a baseline for comparison in evaluating the changes and impacts of the other alternatives. Visitors would find facilities much as they were when turned over to the National Park Service.

### PRIMARY VISITOR / ADMINISTRATIVE FACILITY — THE PROJECT OFFICE — AT EXIT 131

The project office (a trailer on private property south of exit 131 on Interstate 90) would continue as the visitor support facility and staff offices. Visitor support facilities would continue to include an orientation and interpretation area and restrooms. Parking would continue to be available for cars and buses. There would continue to be no directional signs to the Delta facilities or the project office on Interstate 90; however, directional signs to the project office were placed on Highway 240 in early 2006.

### RESOURCE CONDITIONS

Only essential preservation and stabilization activities necessary to prevent further deterioration (such as mold and rust) would be performed on the structures. Minor damage that occurred during deactivation (1991 to 1993), such as the hole in the women's shower stall, would remain. Major damage that occurred after deactivation, such as a leaking roof, would be repaired. Environmental monitoring and dehumidification equipment would be used to control dust, rust, humidity, etc.

No changes would be made to the facilities other than those necessary for operational needs and visitor safety. Outside the security

chain-link fence at both Delta facilities, cattle grazing (a historic use) would continue.

### VISITOR EXPERIENCE ON-SITE

Visitors would continue to find the facilities in their current condition. A reservation would continue to be required for tours, and tour capacity would continue to be six visitors plus an interpreter. (Reasonable efforts would continue to be made to accommodate drop-in visitors who do not have reservations.) The approximately two-hour Monday-Friday tour would continue to start at the project office, and the group would car caravan (visitors using their own vehicles) to Delta One, about 4 miles from the project office. After learning about Delta One, including the underground launch control center (capsule), the group would then continue to car caravan to Delta Nine (about 11 miles). The tour would continue to be concluded after seeing the missile silo and site.

With the resolution of some safety issues and requirements, 2005 had the first tours of the underground capsule and the first tours that accommodated visitors in wheelchairs. Wheelchairs can access the launch control facility living room through the equipment room door (which is not usually opened for tours), and companions of visitors in wheelchairs can help visitors get into the utility rooms. To enter the underground capsule, visitors must be able to climb a 30-foot ladder back to the surface (in case the elevator or power fails). At Delta Nine there are no buildings to access; however, the gravel is difficult for wheelchairs to move about in. Visitors in wheelchairs might be driven to the concrete pad for easier movement. All considerations for visitors with disabilities are explained when reservations are made.



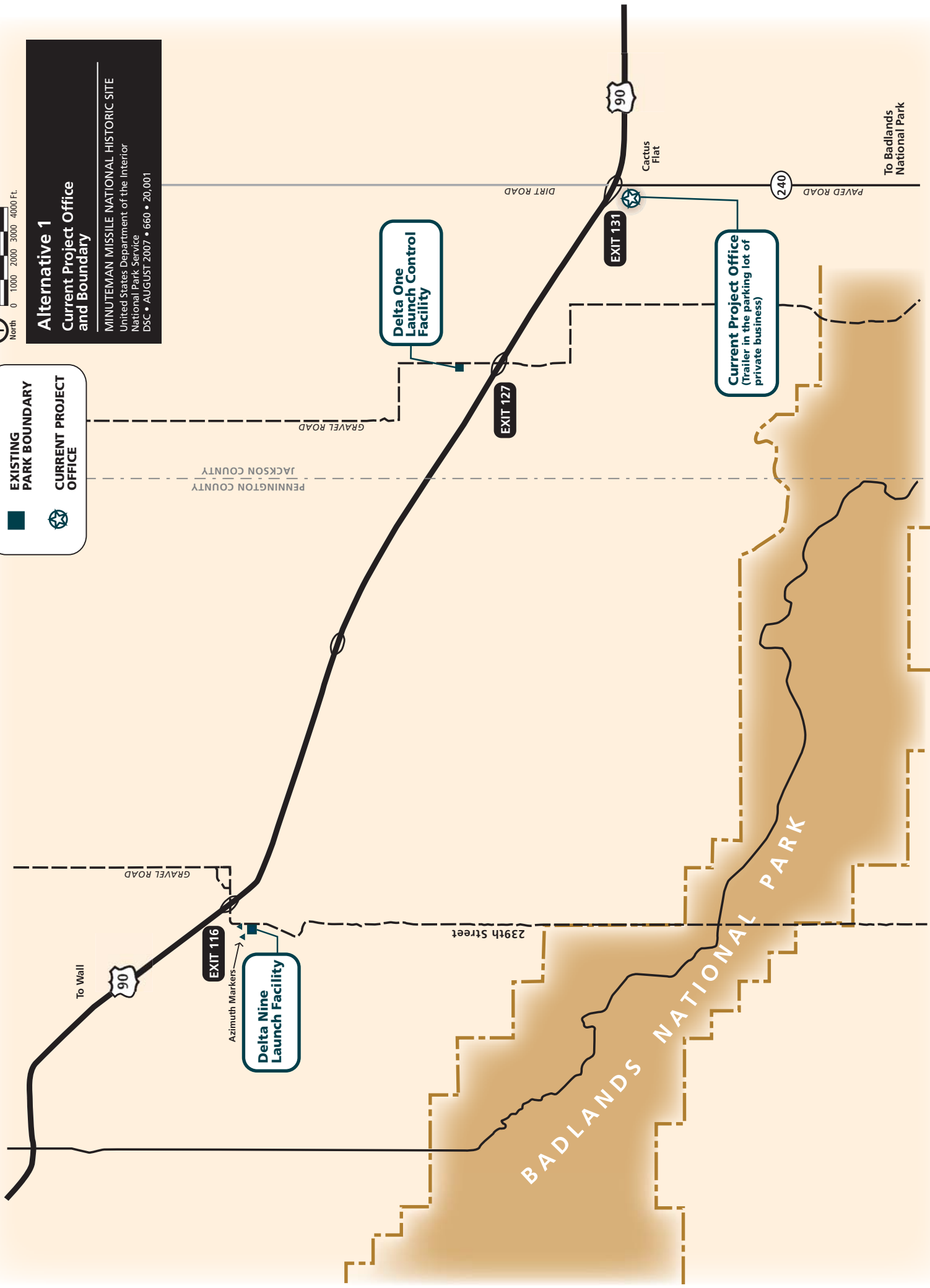
North 0 1000 2000 3000 4000 Ft.

# Alternative 1 Current Project Office and Boundary

MINUTEMAN MISSILE NATIONAL HISTORIC SITE  
United States Department of the Interior  
National Park Service  
DSC • AUGUST 2007 • 660 • 20,001

**EXISTING PARK BOUNDARY**

**CURRENT PROJECT OFFICE**



To Wall



EXIT 116

Azimuth Markers

Delta Nine Launch Facility

239th Street

BADLANDS NATIONAL PARK

PENNINGTON COUNTY  
JACKSON COUNTY

GRAVEL ROAD

EXIT 127

Delta One Launch Control Facility

EXIT 131

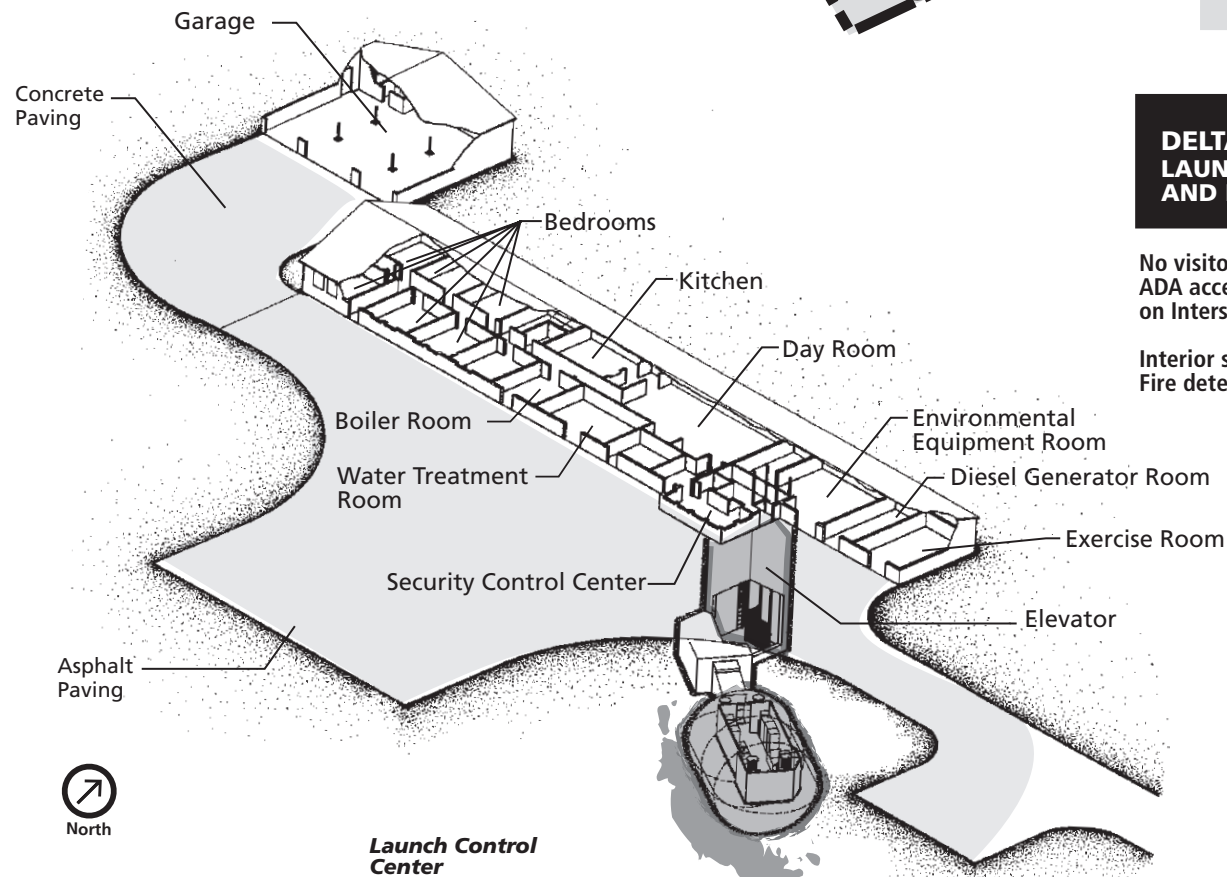
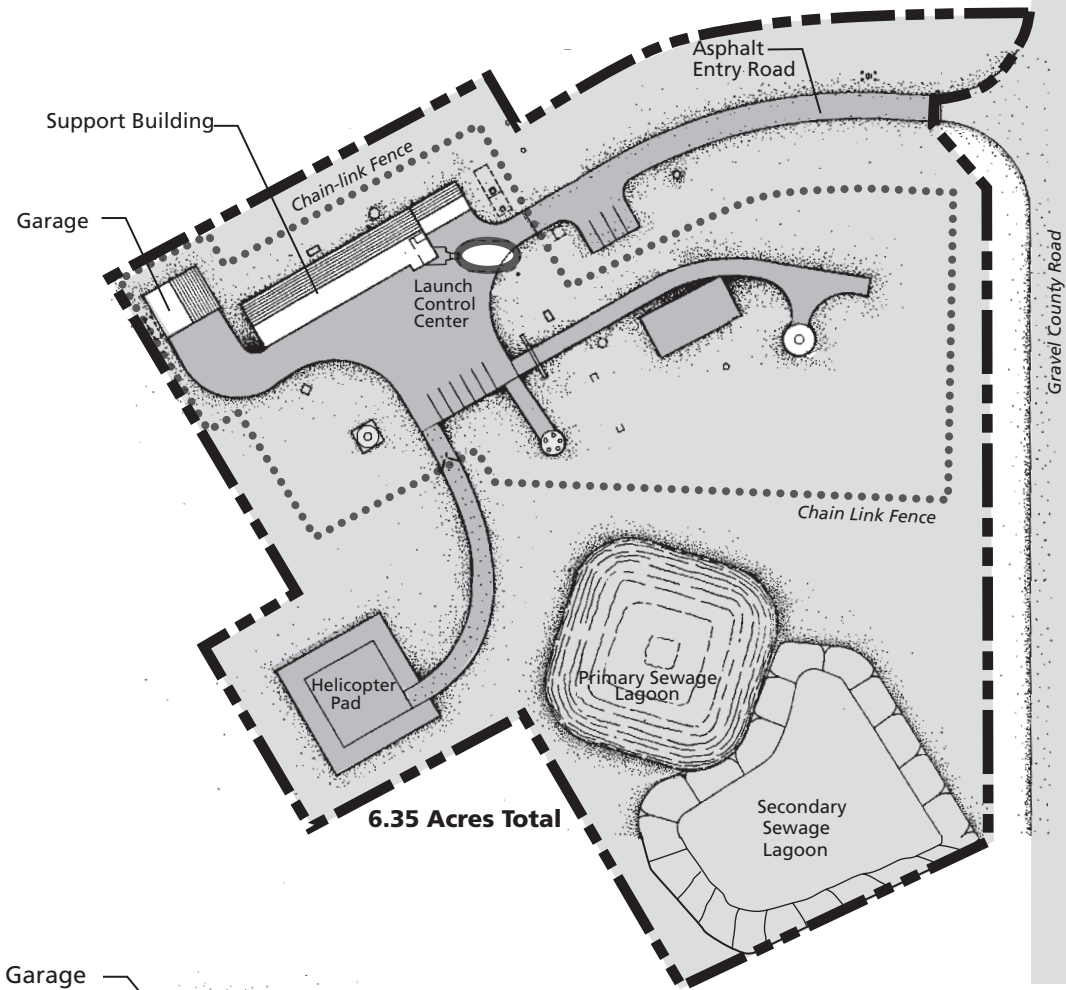
Cactus Flat

Current Project Office  
(Trailer in the parking lot of private business)

PAVED ROAD 240

To Badlands National Park

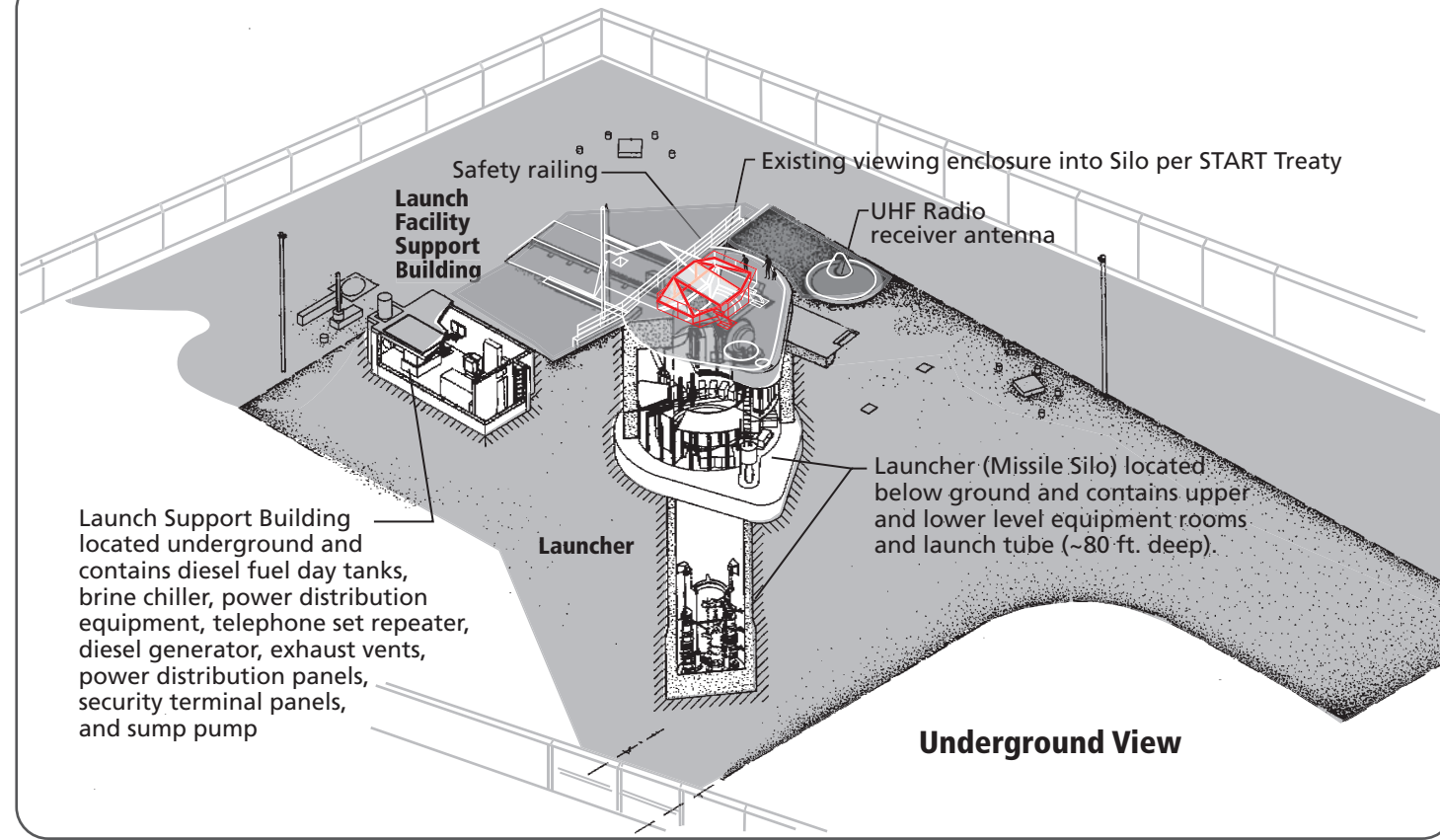




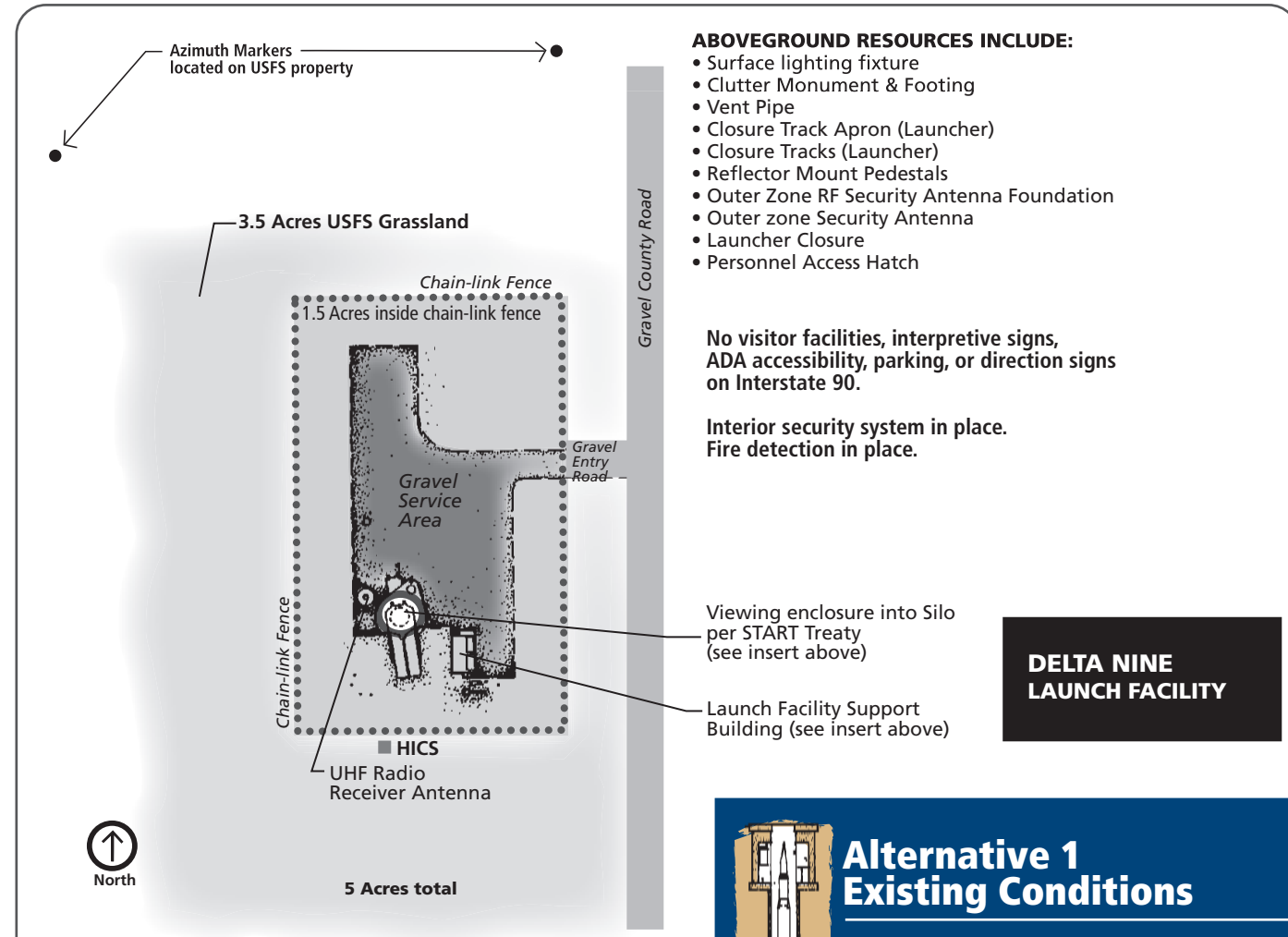
**DELTA ONE  
LAUNCH CONTROL FACILITY  
AND LAUNCH CONTROL CENTER**

No visitor facilities, interpretive signs, ADA accessibility, parking, or direction signs on Interstate 90.

Interior security system in place.  
Fire detection in place.



**Underground View**



**ABOVEGROUND RESOURCES INCLUDE:**

- Surface lighting fixture
- Clutter Monument & Footing
- Vent Pipe
- Closure Track Apron (Launcher)
- Closure Tracks (Launcher)
- Reflector Mount Pedestals
- Outer Zone RF Security Antenna Foundation
- Outer zone Security Antenna
- Launcher Closure
- Personnel Access Hatch

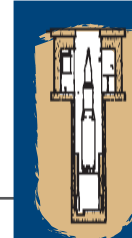
No visitor facilities, interpretive signs, ADA accessibility, parking, or direction signs on Interstate 90.

Interior security system in place.  
Fire detection in place.

Viewing enclosure into Silo per START Treaty (see insert above)

Launch Facility Support Building (see insert above)

**DELTA NINE  
LAUNCH FACILITY**



**Alternative 1  
Existing Conditions**

MINUTEMAN MISSILE NATIONAL HISTORIC SITE  
United States Department of the Interior  
National Park Service  
DSC • AUGUST 2007 • 660 • 20,002





In fiscal year 2005, with the hiring of two seasonal guides, NPS staff were able to lead two tours (12 people) simultaneously, doing this once in the morning and once in the afternoon. Drop-in visitors would continue to be encouraged to go to Delta Nine when the tour group was there, to go to the South Dakota Air and Space Museum, and/or to read the site brochure and go to the web site. Tours in the off-peak season (Labor Day to Memorial Day) would continue to be offered as staff was available.

Parking for passenger cars and short-term, administrative use would continue to be on the entrance roads at both Delta facilities. Parking for buses and recreational vehicles (RVs) would continue to be permitted on a case-by-case basis on the entrance roads.

The chain link security gates at both Delta facilities would remain locked except during tours. There would be no staff on-site except during tours. Visitors could see the dry sewage lagoons and helicopter pad (Delta One) and the azimuth and HICS markers (Delta Nine) outside the chain-link fences.

Some museum objects would continue to be in their original location; other museum objects would remain in storage. The facilities would present the appearance of a mothballed military facility.

Operational activities such as vacuuming and snow removal would occur on an as-needed basis.

### **ON-SITE VISITOR FACILITIES**

There would continue to be no visitor support facilities at Delta One or Delta Nine.

### **INTERPRETATION**

Basic interpretive publications would continue to be available at the project office, and there would be a small outdoor display at

the project office for after-hours visitors. There would continue to be no interpretive signs or media at the Delta facilities for the small percentage of drop-in visitors who were unaware that reservations were required for tours or who arrived after hours. However, such visitors could look through the chain link fence and access site-related features that are outside the fence (such as the sewage lagoon and helipad at Delta One and the HICS markers and azimuth markers at Delta Nine).

### **ETHNOGRAPHIC RESOURCES AND MUSEUM OBJECTS**

Under this alternative, ethnographic materials such as oral histories and remembrances of the missileers and workers associated directly with the Minuteman Missile system would continue to be accepted as opportunity and funding permit. However, no active acquisition efforts would be made.

Transfer/return of national historic site items and archives/records from Ellsworth would occur, much of which would be stored/curated at the new curatorial/storage facility in Badlands National Park. Some on-site museum objects would remain in their historic locations at the Delta facilities; some original collection items, especially those that are at high risk for deterioration, would be removed for their protection.

### **MANAGEMENT ACTIVITIES**

- Environmental monitoring, inspections, and assessments of historic resources would continue. Only essential management action would be taken to protect resources.
- There would be routine patrols by law enforcement staff. Existing minimal security systems would remain, and minor upgrades would be provided at Delta One.
- Minimum fire protection systems would remain.

- Basic utilities such as the original heating and air-conditioning systems would remain in use at the launch facility support building.
- A minimal heating system in the garage at Delta One, similar to the original, would be installed to meet environmental needs.
- Business hours would be Monday through Friday, 8 a.m. to 4:30 p.m. due to limited staffing.
- The Park Service would continue working with the relevant counties and township to maintain the county access roads from Interstate 90 at both Delta facilities for visitor use.

## STAFFING

To implement this alternative, staff would continue to have about eight full-time-equivalent (FTE) employees as follows (see appendix G):

- a superintendent
- an administrative support assistant
- a maintenance mechanic
- a seasonal custodian
- a chief visitor and resource protection/interpretation and visitor services ranger
- a seasonal resource and visitor protection ranger shared with Badlands National Park
- an interpretation and visitor services park ranger
- 2 seasonal park guides
- a cultural resource specialist/curator

## BOUNDARY ADJUSTMENTS

There would be no boundary adjustments under this alternative.

## PARTNERSHIPS

In compliance with the legislation, a formal agreement would be established with the Air and Space Museum at Ellsworth Air Force

Base in Rapid City to complement both NPS and Air Force programs. Visitors would continue to be referred to the museum on an individual basis. If visitors cannot go into the launch control center (underground) capsule because of accessibility issues or due to increased visitation, the Air and Space Museum offers a silo and an accessible control center (capsule). Those with past military experience, especially former Air Force personnel, would also continue to be referred to the museum. The national historic site would continue to carry the museum's pamphlet, and information concerning the museum is in the national historic site's brochure.

## VISITATION

In fiscal year 2005 the project office recorded more than 5,200 visitors, with almost 2,300 visitors going on a tour of the Delta facilities. With the addition of one more temporary park guide in 2005, site staff were able to double the number of tours offered during the 2005 summer season (from two per day in 2004 to four per day in 2005). Because of increased visitor interest in Minuteman Missile, and despite the doubling of tours offered during the 2005 summer season, about 1,100 people who wanted to make a reservation for a tour were not able to be accommodated because all of the available spaces were filled. The carrying capacity of Delta One limits each tour to six visitors; the current number of seasonal park guides limits the number of tours per day to four (two simultaneous tours in the morning and two in the afternoon). The current FTE status of Minuteman Missile limits its business hours from 8:00 a.m. to 4:30 p.m., Monday through Friday.

In fiscal year 2006 the project office had more than 11,800 visitors, with more than 4,300 visitors going on a tour of the Delta sites. Although only the same number of tours were offered during the summer season (compared to the summer season of 2005), more tours were provided during the spring and fall

shoulder seasons of 2006. In addition site staff implemented a “missile talk” tour of Delta Nine, and several open house tours of Delta One and Delta Nine. Despite developing and implementing these extra visitor services during the summer season of 2006, at least 1,700 people who wanted to make a reservation for a tour were not able to be accommodated. As the public becomes more aware of the national historic site, significant annual increases in visitation are expected.

**ESTIMATED COSTS**

Costs for alternative 1 are given for comparison to other alternatives only; they are not to be used for budgetary purposes or

implementation funding requests. Although the numbers appear to be absolutes, they represent a midpoint in a possible range of costs. The costs developed include annual operating costs, deferred maintenance, initial construction, and other one-time costs.

The implementation of any alternative (approved plan) depends on future funding and NPS priorities. An approved plan does not guarantee that funding and staffing will be forthcoming. The approved plan establishes a vision of the future that will guide day-to-day and year-to-year management of the national historic site, but full implementation could take many years.

**TABLE 6. COSTS, ALTERNATIVE 1**

Total Annual Operating Costs <sup>(1)</sup>		\$624,000
Staffing – FTE <sup>2</sup>	8	
One Time Costs		
Deferred Maintenance <sup>(3)</sup>	\$296,178	
Initial Construction <sup>(4)</sup>	\$684,593	
Interpretive Exhibits	\$54,577	
Total One-Time Costs		\$1,035,248

- (1) Annual operating costs are the total annual costs for maintenance and operations associated with each alternative, including: utilities, supplies, staff salaries and benefits, leasing, and materials.
- (2) Total full-time-equivalent (FTE) employees are the number of staff required to maintain the assets of the national historic site at a good level, provide acceptable visitor services, protect resources, and administer the national historic site. The FTE staff would not necessarily be NPS employees. National historic site managers would explore opportunities to work with partners, volunteers, and other federal agencies to effectively and efficiently manage the national historic site. FTE salaries and benefits are included in the annual operating costs.
- (3) Deferred maintenance costs are those needed to improve national historic site assets in good condition based on NPS standards. They do not represent all maintenance in the national historic site, just the facilities that are applied to the alternatives comparison. Demolition or adaptive reuse of an existing building reduces the deferred maintenance costs for the national historic site, but increase the initial construction costs.
- (4) Included here are one-time facility costs related to construction and non-facility costs related to natural and cultural resources management and visitor use projects. In the no-action alternative, one-time costs include only those costs already planned within existing programs and with an approved funding source.

## ALTERNATIVE 2: READY-ALERT STATUS

### CONCEPT

The concept of this alternative would be to **restore** the sites to their ready-alert/active duty) appearance — i.e., before July 1991 when the START treaty was signed. The sites would present the Delta facilities as they were in full operation. Visitors could only access the Delta facilities via an approximately two-hour shuttle bus tour with reservations required.

Management actions would recognize the unique historical character of the national historic site as the best-preserved example of the Minuteman II defense system. This alternative would be the most maintenance intensive of all the alternatives.

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

Standards for restoration actions are based on the following:

- A property will be used as it was historically or be given a new use which interprets the property and its restoration period.
- Materials and features from the restoration period will be retained and preserved. The removal of materials or alteration of features, spaces, and spatial relationships that characterize the period will not be undertaken.
- Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize,

consolidate and conserve materials and features from the restoration period will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

- Materials, features, spaces, and finishes that characterize other historical periods will be documented prior to their alteration or removal.
- Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the restoration period will be preserved.
- Deteriorated features from the restoration period will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials.
- Replacement of missing features from the restoration period will be substantiated by documentary and physical evidence. A false sense of history will not be created by adding conjectural features, features from other properties, or by combining features that never existed together historically.
- Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- Archeological resources affected by a project will be protected and preserved in place. If such resources must be disturbed, mitigative measures will be undertaken.
- Designs that were never executed historically will not be constructed.

(The above is taken from *The Secretary of Interior's Standards for the Treatment of Historic Properties*.)

## **PRIMARY VISITOR / ADMINISTRATIVE FACILITY AT EXIT 127**

An 8,000-square-foot visitor/ administrative facility (based on NPS Facility Calculator) would be constructed south of exit 127 on Interstate 90. This facility would provide a full range of visitor amenities including picnic areas; restrooms; parking for cars, buses, RVs; and shuttle drop-off and pick-up, as well as NPS headquarters and offices and maintenance, shuttle support, and storage areas. There would be directional signs on Interstate 90 directing visitors to this facility.

## **RESOURCE CONDITIONS INSIDE THE SECURITY FENCES**

### **Preservation/Learning Zone**

In this alternative the facilities would be restored to their ready-alert/active duty appearance before July 1991. Restoration would allow for repair of the facilities using in-kind materials. Most of the aboveground buildings, structures, and surfaces inside the chain-link security fences at both Delta One and Delta Nine would be in the preservation/ learning zone, as would the control room, elevator, and underground capsule, which would allow as many historic items as possible to remain in their original locations and the public to see the facilities much as they were during active duty status. Damage that occurred during deactivation and mothballing (1991–2003) would be repaired. Additional modifications to the buildings and structures for visitor safety and resource protection would be limited and reversible.

**Delta One.** Some original museum items removed from the facility and placed in storage at Ellsworth Air Force Base would be returned to their original locations. Original items no longer available would be replaced in kind with similar items from other Minute-man facilities. Items most susceptible to deterioration, such as magazines, drawings,

and written logs, would be replaced with replicas.

The garage would contain original or in-kind vehicles and equipment such as a Peacekeeper (security response vehicle), front-end loader, snow blower, and lawn mower.

Restoration of the grounds and exterior structures would include maintaining the original basketball hoop and flagpole, replacing in-kind the basketball pole padding, repairing the asphalt at the basketball area, and restoring the original code-burning drum and gas pump to their historic locations. In specific areas, overgrown vegetation would be eliminated (such as at the volleyball court and horseshoe pits), and the grounds would be maintained to military standards.

**Delta Nine.** The structures and the gravel service area inside the chain-link security fence would be restored to their ready-alert military appearance. The viewing enclosure over the silo installed in 2002 would remain (to meet START treaty obligations). In specific areas overgrown vegetation would be eliminated, and the grounds would be maintained to military standards.

### **Limited Access Zone**

Underground facilities at both Delta facilities that are difficult or dangerous to access would be in the limited access zone, (See the management zones table 5 for a list of these facilities.)

## **RESOURCE CONDITIONS OUTSIDE THE SECURITY FENCES**

### **Perimeter Zone**

Most of the grounds outside the security fence would be in the perimeter zone to protect the resources, maintain the historic landscape, and allow unsupervised visitor access into the area. Operational maintenance, such as minor repairs, snow removal, and groundskeeping,

would occur routinely and reflect a military standard.

**Delta One.** At Delta One, in the perimeter zone, the helipad would be repaired and repainted. The primary sewage lagoon, fenced by barbed wire, would not be filled and returned to service. The secondary sewage lagoon would also remain dry. A 6-foot to 10-foot width of grass would be mowed around the outside of the chain-link security fence and would be maintained to military standards. The historic use of cattle grazing would continue.

**Delta Nine.** A 6-foot to 10-foot width of grass would also be mowed around the outside of the chain-link security fence and maintained to military standards. The remaining grounds would continue to be maintained as grassland with cattle grazing. The posts indicating the location of the HICS cable would be preserved and protected.

### Administration/Operations Zone

The entrance roads at both Delta facilities would be in the administration/operations zone to allow use for staff parking, administrative functions, and as a drop-off and turn-around for a shuttle.

### VISITOR EXPERIENCE ON-SITE

Note that shuttles would not be used until visitation is at a level where the protection of resources was a concern and the shuttles were cost-effective.

Visitors would find the facilities as if military personnel were still on-site. Visitors would require reservations for about a two-hour shuttle tour of Delta One and Delta Nine. A shuttle would drop off 18 passengers and three NPS rangers at Delta One — one group of six plus a ranger would be on the grounds, another such group would be in the launch

control facility, and the third such group would go into the underground capsule. The remaining shuttle passengers would continue on to Delta Nine. After visitors saw the Delta Nine facility, the shuttle would return to Delta One, pick up those who had been dropped off initially, and then return to the visitor facility. All visitors would park at the visitor facility at exit 127 to begin their tour; shuttles would park on the entrance roads. Parking for buses and RVs would not be available at either Delta facility. A fee would be charged for the shuttle tours.

Commercial tours and school groups would be unable to access the Delta facilities. Their visitor experience would be at the visitor/administrative facility.

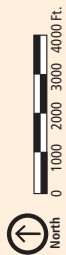
The chain-link security gates at both Delta facilities would remain locked except during shuttle tours.

### Delta One

Visitors would see original or in-kind items. Items such as magazines, desk supplies, furniture, log books, typewriters, computers, keys, and telephones would be in the same location as they were before July 1991. In the underground launch control center (capsule) visitors would see computers and life support systems. To accommodate visitors with disabilities, access to the facility would be provided using temporary and removable structures such as ramps.

The garage would house period vehicles and equipment such as a Peacekeeper (security response vehicle), snow blower, front-end loader, and lawn mower.

On the grounds, visitors would see items such as the original code burner and in-kind or restored items such as the flag pole, gas pump and basketball hoop and pole.



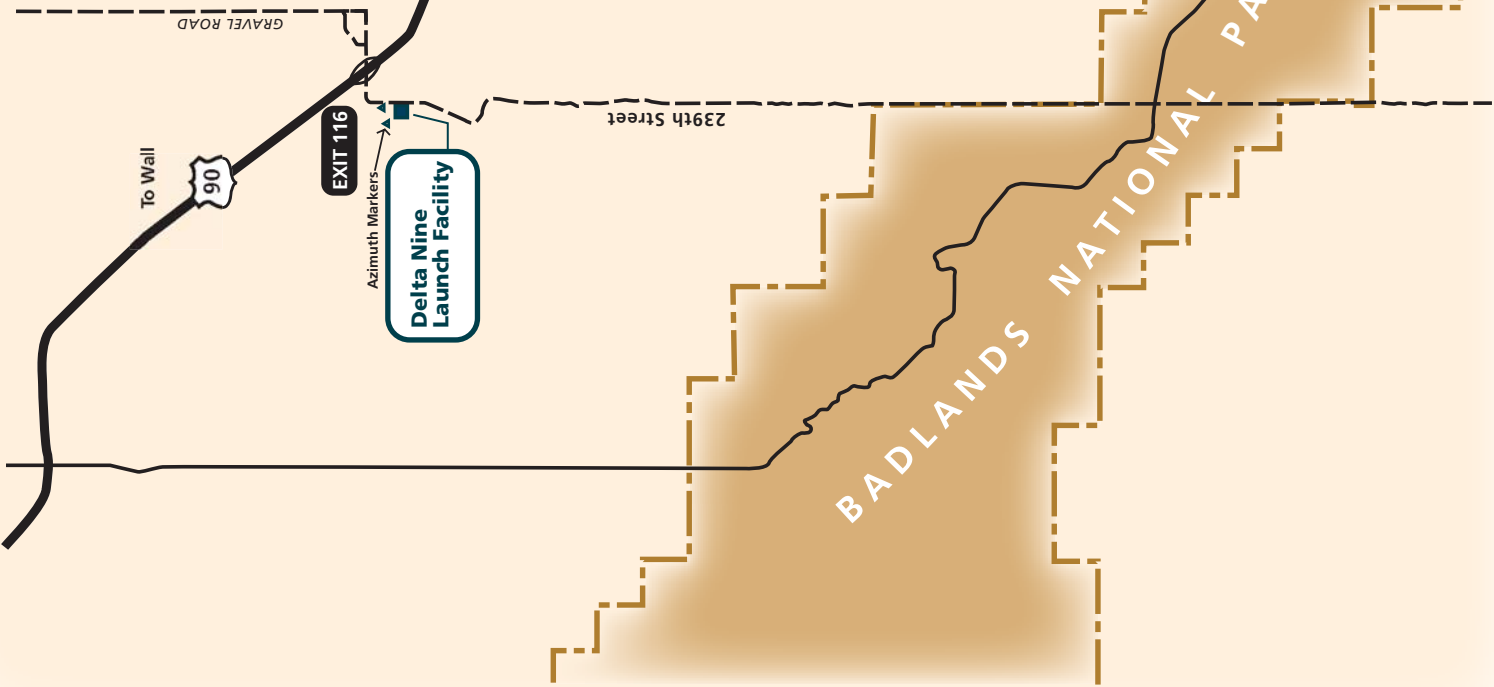
# Alternative 2 Visitor and Administration Facility Location Recommended Boundary Adjustment

MINUTEMAN MISSILE NATIONAL HISTORIC SITE  
 United States Department of the Interior  
 National Park Service  
 DSC • AUGUST 2007 • 660 • 20,003

**EXISTING PARK BOUNDARY**

**PROPOSED HISTORIC LANDSCAPE PROTECTION AREA**  
 Under this alternative (Up to 420 acres)

**US FOREST SERVICE LAND**  
 Proposed to be transferred to National Park Service administration



JACKSON COUNTY  
 PENNINGTON COUNTY

**Delta Nine Launch Facility**

**Delta One Launch Control Facility**

Shuttle tour only, from Visitor/Administrative Facility to Delta One and Delta Nine

**Visitor / Administrative Facility (Up to 25 additional acres)**  
 This could be located on either side of road

To Badlands National Park

To Wall

90

240

EXIT 131

EXIT 127

EXIT 116

To Wall

GRAVEL ROAD

239th Street

Azimuth Markers

BADLANDS NATIONAL PARK

Cactus Flat

DIRT ROAD

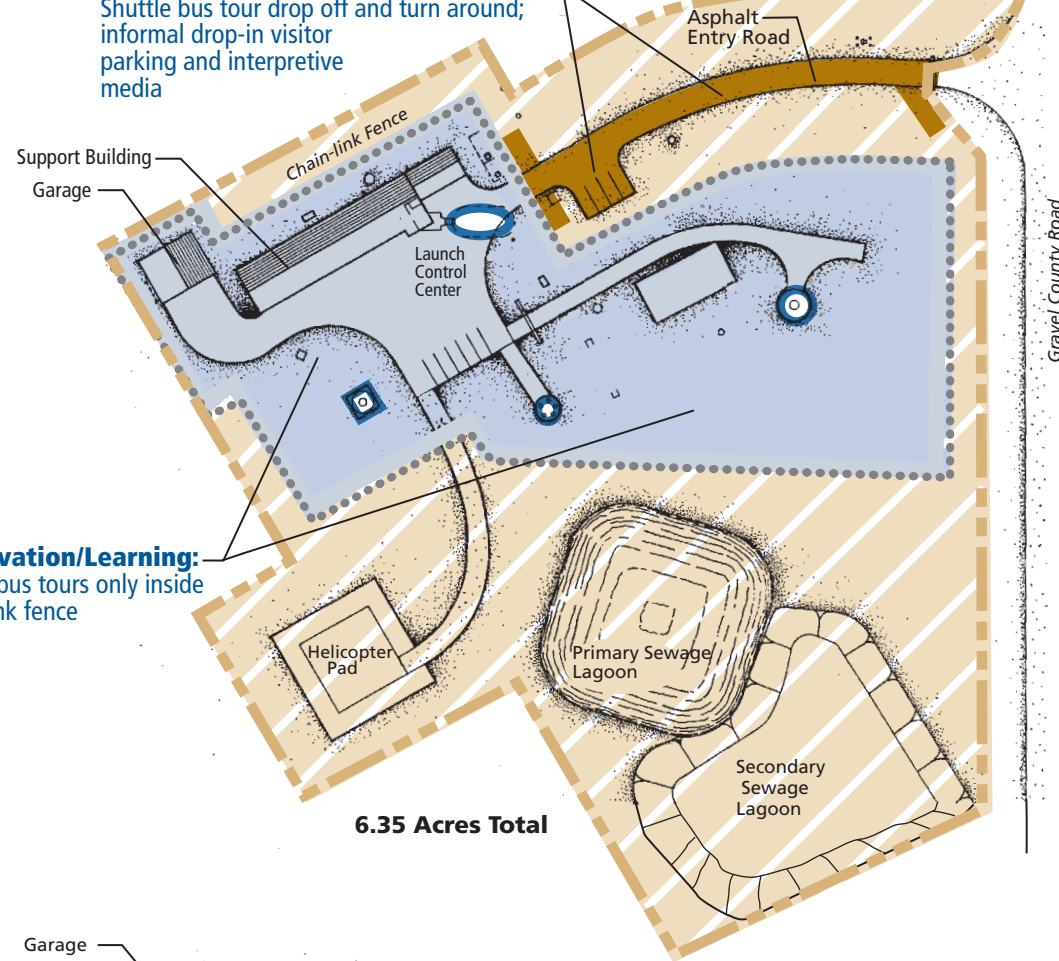
PAVED ROAD



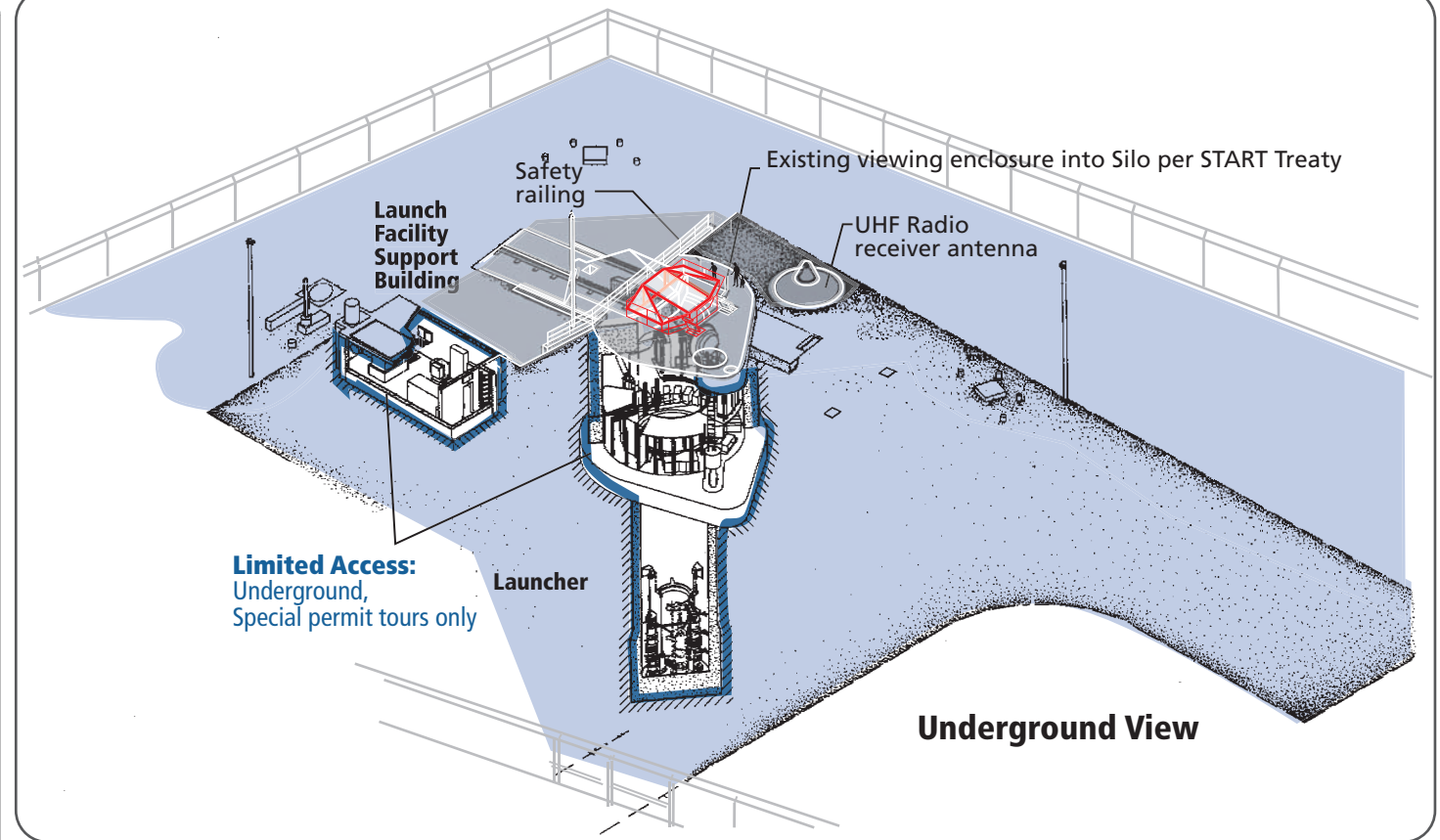


**Administration/Operations:**

Shuttle bus tour drop off and turn around; informal drop-in visitor parking and interpretive media

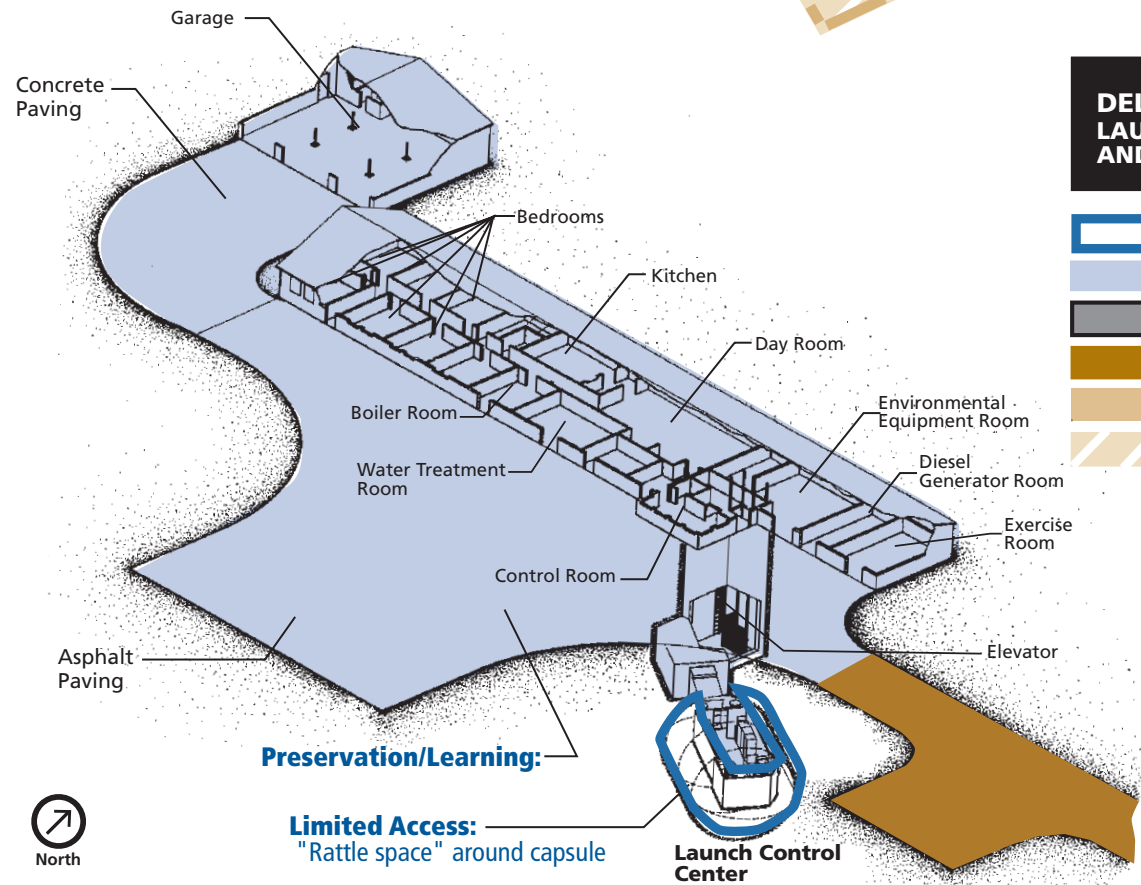


6.35 Acres Total



**Underground View**

**Limited Access:**  
Underground,  
Special permit tours only



**Preservation/Learning:**

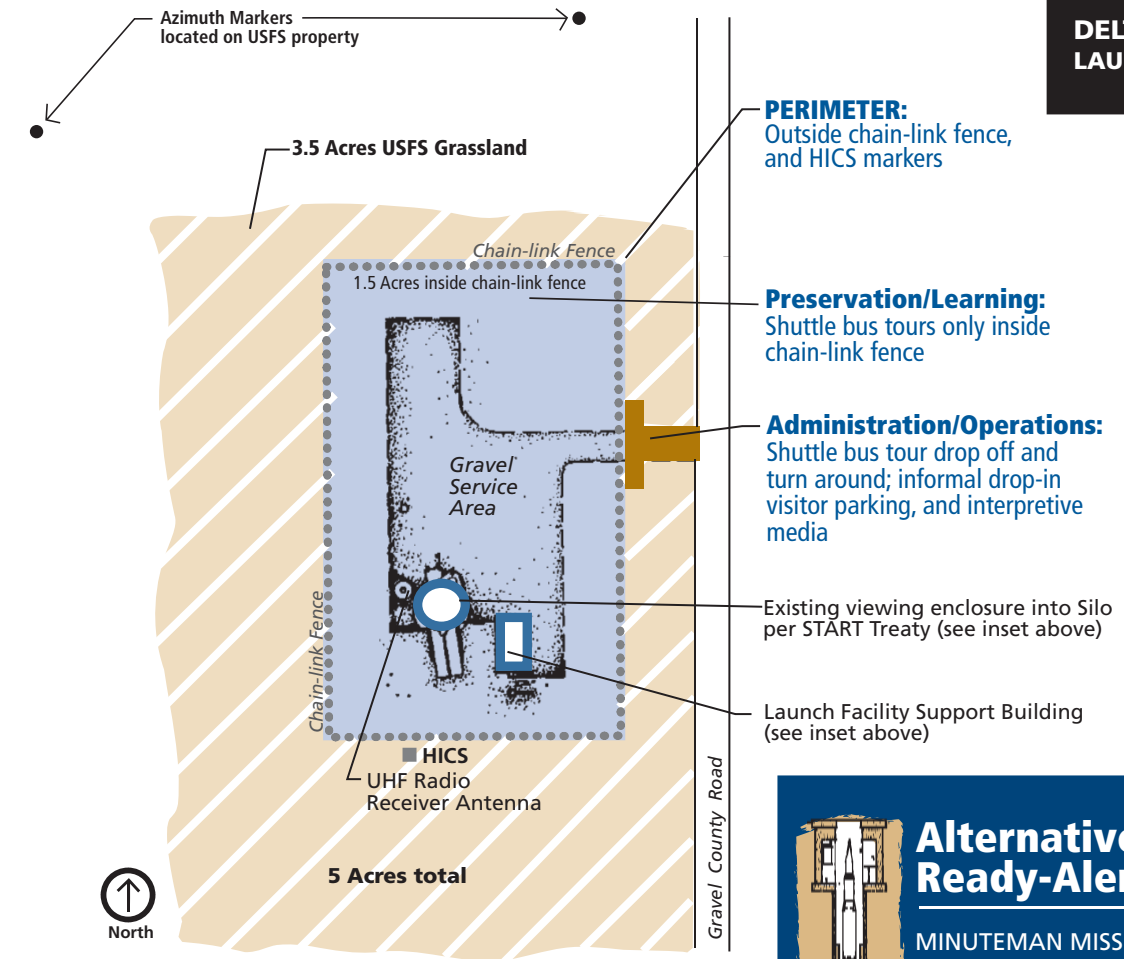
**Limited Access:**  
"Rattle space" around capsule

**Launch Control Center**

**DELTA ONE LAUNCH CONTROL FACILITY AND LAUNCH CONTROL CENTER**

- LIMITED ACCESS ZONE**
- PRESERVATION / LEARNING ZONE**
- EDUCATION / INTERPRETATION ZONE**
- ADMINISTRATION / OPERATIONS ZONE**
- SELF DIRECTING ZONE**
- PERIMETER ZONE**

**DELTA NINE LAUNCH FACILITY**



**PERIMETER:**  
Outside chain-link fence, and HICS markers

**Preservation/Learning:**  
Shuttle bus tours only inside chain-link fence

**Administration/Operations:**  
Shuttle bus tour drop off and turn around; informal drop-in visitor parking, and interpretive media

Existing viewing enclosure into Silo per START Treaty (see inset above)

Launch Facility Support Building (see inset above)

5 Acres total



**Alternative 2 Ready-Alert Status**

MINUTEMAN MISSILE NATIONAL HISTORIC SITE  
United States Department of the Interior  
National Park Service  
DSC • AUGUST 2007 • 660 • 20,004



## **Delta Nine**

Visitors would see original structures. Visitors could continue to see a missile through the existing viewing enclosure.

The gravel service area (hardening through soils amendments for paths) would provide permanent access for visitors with disabilities during tours.

## **ON-SITE VISITOR FACILITIES**

There would be no on-site visitor facilities or restrooms at either Delta facility.

## **INTERPRETATION**

At the primary visitor facility, interpretation and education programs would evoke an emotional understanding of the role of the military personnel who were stationed at the Delta facilities and the potential of the technology to effect total destruction or serve as a deterrent during the Cold War. Interpretation and education programs would provide the in-depth story of the daily life of the personnel stationed at the Delta facilities and would be mostly audiovisual media, oral histories, some original items, small-scale models, and replicas. Displays and exhibits could include cutaways of the underground launch control center (capsule) and personal items donated by servicemen stationed at the Delta facilities. There would be various exhibits, films, and “virtual” tours provided at the visitor facility, and on the national historic site web site. On the shuttle tour visitors would receive orientation and scene setting, including information on safety and resource protection.

## **Both Delta Facilities**

There would be no staff on-site except during tours. There would be no interpretive or safety signs inside the security fence because

visitors would be with an interpretive ranger at all times.

A minimal number of interpretive and directional signs would be installed on the historic entrance roads (outside the security fences) to provide information to drop-in visitors who arrived after business hours or had no reservations for a tour. Signs would give directions to the visitor / administrative facility.

## **ETHNOGRAPHIC RESOURCES AND MUSEUM OBJECTS**

Under this alternative, ethnographic materials such as oral histories and remembrances of the missileers and workers directly associated with maintaining the alert status of Delta One and Nine would be accepted and actively collected.

Most museum objects would be returned to the national historic site. Some of these items would be put in their original locations on site, and some would be displayed in or retained for curation in the visitor facility. Other items would be placed in the NPS curatorial facility at Badlands National Park. Some items that are at high risk for deterioration would receive curatorial treatment.

## **MANAGEMENT ACTIVITIES**

- Regular, comprehensive, and numerous evaluations would be conducted of the heating and air-conditioning system; potential ultraviolet damage; and resource degradation caused by dust, humidity, heat, water seepage, rust, mold, pests, etc. Based on these evaluations, necessary equipment would be installed.
- Security monitoring would remain as it is, with possible minor supplemental additions. Visual security could be supplemented at Delta One by views from the visitor facility at exit 127.
- Original fire protection systems would be brought back on line at Delta One;

supplemental upgrades, including a pump and underground water storage tank, would reinforce the existing dry pipe system. Upgrades at Delta Nine would most likely not be necessary.

- Basic utilities such as heating and air-conditioning would remain at current capacities, and original equipment would continue in use; however for below-ground structures, including the capsule, coolers would be repaired/replaced in kind to supply adequate environmental controls. The underground cathodic protection device, which prevents moisture on the surface of some facility elements, would be inspected to see if repairs were needed.
- A minimal heating system in the garage at Delta One, similar to the original, would be installed to meet environmental needs.
- Structures that have been added to the cultural landscape after July 1991, such as the propane tank, would be removed or buried.
- Environmental monitors would be installed in the Delta Nine launch support building, and environmental control systems would need to be brought back on line. Environmental systems in place in the silo would continue to be monitored.
- Business hours would be Monday through Friday, 8 a.m. to 5 p.m.
- The Park Service would continue working with the relevant counties and township to maintain the county access roads from Interstate 90 at both Delta facilities for visitor use.
- The visitor / administrative facility south of exit 127 would require installation and extension of electric lines and phone service located nearby, water lines from exit 131 (4 miles), underground water storage tanks for domestic and fire suppression water, and a sewage lagoon.

## STAFFING

To implement this alternative, staff would need to include about 19 full-time-equivalent staff members, as follow (see appendix G):

- a superintendent
- an administrative support assistant
- a seasonal clerk
- a supervisory facility operations specialist
- 2 maintenance mechanics
- 2 custodians
- a seasonal custodian
- a chief visitor and resource protection/interpretation and visitor services ranger
- a visitor and resource protection ranger
- a seasonal resource and visitor protection ranger shared with Badlands National Park
- an interpretation and visitor services ranger
- 2 park guides
- 6 seasonal park guides
- 2 seasonal visitor use assistants
- a cultural resource specialist/curator
- a museum technician shared with Badlands National Park

## BOUNDARY ADJUSTMENTS

As explained in detail beginning on page 38, a boundary adjustment at the national historic site would be needed to transfer up to 25 additional acres for the visitor/ administrative facility and shuttle support at exit 127 from the U.S. Forest Service to the National Park Service.

The historical facilities at Delta One are strongly linked to their cultural setting. Alternative 2 proposes up to a 420-acre boundary adjustment at Delta One to protect the historic landscape that is critical to fulfilling the national historic site's purposes. The boundary adjustment would allow less-than-fee-interests (such as scenic easements) to be developed and private ownership to continue. Any such action would be contingent upon

available funding. (See Alternative 2 — Proposed Historic Landscape Protection Area map.)

Congressional legislation would be needed for these boundary adjustments.

A technical revision to the official map accompanying the legislation would be needed to realign 3.65 acres at Delta One with existing public ownership.

### **PARTNERSHIPS**

In compliance with the legislation, a formal agreement would be established with the Air and Space Museum at Ellsworth Air Force Base in Rapid City to complement both NPS and Air Force programs. Visitors would continue to be referred to the museum on an individual basis. If visitors cannot go into the launch control center (underground) capsule because of accessibility issues or due to increased visitation, the Air and Space Museum offers a silo and an accessible control center (capsule). Those with past military experience, especially former Air Force personnel, would also continue to be referred to the museum. The national historic site would continue to carry the museum's pamphlet, and information concerning the museum is in the national historic site's brochure. Wayside exhibits, bulletin boards, and site bulletins would also contain information about the museum. Air and Space Museum assets, such as the *Missile Procedures Manual* and the missile transporter-erector vehicle, would be interpreted by exhibits at the national historic site. These exhibits would also tell visitors that they could see these resources first-hand at the museum. Museum

visitors would in turn learn about national historic site resources through their interpretive programs and media.

### **VISITATION PROJECTIONS**

The analysis in the "Alternative Transportation System Study" projected that a visitor facility at exit 127 would have 221,000 visitors in five years, 223,500 visitors in 10 years, and 228,000 visitors in 20 years.

During the high visitation months it is expected that visitation to the visitor facility would be considerably higher than the shuttle tour capacity. Tour capacity for Delta One is estimated at 108-150 visitors per day. All other visitors (those unable to get on a tour) would spend their time in the visitor facility.

### **ESTIMATED COSTS**

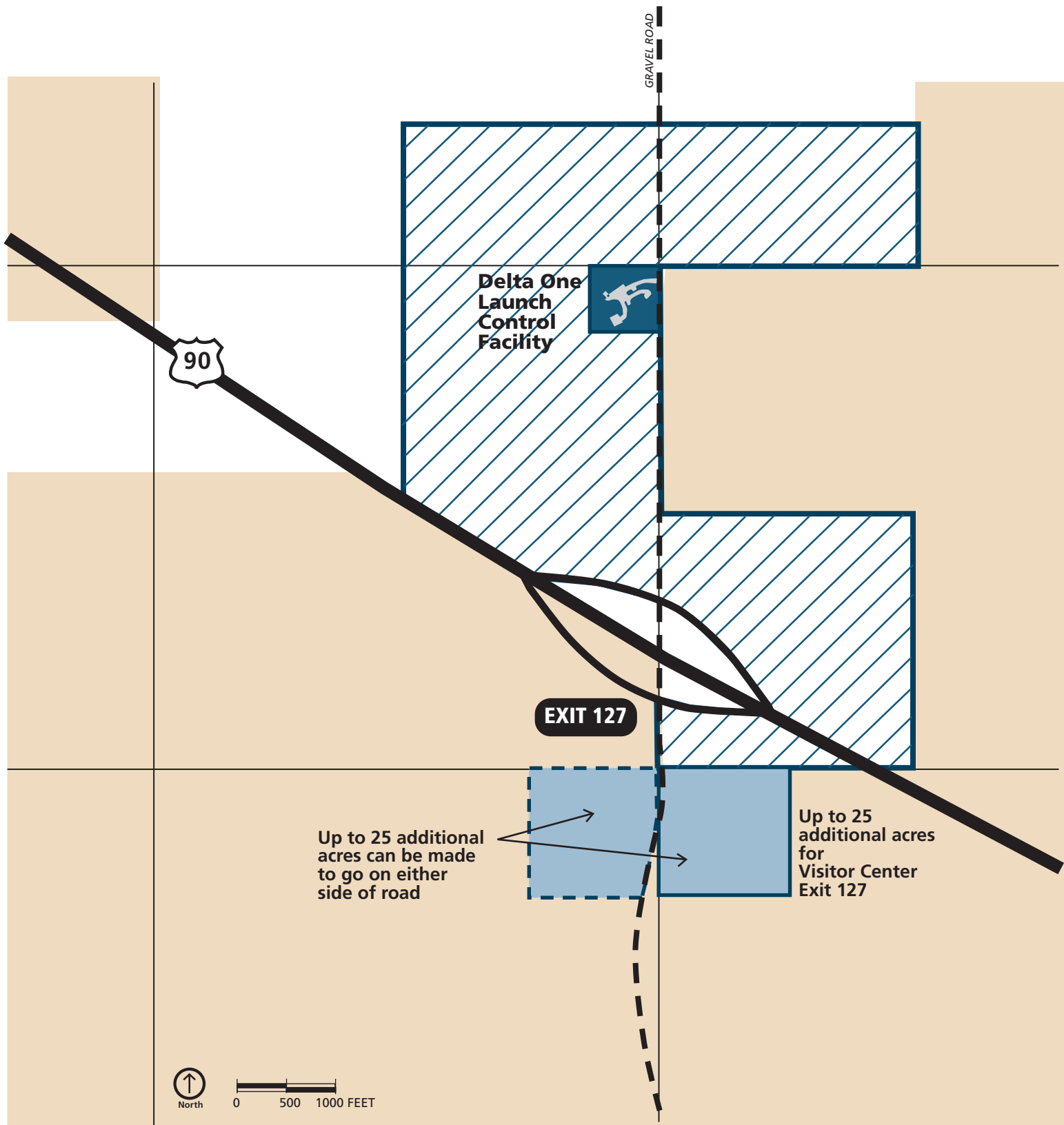
Costs for alternative 2 are given for comparison to other alternatives only; they are not to be used for budgetary purposes or implementation funding requests. Although the costs appear to be absolutes, they represent estimated costs. The costs developed include annual operating costs, initial construction, and other one-time costs.

The implementation of any alternative (approved plan) depends on future funding and NPS priorities. An approved plan does not guarantee that funding and staffing will be forthcoming. The approved plan establishes a vision of the future that will guide day-to-day and year-to-year management of the national historic site, but full implementation could take many years.

**TABLE 7. COSTS, ALTERNATIVE 2**

Total Annual Operating Costs <sup>(1)</sup>		\$1,118,020
Staffing – FTE <sup>(2)</sup>	19	
One Time Costs		
Initial Construction <sup>(3)</sup>	\$5,545,572	
Interpretive Exhibits	\$2,215,800	
Interstate 90 interchanges (Federal Lands Highway Program funds)	\$1,250,000	
Total One-time Costs		\$9,011,372

- (1) Annual operating costs are the total annual costs for maintenance and operations associated with each alternative, including: utilities, supplies, staff salaries and benefits, leasing, and materials.
- (2) Total full-time-equivalent (FTE) employees are the number of staff required to maintain the assets of the national historic site at a good level, provide acceptable visitor services, protect resources, and administer the national historic site. The FTE staff would not necessarily be NPS employees. National historic site managers would explore opportunities to work with partners, volunteers, and other federal agencies to effectively and efficiently manage the national historic site. FTE salaries and benefits are included in the annual operating costs.
- (3) Included here are one-time facility costs related to construction and non-facility costs related to natural and cultural resources management and visitor use projects. In the no-action alternative, one-time costs include only those costs already planned within existing programs and with an approved funding source.



- EXISTING NATIONAL HISTORIC BOUNDARY
- USFS LANDS PROPOSED FOR INCLUSION WITHIN HISTORIC SITE BOUNDARY
- NATIONAL GRASSLAND
- PROPOSED HISTORIC LANDSCAPE PROTECTION AREA (Up to 420 ACRES)
- PRIVATE LAND

**Alternative 2**  
**Proposed Historic Landscape Protection Area**

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## ALTERNATIVE 3: A STRATEGIC COMMITMENT

### CONCEPT

The concept of this alternative would be to **rehabilitate** the sites to their stand-down appearance when the facilities were deactivated — (i.e., from the ratification of the START Treaty in October 1992 to the establishment of the national historic site by Public Law 106-115 in 1999). The sites would present the national historic site as a symbol of the United States' preparedness for nuclear attack. The concept under this alternative would be to provide a more museum-like experience of the Delta facilities. Visitors would access the sites via their personal cars; capsule tours would still be by reservation.

Management actions would recognize the opportunity to provide public access to a formerly restricted and secret place.

Rehabilitation — the act of process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.

Standards for rehabilitation are based on the following:

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

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

(The above is taken from *The Secretary of Interior's Standards for the Treatment of Historic Properties*.)

### **PRIMARY VISITOR / ADMINISTRATIVE FACILITY AT EXIT 131**

A 10,000-square-foot visitor/ administrative facility (based on NPS Facility Calculator) would be constructed north of exit 131 on Interstate 90. This facility would provide a full range of visitor amenities including picnic areas; restrooms; and parking for cars, buses, and RVs, as well as NPS headquarters and offices and curatorial, maintenance, and storage areas. There would be directional signs on Interstate 90 directing visitors to this facility and to the Delta facilities.

### **RESOURCE CONDITION INSIDE THE SECURITY FENCES**

#### **Self-Directed Zone**

In this alternative, most of the aboveground buildings, structures, and surfaces inside the chain-link security fences at both Delta One and Delta Nine would be in the self-directed zone to allow many visitors to experience the sites as a former military installation. Access to the capsule would still be limited to six visitors with reservations plus an NPS ranger.

This alternative would require permanent changes to the historic fabric, and thus rehabilitation (instead of restoration as in alternative 2) would be the method used to protect and preserve in this alternative. Damage that occurred during deactivation and mothballing (1991 to present) would be repaired.

**Delta One.** The day room would be rehabilitated to allow for the adaptive use of this room as a waiting area for a tour of the underground launch control center (capsule). Appropriate resource protection techniques would be used throughout the facility, such as furnishing covers, carpet mats, wall coverings, and reproductions. For protection of the resources, the interior and exterior doorways into rooms would be protected by some type of barrier that would permit viewing into but ensure no entrance into the rooms.

Fragile or irreplaceable original items, such as the code burner, flagpole, and gas pump, would be displayed in the visitor facility and replaced on-site with reproductions, or would be protected by barriers around the items.

The garage would contain original or in-kind vehicles and equipment such as a Peacekeeper (security response vehicle), front-end loader, snow blower, and lawn mower. Protective barriers would be added to allow visitors to see but not touch the vehicles and to protect the vehicles from the weather.

**Delta Nine.** A second viewing enclosure would be placed over the support building to allow visitors to see the mechanical equipment below ground.

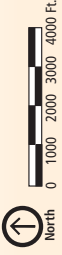
**Both Delta Facilities.** Interpretive and safety signs would be present. Hardened paths would be permitted to provide access for visitors with disabilities. Routine grounds maintenance, elimination of overgrown vegetation (such as at the volleyball court and horseshoe pits), snow removal, and repair activities would meet NPS standards.

#### **Preservation/Learning Zone**

As in alternative 2, the control room, elevator and underground control center (capsule) would remain in the preservation/learning zone. Original items would remain in place, and access would be provided only on a tour. No changes to the original fabric would be made in this zone.

#### **Limited Access Zone**

Underground facilities at both Delta facilities that are difficult or dangerous to access would be in the limited access zone. See the management zones table 5 for a list of these facilities.



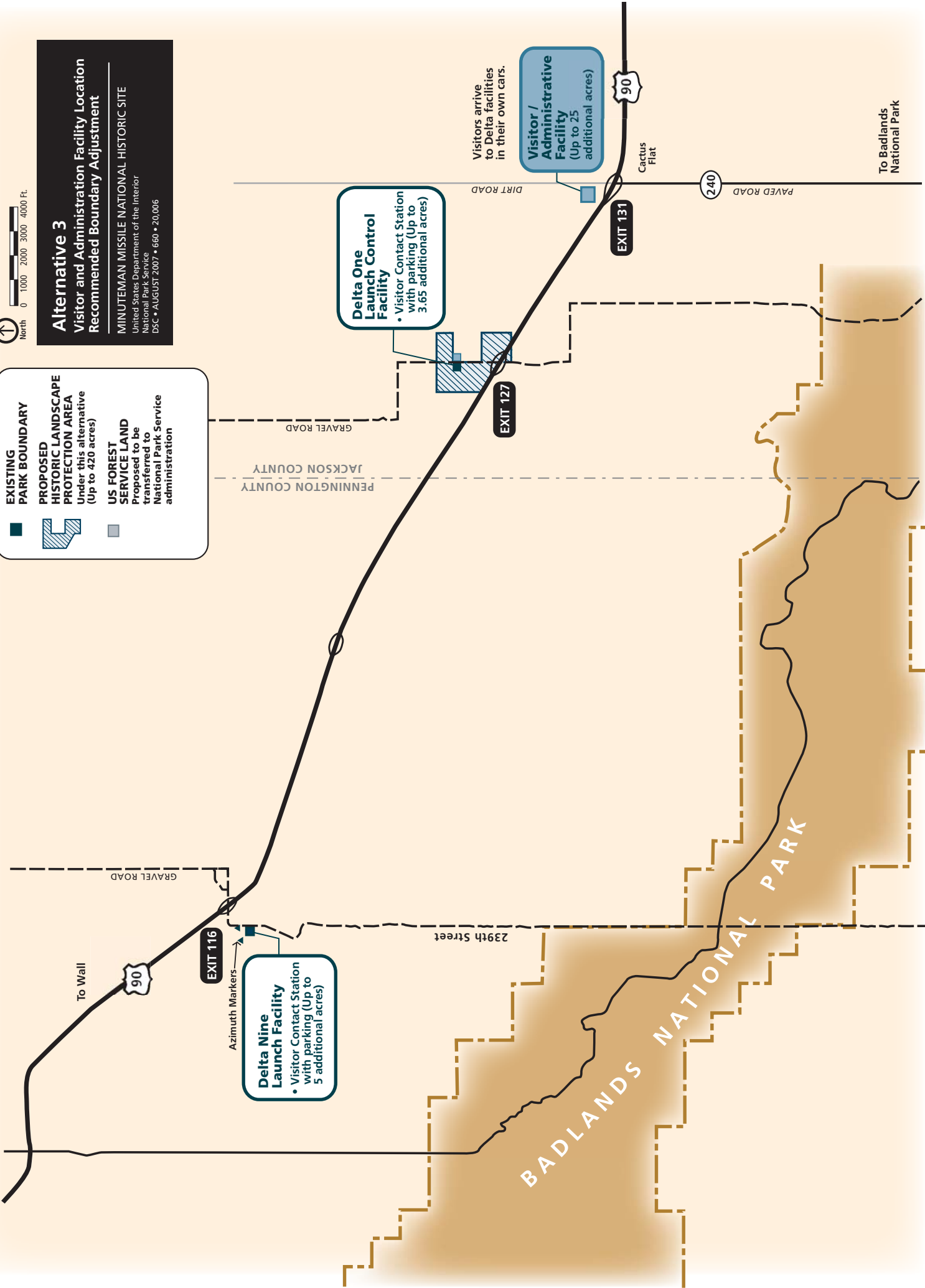
### Alternative 3 Visitor and Administration Facility Location Recommended Boundary Adjustment

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**EXISTING PARK BOUNDARY**

**PROPOSED HISTORIC LANDSCAPE PROTECTION AREA**  
Under this alternative (Up to 420 acres)

**US FOREST SERVICE LAND**  
Proposed to be transferred to National Park Service administration



**Delta Nine Launch Facility**  
• Visitor Contact Station with parking (Up to 5 additional acres)

**Delta One Launch Control Facility**  
• Visitor Contact Station with parking (Up to 3.65 additional acres)

**Visitor / Administrative Facility**  
(Up to 25 additional acres)

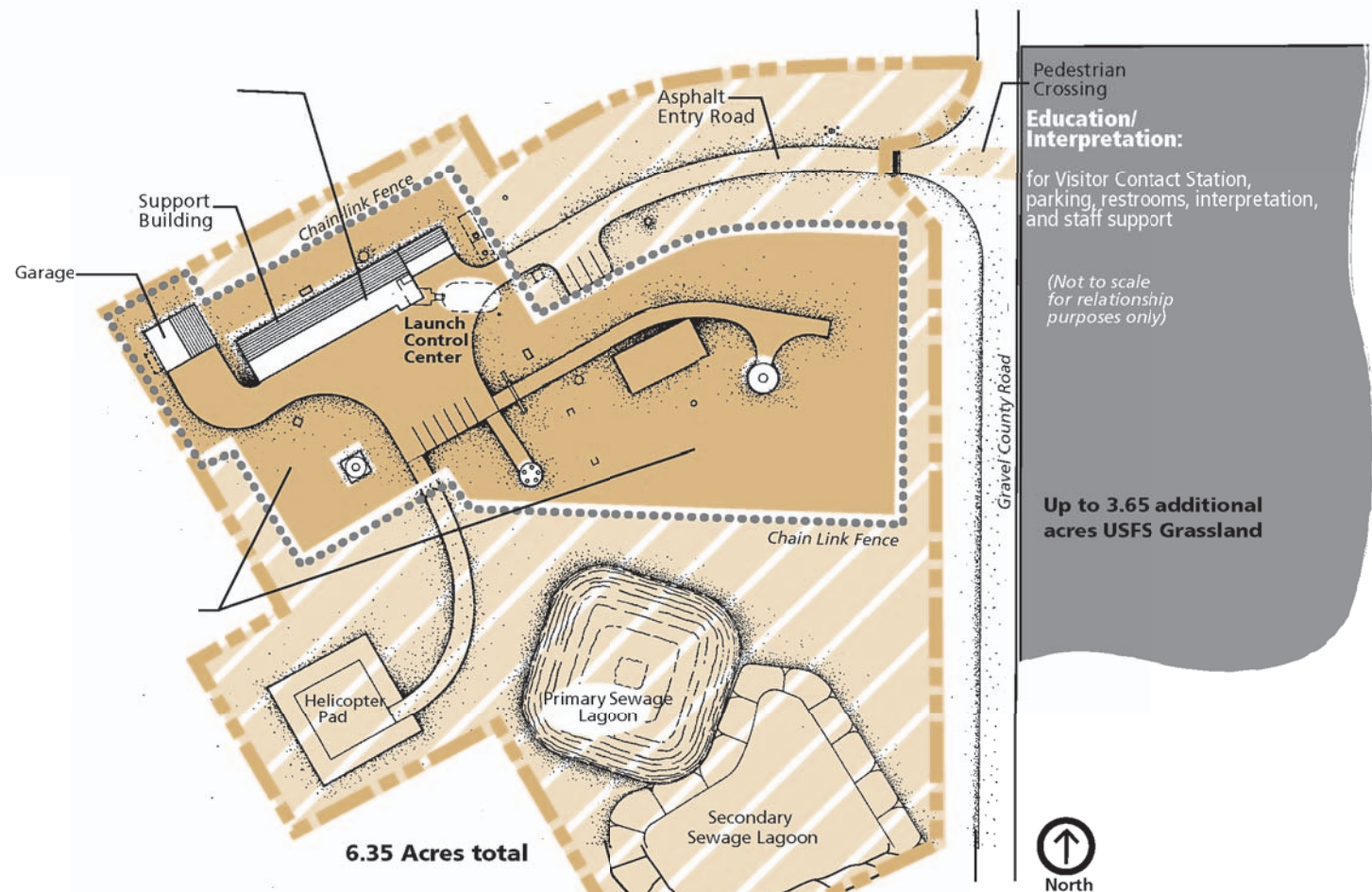
Visitors arrive to Delta facilities in their own cars.

To Badlands National Park

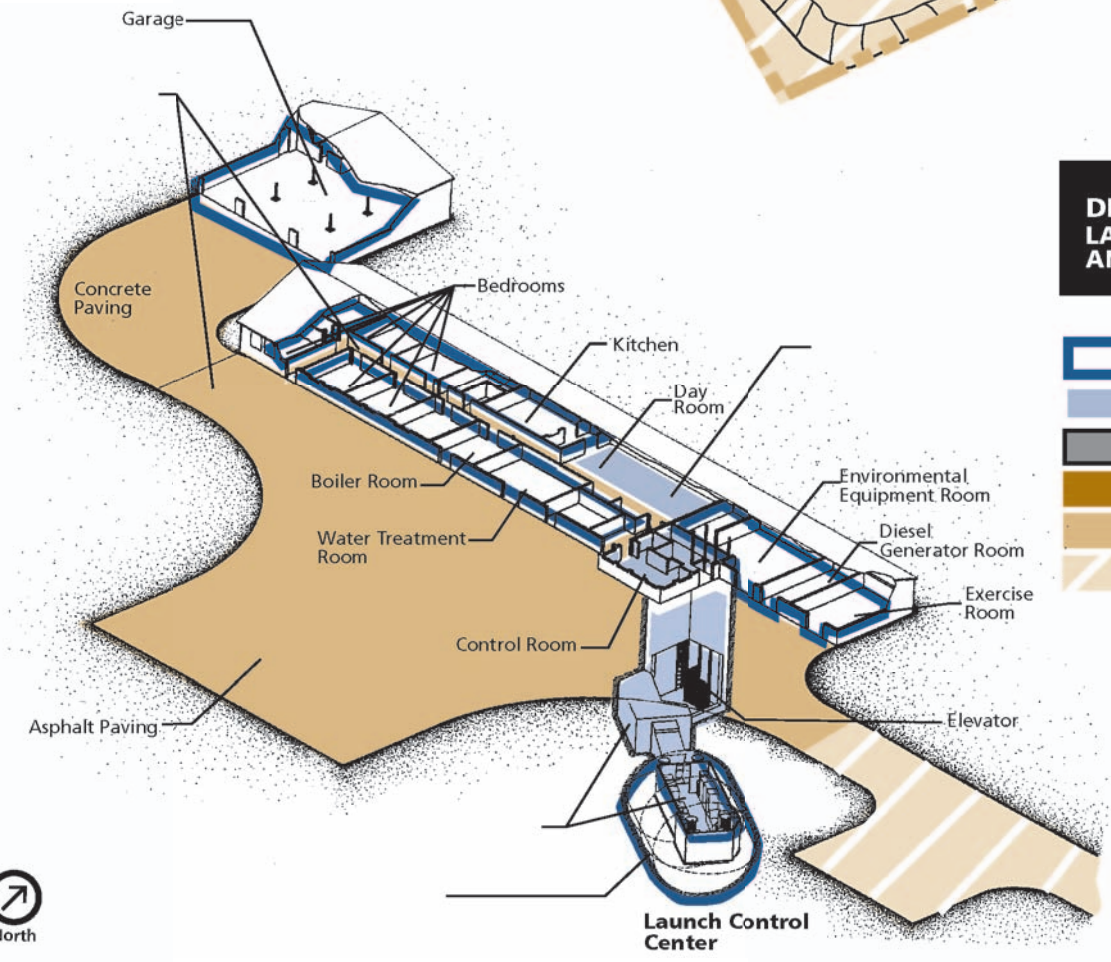
BADLANDS NATIONAL PARK

JACKSON COUNTY  
PENNINGTON COUNTY



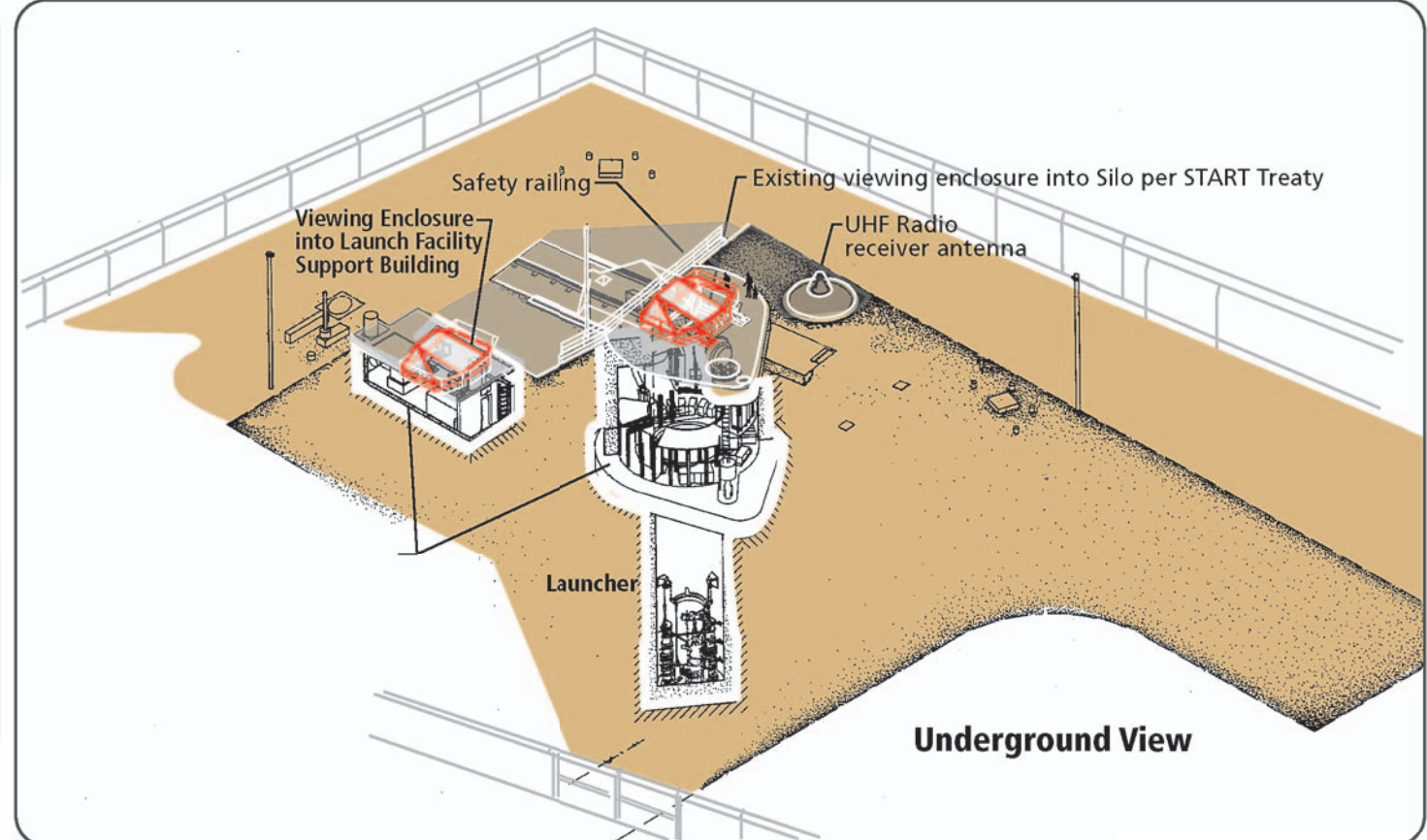


6.35 Acres total

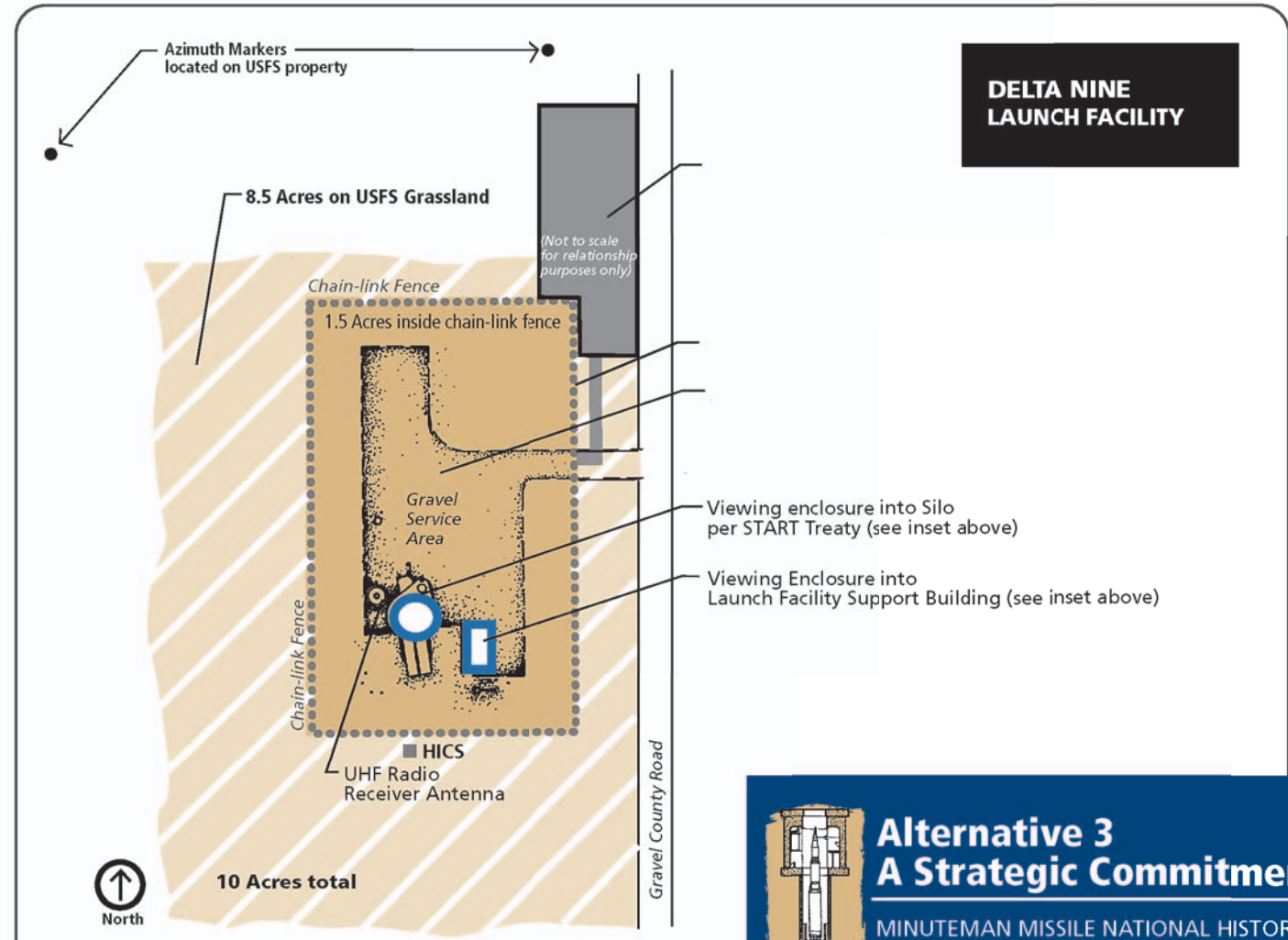


**DELTA ONE LAUNCH CONTROL FACILITY AND LAUNCH CONTROL CENTER**

- LIMITED ACCESS ZONE
- PRESERVATION / LEARNING ZONE
- EDUCATION / INTERPRETATION ZONE
- ADMINISTRATION / OPERATIONS ZONE
- SELF DIRECTING ZONE
- PERIMETER ZONE



**Underground View**



**DELTA NINE LAUNCH FACILITY**

10 Acres total



**Alternative 3  
A Strategic Commitment**

MINUTEMAN MISSILE NATIONAL HISTORIC SITE  
 United States Department of the Interior  
 National Park Service  
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## **RESOURCE CONDITIONS OUTSIDE THE SECURITY FENCES**

### **Perimeter Zone**

Most of the grounds outside the security fence would be in the perimeter zone, including the historic gravel entrance roads, to protect the resources, maintain the historic landscape, and allow unsupervised visitor access into the areas. There would be interpretive and safety signs outside the fence.

**Delta One.** As in alternative 2, in the perimeter zone the helipad would be repaired and repainted. However, the primary sewage lagoon, fenced by barbed wire, would not be filled and returned to service. The secondary sewage lagoon would also remain dry. The grass would be mowed around the chain-link security fence (to NPS standards). The historic entrance road would be maintained to NPS standards, and the county road would need to be modified for visitor safety. The historic use of cattle grazing would continue.

**Delta Nine.** The grass would also be mowed around the chain-link security fence (to NPS standards). The remaining grounds would continue to be maintained as grassland with cattle grazing. The wooden posts indicating the location of the HICS cable would be preserved and protected. The entrance road would be maintained to NPS standards; routine maintenance, repairs, snow removal, and groundskeeping would also be to NPS standards.

An additional 300-400 feet of road improvements would be added to the county road to the south to improve access to the parking lot. This action would be taken by the county.

## **VISITOR EXPERIENCE ON-SITE**

Visitors would experience the facilities as museum displays with minimal changes from their historic character. Visitors would be able to drive their personal cars to both Delta One

and Delta Nine and take a leisurely self-directed tour. Regularly scheduled ranger-led tours would also be available. Tours for the underground control center (capsule), by reservation, would be limited to six visitors plus an interpreter. The chain-link security gate at both sites would remain open during business hours. Interpretive rangers would be on-site. There would be few restrictions on the number of visitors on-site.

With reservations, commercial tours and school groups could receive aboveground tours (during the peak visitor season, this would likely be without entrance into any of the buildings). There would be numerous access options for visitors with disabilities (permanent benches, ramps, and hardened paths).

### **Delta One**

Visitors would see some original items (protected on-site using various techniques), although many original/sensitive items would be on display at the visitor facility and would be replaced on-site by reproductions. Visitors could see into but not enter exterior and interior rooms. Throughout the site many of the resource protection strategies would be evident, such as barriers and coverings. Because visitors would be on a ranger-led tour, the control room, elevator, and underground capsule would contain original items, such as computers and life support systems.

### **Delta Nine**

Visitors would see original structures. Because this is an extremely hardened site, protective techniques and reproductions would not be needed. Visitors could continue to see a missile through the existing viewing enclosure. A second viewing dome would allow visitors to see the inner workings of the underground support building.

### ON-SITE VISITOR FACILITIES

At each Delta facility would be a nearby, staffed, visitor contact station with paved parking areas, each in the education/interpretation zone). Each small (about 625 square feet) visually compatible building would contain interpretive/educational media, a staff office, and vault toilet. Other visitor amenities, such as a picnic area, could be developed. A hardened path would be available from the parking areas to the entrance gates, primarily for access by visitors with disabilities.

### INTERPRETATION

At the primary visitor facility, interpretation and education programs would provide the in-depth story of the heroic efforts made to construct the nation's Cold War defense system in less than two years. Displays and exhibits would include many original items. Interpretation and education programs would evoke an understanding of the national investment made in facilities and technology as well as the support of and sacrifices made by community residents, and construction employees in defense of the nation.

#### Delta One

Interpretive/educational information would be available at the visitor contact station, which would be staffed. Extensive interpretive, directional, and safety information would be installed throughout the site, but mostly near the parking area and visitor contact station.

#### Delta Nine

Extensive interpretive, directional, and safety information would be installed throughout the site, but mostly near the parking area and visitor contact station.

### ETHNOGRAPHIC RESOURCES AND MUSEUM OBJECTS

Ethnographic resources, such as oral histories and remembrances of missileers and workers associated with maintaining the alert status of the Minuteman Missile system throughout the United States would be accepted and actively collected in this alternative.

Museum objects that have been stored off-site (at Ellsworth Air Force Base) would be returned to the national historic site. Some museum objects would be returned to their historic locations. Many museum objects would be on display in the visitor facility. Other items would be stored in the curatorial area of the visitor facility or at the Badlands curatorial facility.

### MANAGEMENT ACTIVITIES

- Evaluations would be conducted for resource degradation caused by dust, humidity, heat, water seepage, rust, mold, pests, or ultraviolet damage. Based on these evaluations, necessary equipment would be installed.
- Security monitoring and alarm systems would be upgraded, possibly including television monitors. Routine law enforcement patrols would occur.
- Existing fire protection systems would remain in place. Fire protection systems would be upgraded at Delta One, including a pump and an underground water storage tank at the facility. Existing systems at Delta Nine would not need upgrading.
- Basic utilities such as heating and air-conditioning would be monitored and upgraded as needed (due to the expected increase in visitation) at the launch facility support building.
- A minimal heating system in the garage at Delta One, similar to the original, would be installed to meet environmental needs.
- With the addition of a viewing dome over the launch support facility building at



Delta Nine, changes to the environmental control systems would likely be needed to stabilize the environment and protect the resources.

- Business hours would be Monday through Friday, 8 a.m. to 5 p.m.
- The Park Service would continue working with the relevant counties and township to maintain the county access roads from Interstate 90 at both Delta facilities for visitor use.
- The visitor / administrative facility at exit 131 would require hooking up to existing electric and water lines, installing underground water storage tanks for domestic and fire suppression water, and installing a sewage lagoon.

### STAFFING

To implement this alternative, staff would need to include about 20 full-time-equivalent staff members, as follows:

- a superintendent
- an administrative support assistant
- a seasonal clerk
- a supervisory facility operations specialist
- a maintenance mechanic
- 2 custodians
- 2 seasonal custodians
- a chief visitor and resource protection/interpretation and visitor services ranger
- 2 park visitor and resource protection rangers
- a seasonal resource and visitor protection ranger shared with Badlands National Park
- an interpretation and visitor services park ranger
- 2 park guides
- 6 seasonal park guides
- 3 seasonal visitor use assistants
- a cultural resource specialist/curator
- a museum technician shared with Badlands National Park

### BOUNDARY ADJUSTMENT

As explained in detail beginning on page 38, boundary adjustments would be needed for transferring up to 25 additional acres at exit 131 for the visitor/ administrative facility, and up to 5 acres at Delta Nine for education/ interpretation from the U.S. Forest Service to the National Park Service.

The historical facilities at Delta One are strongly linked to their cultural setting. Alternative 3 proposes up to a 420-acre boundary adjustment at Delta One to protect the historic landscape that is critical to fulfilling the national historic site’s purposes. The boundary adjustment would allow less-than-fee-interests (such as scenic easements) to be developed and private ownership to continue. Any such action would be contingent upon available funding. (See Alternative 3 — Proposed Historic Landscape Protection Area map.)

Congressional legislation would be needed for these boundary adjustments.

A technical revision to the official map accompanying the legislation would be needed to realign 3.65 acres at Delta One with existing public ownership.

### PARTNERSHIPS

In compliance with the legislation, a formal agreement would be established with the Air and Space Museum at Ellsworth Air Force Base in Rapid City to complement both NPS and Air Force programs. Visitors would continue to be referred to the museum on an individual basis. If visitors cannot go into the launch control center (underground) capsule because of accessibility issues or due to increased visitation, the Air and Space Museum offers a silo and an accessible control center (capsule). Those with past military experience, especially former Air Force personnel, would also continue to be referred to the museum. The national historic site

would continue to carry the museum’s pamphlet, and information concerning the museum is in the national historic site’s brochure. Wayside exhibits, bulletin boards, and site bulletins would also contain information about the museum. Air and Space Museum assets, such as the *Missile Procedures Manual* and the missile transporter-erector vehicle, would be interpreted by exhibits at the national historic site. These exhibits would also tell visitors that they could see these resources first-hand at the museum. Museum visitors would in turn learn about national historic site resources through their interpretive programs and media.

**VISITATION PROJECTIONS**

The analysis in the “Alternative Transportation System Study” projected that a visitor center at exit 131 would receive 474,000 visitors in 5 years, 479,000 visitors in 10 years, and 488,100 visitors in 20 years.

**ESTIMATED COSTS**

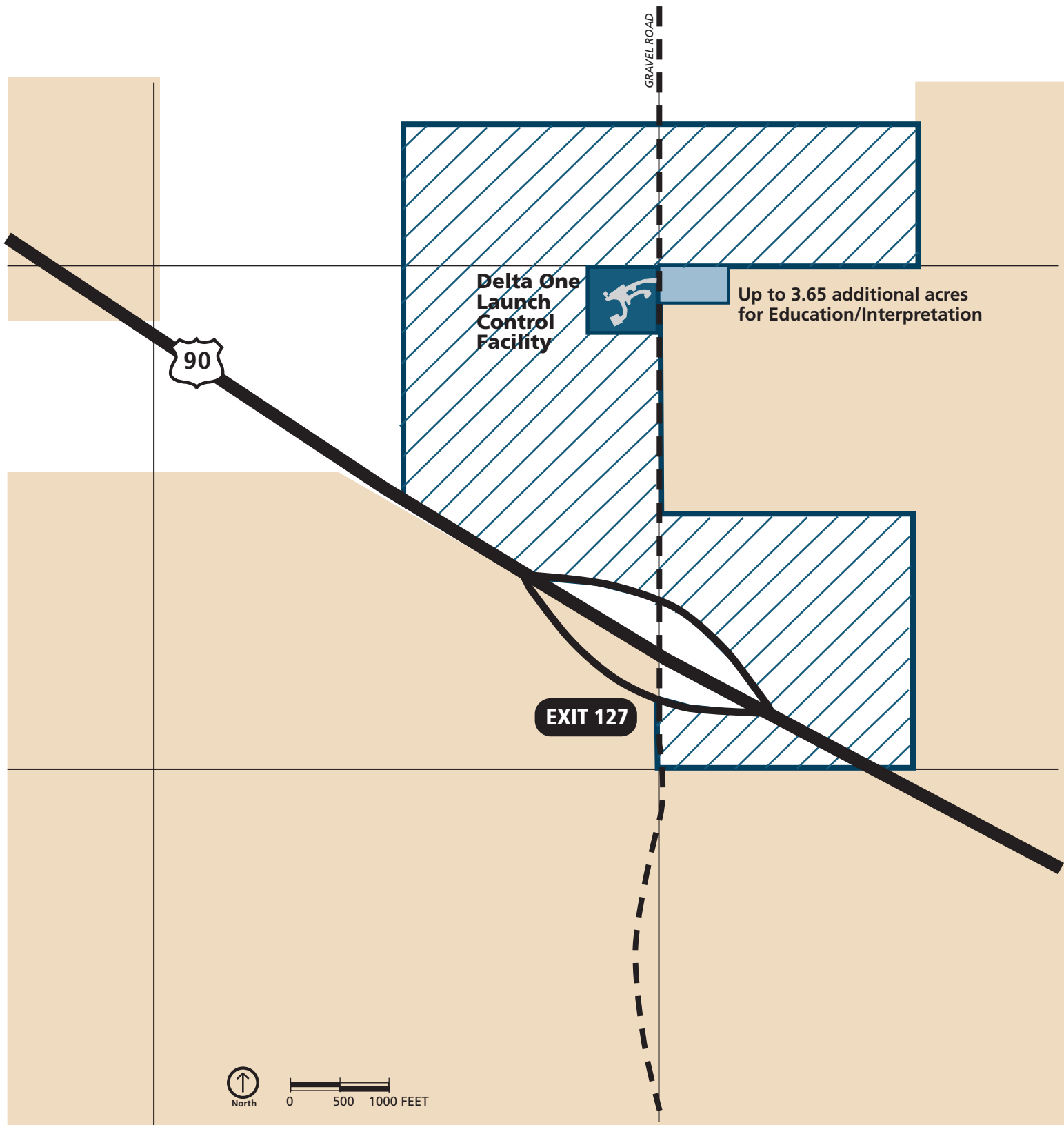
Costs for alternative 3 are given for comparison to other alternatives only; they are not to be used for budgetary purposes or implementation funding requests. Although the costs appear to be absolutes, they represent estimated costs. The costs developed include annual operating costs, initial construction, and other one-time costs.

The implementation of any alternative (approved plan) depends on future funding and NPS priorities. An approved plan does not guarantee that funding and staffing will be forthcoming. The approved plan establishes a vision of the future that will guide day-to-day and year-to-year management of the national historic site, but full implementation could take many years.

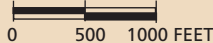
**TABLE 8. COSTS, ALTERNATIVE 3**

Total Annual Operating Costs <sup>(1)</sup>		\$1,134,782
Staffing – FTE <sup>(2)</sup>	20	
One Time Costs		
Initial Construction <sup>(3)</sup>	\$6,930,885	
Interpretive Exhibits	\$2,473,169	
Interstate 90 interchanges (Federal Lands Highway Program funds)	\$1,350,000	
Total One Time Costs		\$10,754,054

- (1) Annual operating costs are the total annual costs for maintenance and operations associated with each alternative, including: utilities, supplies, staff salaries and benefits, leasing, and materials.
- (2) Total full-time-equivalent (FTE) employees are the number of staff required to maintain the assets of the national historic site at a good level, provide acceptable visitor services, protect resources, and administer the national historic site. The FTE staff would not necessarily be NPS employees. National historic site managers would explore opportunities to work with partners, volunteers, and other federal agencies to effectively and efficiently manage the national historic site. FTE salaries and benefits are included in the annual operating costs.
- (3) Included here are one-time facility costs related to construction and non-facility costs related to natural and cultural resources management and visitor use projects. In the no-action alternative, one-time costs include only those costs already planned within existing programs and with an approved funding source.



North



- EXISTING NATIONAL HISTORIC BOUNDARY
- USFS LANDS PROPOSED FOR INCLUSION WITHIN HISTORIC SITE BOUNDARY
- NATIONAL GRASSLAND
- PROPOSED HISTORIC LANDSCAPE PROTECTION AREA (Up to 420 ACRES)
- PRIVATE LAND

**Alternative 3**  
**Proposed Historic Landscape Protection Area**

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## ALTERNATIVE 4: COLD WAR SYMBOLS (PREFERRED ALTERNATIVE)

### CONCEPT

The concept of this alternative would be to **restore** Delta One to its ready-alert status (as in alternative 2) and **rehabilitate** Delta Nine (as in alternative 3) to its stand-down appearance (from the ratification of the START Treaty in October 1992 to the establishment of the national historic site in 1999). The facilities would be presented as symbols commemorating the history and significance of the Cold War, the arms race, and the intercontinental ballistic missile (ICBM) in the second half of the 20th century. Visitors would access Delta One on a ranger-led tour (potentially via shuttle) and would drive their own cars to Delta Nine to see the facility.

Management actions would recognize the opportunity to publicly acknowledge the role of all individuals involved in the Minuteman II mission.

### PRIMARY VISITOR / ADMINISTRATIVE FACILITY AT EXIT 131

A 7,700-square-foot visitor/ administrative facility (based on NPS Facility Calculator) would be constructed north of exit 131 on Interstate 90. This facility would provide a full range of visitor amenities, including picnic areas; restrooms; parking for cars, buses, and RVs; and potentially a shuttle drop-off and pick-up, as well as NPS headquarters and offices and maintenance, shuttle support if needed, and storage areas. There would be directional signs on Interstate 90 directing visitors to this facility and Delta Nine.

Construction of the visitor center/ administrative facility and potential shuttle system would be implemented in two stages. Stage one would begin with construction of a stand-alone visitor center (5,300 square feet). This facility would be designed so that the

administrative portion (stage two) could be added at a later date when funding becomes available and staffing could be increased. During stage one, the administrative functions and NPS staff would remain in the project office. A shuttle system could be developed and operated after such a time as the level of visitation warranted.

### RESOURCE CONDITIONS INSIDE THE SECURITY FENCES

#### Preservation/Learning Zone

**Delta One.** As in alternative 2, the facility would be restored to its ready-alert status. Restoration would allow for repair of the facilities using in-kind materials. Most of the aboveground buildings, structures, and surfaces inside the chain-link security fence at Delta One would be in the preservation/ learning zone, as would the control room, elevator, and underground capsule. This would allow as many historic items as possible to remain in their original locations. Damage that occurred during deactivation and moth-balling would be repaired. Additional modifications to the buildings and structures, for visitor safety and resource protection, would be limited and reversible.

As in alternative 2, some original items removed from the facility and placed in storage at Ellsworth Air Force Base would be returned to their original locations. Original items no longer available would be replaced with similar items from other Minuteman facilities. Items most susceptible to deterioration, such as magazines, drawings, and written logs, would be replaced with replicas.

The garage would contain original or in-kind vehicles and equipment such as a Peacekeeper (security response vehicle), front-end loader, snow blower, and lawn mower.

Restoration of the grounds and exterior structures would include maintaining the original basketball hoop and flagpole, replacing in-kind the basketball pole padding, repairing the asphalt at the basketball area, and restoring the original code-burning drum and gas pump to their historic locations. In specific areas, overgrown vegetation would be eliminated (such as at the volleyball court and horseshoe pits), and the grounds would be maintained to military standards.

### Self-Directed Zone

**Delta Nine.** Under this alternative, as in alternative 3, Delta Nine would be returned to its stand-down appearance, but NPS interpretive staff would not always be present on-site. Providing unsupervised access to visitors would require that the National Park Service make permanent changes to the historic fabric through a rehabilitation treatment. Changes would comply with the *Secretary of the Interior's Standards for Rehabilitation*, and damage that occurred during mothballing and deactivation would be repaired.

Interpretive and safety/directional signs would be present inside and outside the chain-link fence. Hardened paths, mostly for visitors with disabilities, would be developed.

There would be an option of placing an additional viewing enclosure over the support building to allow visitors to see the mechanical equipment below ground. This option would be exercised depending on funding.

Routine grounds maintenance and repair would be performed in keeping with NPS standards. In specific areas the overgrown vegetation would be eliminated.

## RESOURCE CONDITIONS OUTSIDE THE SECURITY FENCES

### Perimeter Zone

Most of the grounds outside the security fence would be in the perimeter zone to protect the resources, maintain the historic landscape, and allow unsupervised visitor access into the areas. There would be interpretive and safety signs outside the fence.

**Delta One.** In the perimeter zone the helipad would be repaired and repainted. The primary sewage lagoon, fenced by barbed wire, and the secondary sewage lagoons would remain dry. A 6- to 10-foot width of grass would be mowed around the outside of the chain-link security fence and maintained to military standards. The historic use of cattle grazing would continue. Routine maintenance, repairs, snow removal, and groundskeeping would occur and reflect a military standard.

**Delta Nine.** The grass would be mowed around the chain-link security fence to NPS standards. The remaining grounds would continue to be maintained as grassland with cattle grazing. The azimuth markers and wooden posts indicating the location of the HICS cable would be preserved and protected. Routine maintenance, repairs, snow removal, and groundskeeping would occur and reflect NPS standards.

An additional 300-400 feet of road improvements would be added to the county road to the south to improve access to the parking lot. This action would be taken by the county.

### Limited Access Zone

Underground structures at both Delta facilities that are difficult or dangerous to access would be in the limited access zone. See the management zone table 5 for a list of these facilities.



### Alternative 4

## Visitor and Administration Facility Location Recommended Boundary Adjustment

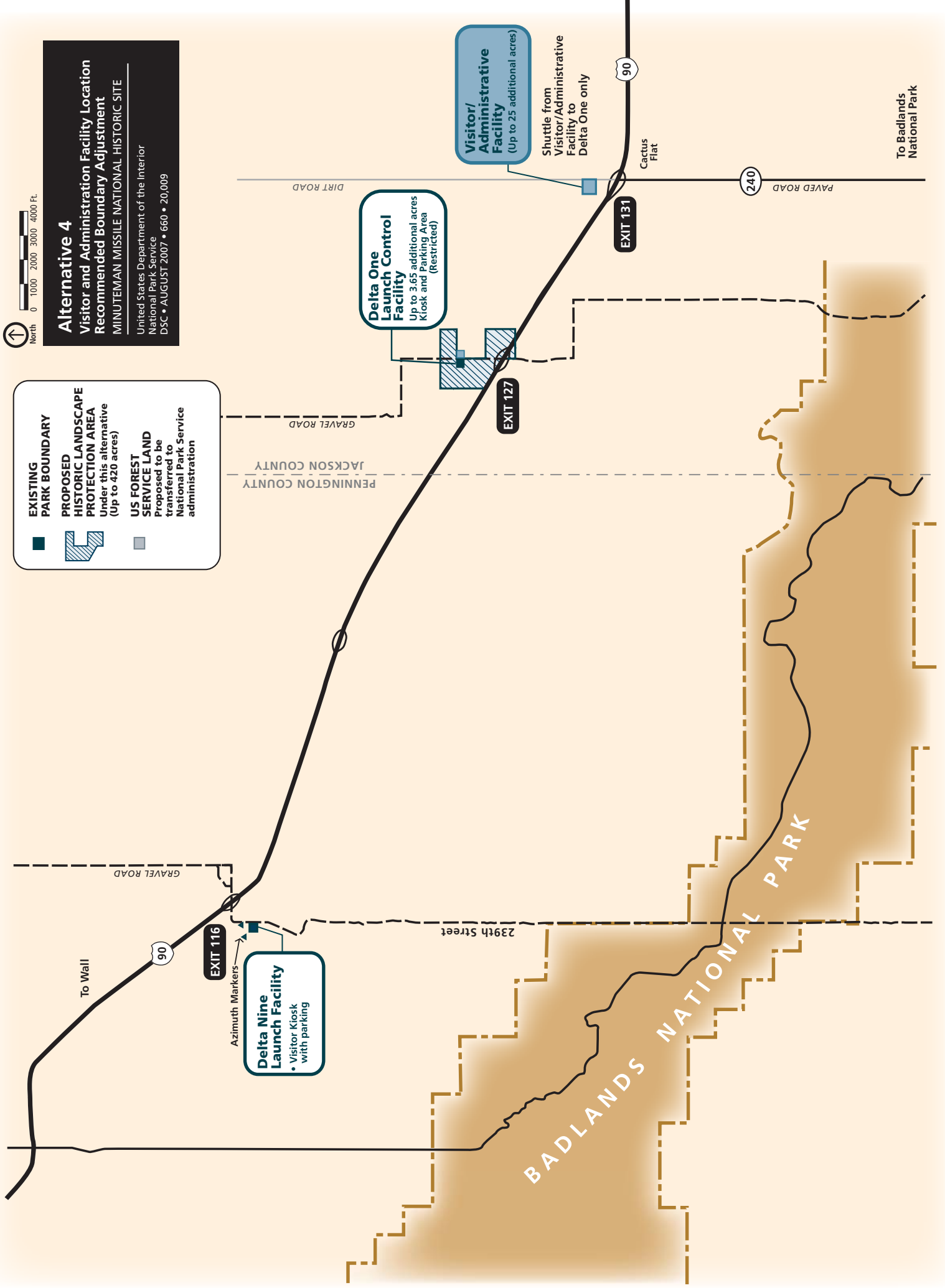
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National Park Service  
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**EXISTING PARK BOUNDARY**

**PROPOSED HISTORIC LANDSCAPE PROTECTION AREA**  
Under this alternative (Up to 420 acres)

**US FOREST SERVICE LAND**  
Proposed to be transferred to National Park Service administration



**Delta Nine Launch Facility**  
• Visitor Kiosk with parking

**Delta One Launch Control Facility**  
Up to 3.65 additional acres Parking Area Kiosk and (Restricted)

**Visitor/Administrative Facility**  
(Up to 25 additional acres)

Shuttle from Visitor/Administrative Facility to Delta One only

EXIT 116

EXIT 127

EXIT 131

To Wall

GRAVEL ROAD

PENNINGTON COUNTY

GRAVEL ROAD

DIRT ROAD

239th Street

90

240

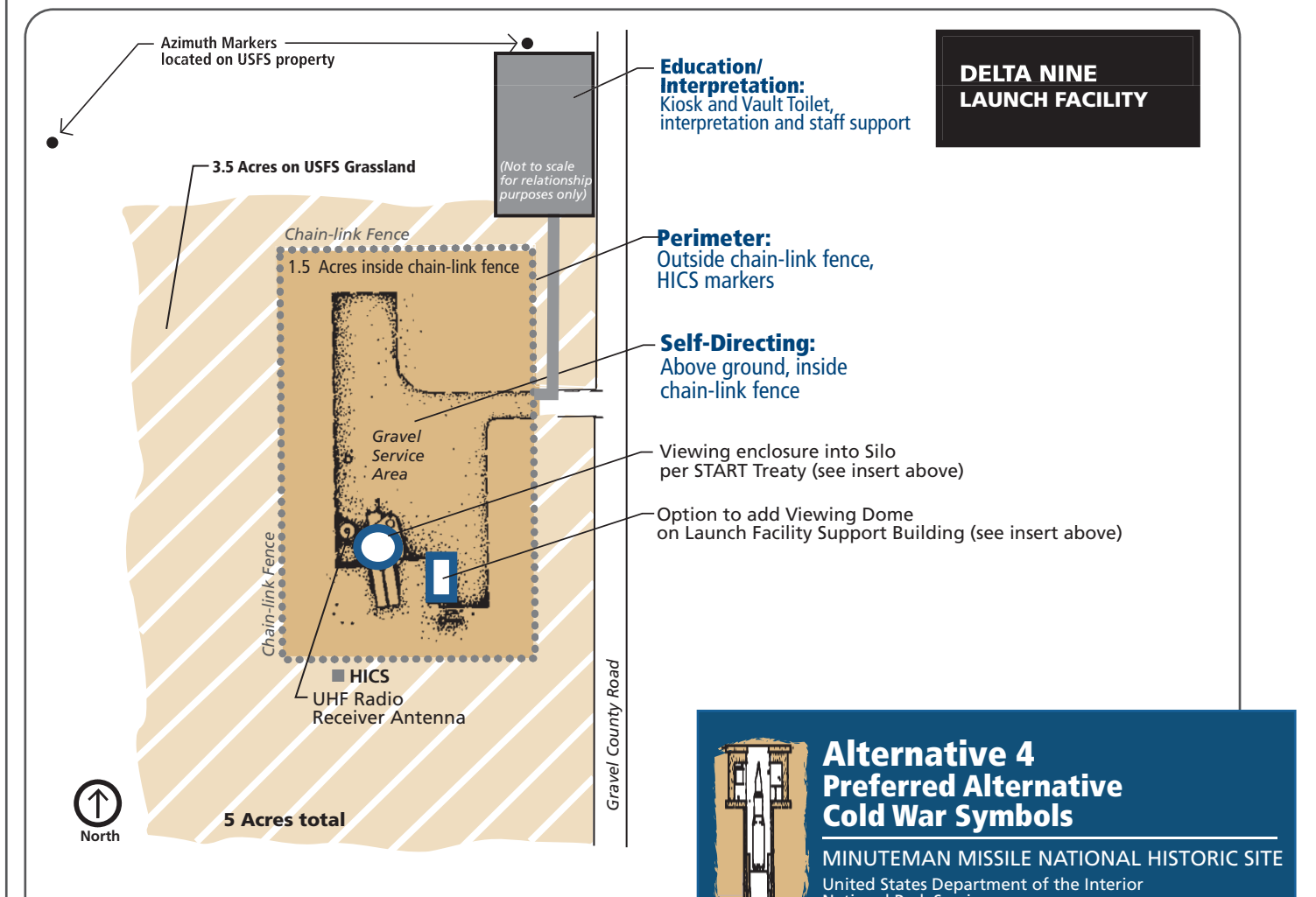
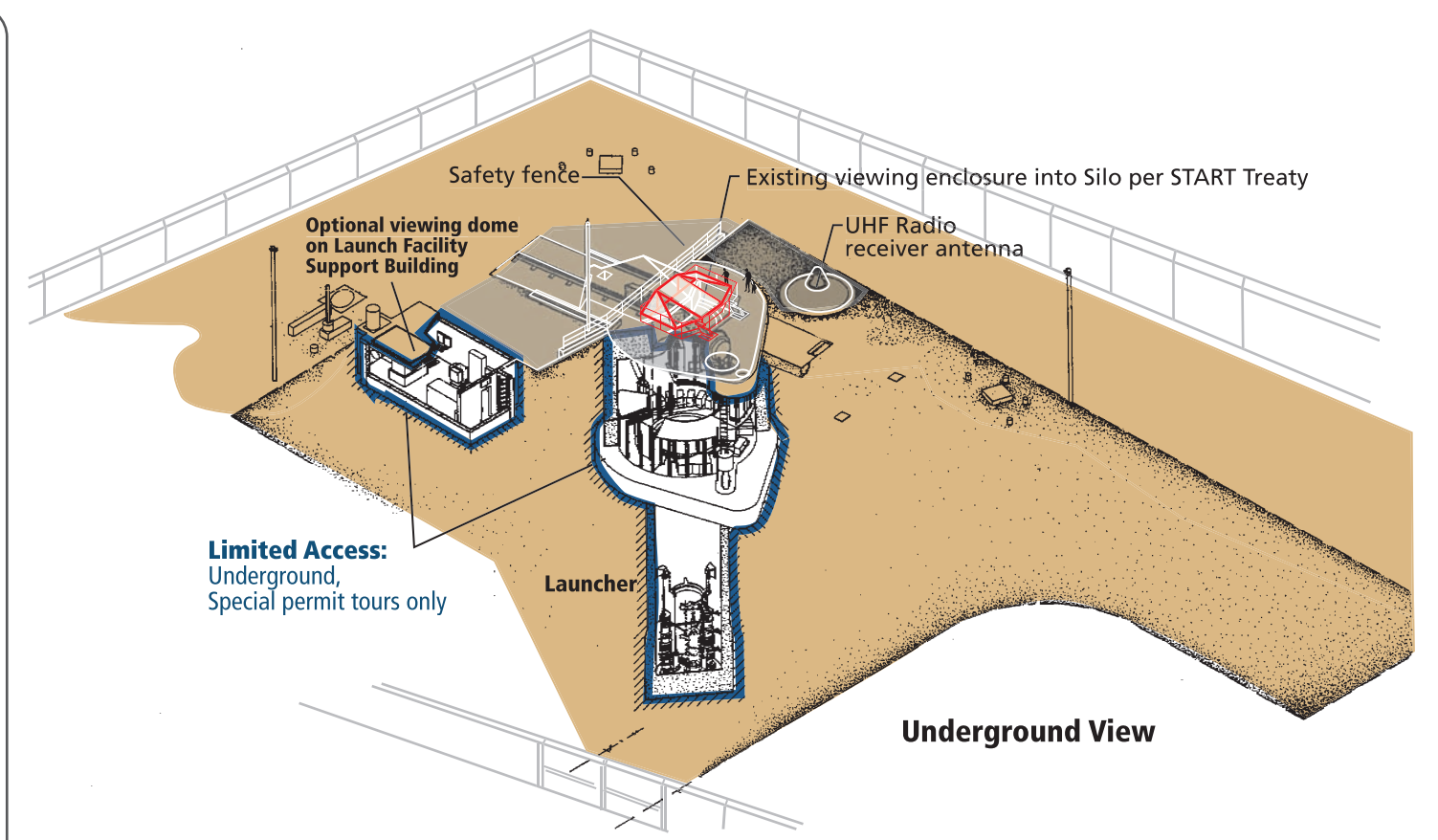
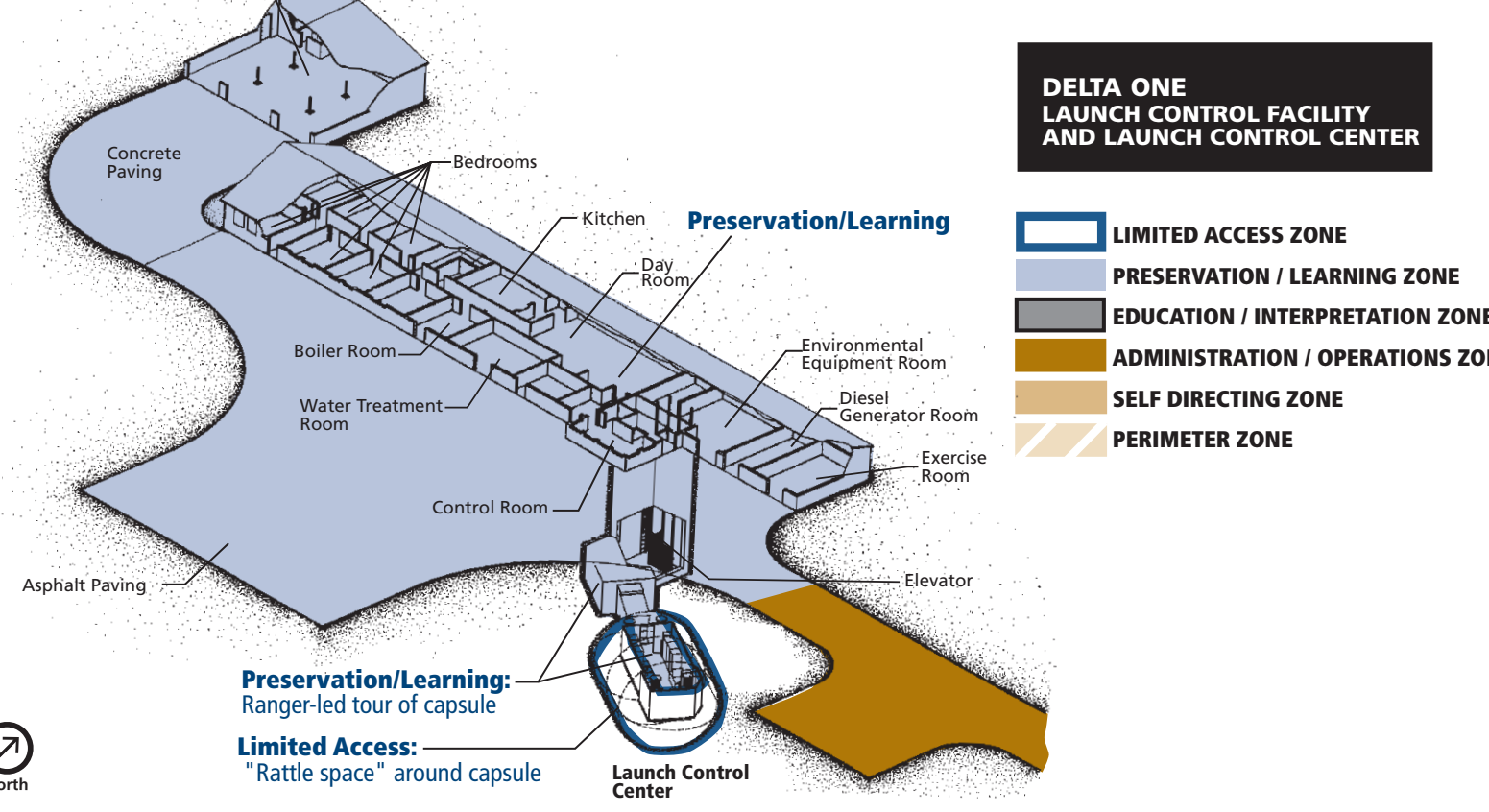
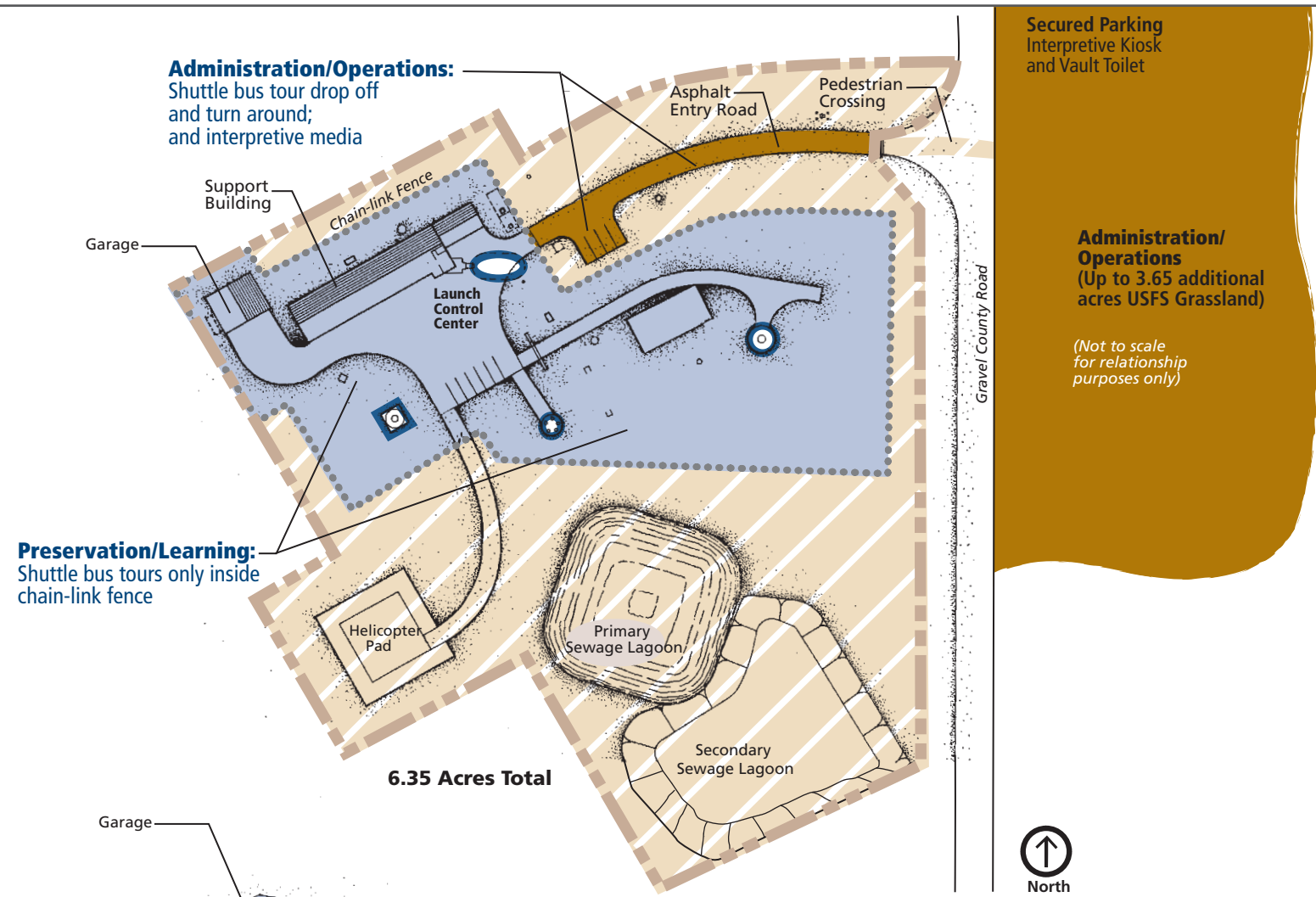
Cactus Flat

To Badlands National Park

BADLANDS NATIONAL PARK







**Alternative 4 Preferred Alternative Cold War Symbols**

MINUTEMAN MISSILE NATIONAL HISTORIC SITE  
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## **Administration/Operations and Education/Interpretation Zones**

The historic entrance road and parking area at Delta One would be in the administration/operations zone to allow for administrative and shuttle parking. The hardened path from the parking area across the street and the kiosk at Delta Nine would be in the education/interpretation zone to allow for pedestrian safety and interpretive signs.

### **VISITOR EXPERIENCE ON-SITE**

Note that shuttles would not be used until visitation is at a level where the protection of resources was a concern and the shuttles were cost-effective.
---

Visitors would experience Delta One as if personnel were still on-site. Some museum objects would be in their original location. Visitors would experience Delta Nine as a static display.

Visitors would drive to both Delta One and Nine unless a shuttle system was developed. Shuttles could be available when visitation reaches a level where the impact on resources became a concern and the shuttles were cost-effective.

### **Delta One**

At Delta One the chain-link security gate would remain locked during business hours except for tours. Visitors would need to make reservations for a tour of Delta One. Tours, offered throughout business hours, would be up to three small groups of six visitors, each with an interpreter. Tours would include the underground control center (capsule), but capacity for the capsule would be six visitors plus an interpreter. (The other two groups of six could tour the grounds or the launch control facility while the third group of six was touring the capsule.) There would be no

staff on-site except during tours. Once the shuttle system began operations, shuttle parking would be on the entrance road. A fee would be charged for the shuttle tours.

To provide additional opportunities to visit Delta One when tours are full for the day, in this alternative management would have the option of allowing visitors to park at Delta One and take an interpretive-led tour of the grounds. Depending on circumstances, and with prior reservations, large groups such as commercial and school groups could be taken through the support building. An unpaved, secured parking area would be nearby. This parking area would be available, by permit, primarily for those taking the aboveground tours — commercial tour buses, school buses, RVs, and passenger vehicles.

As in alternative 2, at Delta One visitors would see original or in-kind items wherever possible to maintain the appearance of an active military facility (before July 1991). Items such as magazines, desk supplies, furniture, log books, typewriters, computers, keys, and telephones would be in the same location as before July 1991. In the underground launch control center (capsule) visitors would see computers and life support systems. On the grounds, visitors would see items such as the original code burner and in-kind or restored items such as the flag pole, gas pump, and basketball hoop and pole.

To accommodate visitors with disabilities, access would be provided using temporary and removable structures such as ramps.

The garage would house period vehicles and equipment such as a Peacekeeper (security response vehicle), snow blower, front-end loader, and lawn mower.

### **Delta Nine**

Visitors could drive their personal vehicles to Delta Nine for a self-guided tour. The chain-link security gates would remain open during business hours. Scheduled ranger-led tours would be available at Delta Nine depending on staffing. A parking area for passenger cars, RVs, and buses would be available nearby.

At Delta Nine visitors would see original structures. Because this is an extremely hardened site, protective techniques and reproductions would not be used. Visitors could continue to see a missile through the existing viewing enclosure. If funding permits, a viewing enclosure could be placed over the underground support building so visitors could see the underground equipment.

There would be few restrictions on the number of visitors on-site.

### **ON-SITE VISITOR FACILITIES**

The visitor facilities described below would likely not be developed until funding was available.

#### **Delta One**

A vault toilet and unpaved parking (accessed by permit only) would be available across the county road from Delta One. A hardened path, with traffic safety signs, would be available from the parking area to the entrance gate, primarily for access by visitors with disabilities. This facility would be in the administration/operation zone.

#### **Delta Nine**

An unstaffed kiosk would be available nearby (exact location to be determined). This small visually compatible building would contain interpretive media, and a vault toilet. A parking area (unpaved) would be available

nearby. Other visitor amenities, such as a picnic area, could be developed. A hardened path would be available from the parking area to the entrance gate, primarily for visitors with disabilities. The parking area and kiosk would be in the education/ interpretation zone.

### **INTERPRETATION**

At the primary visitor facility, interpretation and education programs would provide the story of the facilities' relationship to the international Cold War story. Interpretation would evoke an understanding of the operational character of the sites as the United States' commitment to the mission of maintaining world peace. Similar to alternative 2, interpretation and education programs would provide the in-depth story of the daily life of the personnel stationed at the Delta facilities and would be mostly audiovisual media. Displays and exhibits could include cutaways of the underground launch control center (capsule) and personal items donated by servicemen stationed at the Delta facilities. Displays could also include large-scale items such as a Minuteman II missile or missile transporter. There would be various exhibits, films, and "virtual" tours provided at the visitor facility, and on the national historic site web site. On the tour visitors would receive orientation and scene setting, including information on safety and resource protection.

#### **Delta One**

There would be no staff on-site except during tours. Visitors would be with an interpretive ranger at all times. No interpretive or safety signs would be inside the security fence. Minimal interpretive and safety signs would be installed on the historic entrance roads to provide information to drop-in visitors who arrived after business hours or were unaware that reservations were required for tours.

## **Delta Nine**

Extensive interpretive, directional, and safety information would be installed throughout the site, but mostly near the parking area and interpretive kiosk.

## **ETHNOGRAPHIC RESOURCES AND MUSEUM OBJECTS**

Ethnographic materials, such as oral histories and remembrances of those missileers and workers associated with the activities historically related to the Cold War as it affected the United States, the Soviet Union, and the rest of the world, would be accepted and actively collected.

Museum objects that have been stored off-site (at Ellsworth Air Force Base) would be returned to the national historic site. Most museum objects would be returned to their historic locations. Some museum objects would be on display in the visitor facility. Other museum objects would be stored in the curatorial area of the visitor facility or at the Badlands curatorial facility.

## **MANAGEMENT ACTIVITIES**

- Evaluations would be conducted for resource degradation caused by dust, humidity, heat, water seepage, rust, mold, pests, or ultraviolet damage. Based on these evaluations, necessary equipment would be installed.
- Security monitoring would remain as it is, with possible minor supplemental additions at Delta One. Existing systems at Delta Nine would not need upgrading. Routine law enforcement patrols would occur.
- Fire protection systems would be upgraded at Delta One, including a pump and underground water storage tank at the facility. Existing systems at Delta Nine would not need upgrading.

- Basic utility systems such as heating and air-conditioning would be monitored and upgraded as needed.
- A minimal heating system in the garage at Delta One, similar to the original, would be installed to meet environmental needs.
- Business hours would be seven days a week, 8 a.m. to 5 p.m.
- The Park Service would continue working with the relevant counties and township to maintain the county access roads from Interstate 90 at both Delta facilities for visitor use.
- The visitor / administrative facility at exit 131 would require hooking up to existing electric and water lines, installing underground water storage tanks for domestic and fire suppression water, and installing a sewage lagoon.

## **STAFFING**

To implement this alternative, staff would need to include about 15 full-time-equivalent (FTE) staff members, as follows (see appendix G):

- a superintendent
- an administrative support assistant
- a supervisory facility operations specialist
- a maintenance mechanic
- a custodian
- a seasonal custodian (0.5 FTE employee)
- a chief visitor and resource protection/interpretation and visitor services ranger
- 2 visitor and resource protection park rangers
- a seasonal resource and visitor protection ranger shared with Badlands National Park (0.25 FTE employee)
- an interpretation and visitor services park ranger
- a park guide
- 6 seasonal park guides (3 FTE employees)
- a cultural resource specialist/curator

Finalizing the management plan does not guarantee that funding to implement the

alternative will be forthcoming. Operational base funding, for example, may not be immediately available for the proposed employees. If this is the case, staffing increases and the actions these employees would accomplish would have to be phased in as future base funding becomes available. For example, as increases in funding become available, more actions such as operating more tours per day could be implemented. If base funding does not become available, those additional actions and core positions would be postponed.

Phase I: Current staff totals 7.75 FTE employees (see page 48). The national historic site's current funding covers both fixed costs for permanent employees and discretionary costs for temporary employees. NPS cost projections show adequate funding for one additional permanent employee and up to two additional temporary employees, i.e., two FTE employees, for a total of 9.75 FTE employees, and funding is available to maintain the current level of resource protection, visitor services, and facility maintenance. Operations and visitors services for the proposed visitor center would be managed within the current budget and 9.75 FTE employees.

Phase II: As future funding becomes available, one permanent park guide and four seasonal park guides would be hired to fully implement duties related to visitor tours, educational services, and other visitor services.

Phase III: In the next phase, as funding becomes available, one permanent maintenance mechanic and one permanent custodian would be added beyond phase 1 levels for duties related to facility maintenance and operations.

Phase IV: In the final phase, as funding becomes available, one permanent law enforcement ranger would be added beyond phase 1 levels for duties related to visitor and resource protection.

## **BOUNDARY ADJUSTMENTS**

As explained in detail beginning on page 38, a boundary adjustment would be needed for transferring up to 25 additional acres at exit 131 for the visitor/ administrative facility.

The historical facilities at Delta One are strongly linked to their cultural setting. Alternative 4 proposes up to a 420-acre boundary adjustment at Delta One to protect the historic landscape that is critical to fulfilling the national historic site's purposes. The boundary adjustment would allow less-than-fee-interests (such as scenic easements) to be developed and private ownership to continue. Any such action would be contingent upon available funding. (See Alternative 4 — Proposed Historic Landscape Protection Area map.)

Congressional legislation would be needed for these boundary adjustments.

A technical revision to the official map accompanying the legislation would be needed to realign 3.65 acres at Delta One with existing public ownership. Unlike alternative 3, there would be no need for a boundary adjustment at Delta Nine.

## **PARTNERSHIPS**

In compliance with the legislation, a formal agreement would be established with the Air and Space Museum at Ellsworth Air Force Base in Rapid City to complement both NPS and Air Force programs. Visitors would continue to be referred to the museum on an individual basis. If visitors cannot go into the launch control center (underground) capsule because of accessibility issues or due to increased visitation, the Air and Space Museum offers a silo and an accessible control center (capsule). Those with past military experience, especially former Air Force personnel, would also continue to be referred to the museum. The national historic site would continue to carry the museum's

*Alternative 4: Cold War Symbols (Preferred Alternative)*

pamphlet, and information concerning the museum is in the national historic site’s brochure. Wayside exhibits, bulletin boards, and site bulletins would also contain information about the museum. Air and Space Museum assets, such as the *Missile Procedures Manual* and the missile transporter-erector vehicle, would be interpreted by exhibits at the national historic site. These exhibits would also tell visitors that they could see these resources first-hand at the museum. Museum visitors would in turn learn about national historic site resources through their interpretive programs and media.

Tour capacity for the underground launch control center at Delta One is estimated at 108 visitors per day during the high season.

**ESTIMATED COSTS**

Costs for alternative 4 are given for comparison to other alternatives only; they are not to be used for budgetary purposes or implementation funding requests. Although the costs appear to be absolutes, they represent estimated costs. The costs developed include annual operating costs, initial construction, and other one-time costs.

**VISITATION PROJECTIONS**

The analysis in the “Alternative Transportation System Study” projected that a visitor center at exit 131 would receive 474,000 visitors in 5 years, 479,000 visitors in 10 years, and 488,100 visitors in 20 years.

The implementation of any alternative (approved plan) depends on future funding and NPS priorities. An approved plan does not guarantee that funding and staffing will be forthcoming. The approved plan establishes a vision of the future that will guide day-to-day and year-to-year management of the national historic site, but full implementation could take many years.

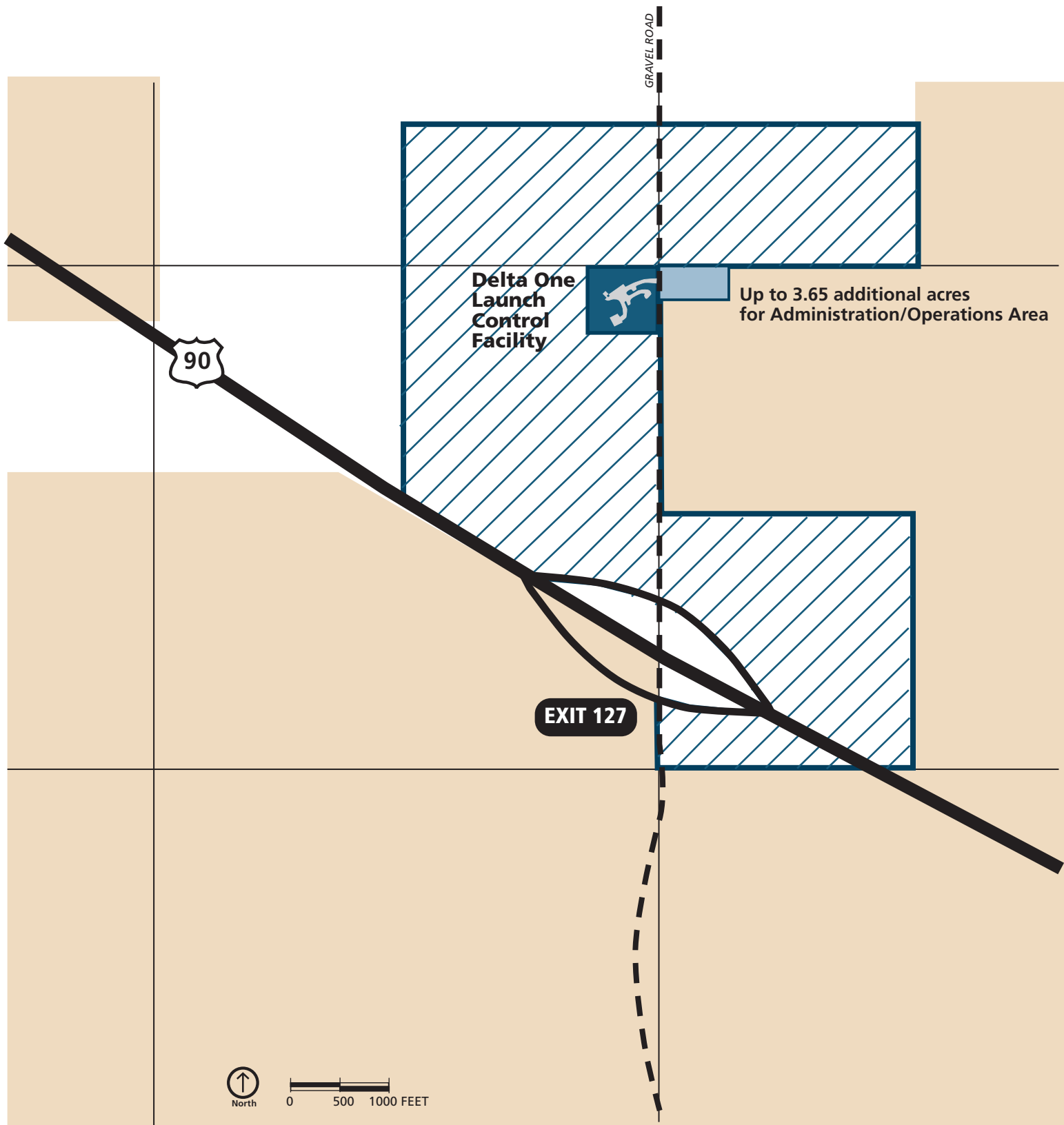
**TABLE 9. COSTS, ALTERNATIVE 4**

Total Annual Operating Costs <sup>(1)</sup>		\$982,248
Staffing – FTE <sup>(2)</sup>	15	
One Time Costs		
Initial Construction <sup>(3)</sup>	\$5,522,649	
Interpretive Exhibits	\$2,473,169	
Interstate 90 interchanges (Federal Lands Highway Program funds)	\$900,000	
Total One Time Costs		\$8,895,818

- (1) Annual operating costs are the total annual costs for maintenance and operations associated with each alternative, including: utilities, supplies, staff salaries and benefits, leasing, and materials.
- (2) Total full-time-equivalent (FTE) employees are the number of staff required to maintain the assets of the national historic site at a good level, provide acceptable visitor services, protect resources, and administer the national historic site. The FTE staff would not necessarily be NPS employees. National historic site managers would explore opportunities to work with partners, volunteers, and other federal agencies to effectively and efficiently manage the national historic site. FTE salaries and benefits are included in the annual operating costs.
- (3) Included here are one-time facility costs related to construction and non-facility costs related to natural and cultural resources management and visitor use projects. In the no-action alternative, one-time costs include only those costs already planned within existing programs and with an approved funding source.







- EXISTING NATIONAL HISTORIC BOUNDARY
- USFS LANDS PROPOSED FOR INCLUSION WITHIN HISTORIC SITE BOUNDARY
- NATIONAL GRASSLAND
- PROPOSED HISTORIC LANDSCAPE PROTECTION AREA (Up to 420 ACRES)
- PRIVATE LAND

**Alternative 4**  
**Proposed Historic Landscape Protection Area**

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MINUTEMAN MISSILE NATIONAL HISTORIC SITE  
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## MITIGATIVE MEASURES COMMON TO ALL ALTERNATIVES

Congress charged the National Park Service with managing the lands under its stewardship “in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (NPS Organic Act, 16 USC 1). As a result, the National Park Service routinely evaluates and implements mitigation whenever conditions occur that could adversely affect the sustainability of national park system resources.

To ensure that implementation of the action alternatives protects unimpaired natural and cultural resources and the quality of the visitor experience, a consistent set of mitigative measures would be applied to actions proposed in this plan. The National Park Service would prepare appropriate environmental review (i.e., those required by the National Environmental Policy Act, National Historic Preservation Act, and other relevant legislation) for these future actions. As part of the environmental review, the National Park Service would avoid, minimize, and mitigate adverse impacts when practicable. The implementation of a compliance-monitoring program could be considered to stay within the parameters of National Environmental Policy Act and National Historic Preservation Act compliance documents, U.S. Army Corps of Engineers Section 404 permits, etc. The compliance-monitoring program would oversee these mitigative measures and would include reporting protocols.

The following mitigative measures and best management practices would be applied to avoid or minimize potential impacts from implementation of the alternatives. These measures would apply to all alternatives.

### CULTURAL RESOURCES

The National Park Service would preserve and protect, to the greatest extent possible, resources and values that reflect human occupation of Minuteman Missile National Historic Site, and the traditional agricultural uses and prairie grasslands surrounding the Delta sites. Specific mitigative measures would include the following.

- Continue to develop inventories for and oversee research about historical and ethnographic resources to better understand and manage the resources. Continue to manage cultural resources and collections following federal regulations and NPS guidelines. Inventory the national historic site’s collection and keep in a manner that would meet NPS curatorial standards.
- Avoid adverse impacts through use of the *Secretary of the Interior’s Standards for Archeology and Historic Preservation*, and by using sensitive design that would be compatible with historic resources. If adverse impacts could not be avoided, mitigate these impacts through a consultation process with all interested parties.
- Conduct archeological surveys in unsurveyed areas where new development would occur to determine the extent and significance of archeological resources in the areas.
- Document cultural landscape of the national historic site and identify treatments to ensure its preservation.
- Rehabilitate and/or restore cultural landscape resources within the Delta facilities to the extent feasible. This could entail removing nonhistoric and incompatible features and incorporating new additions using compatible design.
- Wherever possible, locate projects and facilities in previously disturbed or existing developed areas.

- Whenever possible, modify project design features to avoid effects to cultural resources. New developments would be relatively limited and would be located on sites and blend with cultural landscapes. If necessary, use the natural topography and vegetative screening as appropriate to minimize impacts on cultural landscapes and ethnographic resources.
- Encourage visitors through the national historic site's interpretive programs to respect site structures, buildings, and museum objects.
- Strictly adhere to NPS standards and guidelines on the display and care of artifacts.

## NATURAL RESOURCES

### Air Quality

Implement a dust abatement program. Standard dust abatement measures could include the following elements: water or otherwise stabilize soils, cover haul trucks, employ speed limits on unpaved roads, minimize vegetation clearing, and revegetate after construction.

### Exotic Species

Implement a noxious weed abatement program. Standard measures could include the following elements: ensure construction-related equipment arrives on-site free of mud or feed-bearing material, certify all seeds and straw material as weed-free, identify areas of noxious weeds pre-construction, treat noxious weeds or noxious weed topsoil before construction (e.g., topsoil segregation, storage, herbicide treatment), and revegetate with appropriate native species.

### Threatened and Endangered Species and Species of Concern

Mitigative actions would occur during normal national historic site operations as well as before, during, and after construction to minimize immediate and long-term impacts to rare, threatened, and endangered species. These actions would vary by specific project and area of the national historic site affected. Many of the measures listed above for vegetation and wildlife would also benefit rare, threatened, and endangered species by helping to preserve habitat. Mitigative actions specific to rare, threatened, and endangered species would include the following:

- Conduct surveys for rare, threatened, and endangered species as warranted.
- Site and design facilities/actions to avoid adverse effects on rare, threatened, and endangered species. If avoidance is infeasible, minimize and compensate adverse effects on rare, threatened, and endangered species as appropriate and in consultation with the appropriate resource agencies.

### Vegetation

Monitor areas used by visitors (e.g., trails) for signs of native vegetation disturbance. Use public education, revegetation of disturbed areas with native plants, erosion control measures, and barriers to control potential impacts on native plants from trail erosion or social trailing.

### Water Resources

To prevent water pollution during construction, use erosion control measures, minimize discharge to water bodies, and regularly inspect construction equipment for leaks of petroleum and other chemicals.

## **Wildlife**

Employ techniques to reduce impacts on wildlife, including visitor education programs, restrictions on visitor activities, and ranger patrols.

## **Wetlands**

Delineate wetlands and apply protection measures during construction. Wetlands would be delineated by qualified NPS staff or certified wetland specialists and clearly marked before construction work. Perform construction activities in a cautious manner to prevent damage caused by equipment, erosion, siltation, and other activities.

## **HAZARDOUS MATERIALS**

Implement a spill prevention and pollution control program for hazardous materials. Standard measures could include hazardous materials storage and handling procedures; spill containment, cleanup, and reporting procedures; and limitation of refueling and other hazardous activities to upland/nonsensitive sites.

## **VISITOR SAFETY AND EXPERIENCES**

During construction of visitor facilities and parking areas, the following guidelines will be implemented.

- Implement a traffic control plan, as warranted. Standard measures include strategies to maintain safe and efficient traffic flow during construction.
- Implement measures to reduce adverse effects of construction on visitor safety and experience.
- Implement an interpretation and education program. Continue directional signs and education programs to promote understanding among national historic site visitors.

- Conduct an accessibility study to understand barriers to national historic site programs and facilities. Based on this study, implement a strategy to provide the maximum level of accessibility.

## **NOISE ABATEMENT**

Implement standard noise abatement measures during construction. Standard noise abatement measures could include the following elements: a schedule that minimizes impacts on adjacent noise-sensitive uses, the use of the best available noise control techniques wherever feasible, the use of hydraulically or electrically powered impact tools when feasible, and the location of stationary noise sources as far from sensitive uses as possible.

Mitigative measures would be applied to protect the natural sounds in the national historic site. Specific mitigative measures include:

- Implement standard noise abatement measures during national historic site operations. Standard noise abatement measures could include the following elements: a schedule that minimizes impacts on adjacent noise-sensitive uses, use of the best available noise control techniques wherever feasible, use of hydraulically or electrically powered impact tools when feasible, and location of stationary noise sources as far from sensitive uses as possible.
- Site and design facilities to minimize objectionable noise.

## **RELATIONSHIPS WITH THE SURROUNDING COMMUNITIES**

During the future planning and implementation of the approved management plan for Minuteman Missile National Historic Site, the National Park Service would work with local communities and county governments

to further identify potential impacts and mitigative measures that would best serve the interests and concerns of both the National Park Service and the local communities.

**SUSTAINABLE DESIGN  
AND AESTHETICS**

Projects would avoid or minimize adverse impacts on natural and cultural resources. Development projects (e.g., buildings, facilities, utilities, roads) and reconstruction projects (e.g., road reconstruction, building

rehabilitation, and utility upgrade) would be designed to work in harmony with the surroundings, particularly in national register properties. Projects would reduce, minimize, or eliminate air and water nonpoint-source pollution. Projects would be sustainable whenever practicable, by recycling and reusing materials, by minimizing materials, by minimizing energy consumption during the project, and by minimizing energy consumption throughout the lifespan of the project.

## FUTURE STUDIES AND IMPLEMENTATION PLANS NEEDED

After completion and approval of a general management plan for managing the national historic site, other more detailed studies and plans, including additional environmental compliance (National Environmental Policy Act, National Historic Preservation Act, and other relevant laws and policies), and public involvement, would be needed, as prescribed in *NPS Management Policies 2006* and *Cultural Resource Management Guideline* (DO-28).

Priorities for research would be based on the national historic site's primary purpose — to preserve and protect its historic structures and associated furnishings and artifacts while balancing opportunities for visitors to learn from and be inspired by them. To prevent significant long-term adverse impacts on the site and its resources, at least the following studies would be undertaken.

### SCOPE OF COLLECTIONS STATEMENT

This is the basic curatorial planning document required for the national historic site. A Scope of Collections Statement is a stand-alone museum planning document that succinctly defines the scope of the park's museum collection holdings at the present and for the future. The statement derives from the national historic site's mission, as well as laws and regulations mandating the preservation of collections. It is the critical basis for managing museum collections and may affect the collection of museum objects or their management and use. Evolving from legislation and planning documents specific to the national historic site, the statement guides acquisition and preservation of those museum objects that contribute directly to interpretation and understanding of the national historic site's themes, as well as any additional objects that the National Park Service is legally mandated to preserve. It defines the purpose and significance of the national historic site's

museum and archival collections; sets limits on collection size and quality by defining subject matter, geographical location, and time period for additions; and considers uses of the collection.

### COLLECTION STORAGE PLAN

A collection storage plan is a stand-alone document that guides collection storage at the national historic site. This plan might be prepared to solve one or more problems in an existing storage facility, to guide renovation of an existing space into a storage facility, or to guide design of a new storage facility. When appropriate, a recently prepared collection storage plan might be included as part of the collection management plan, which always addresses museum collections storage needs.

### COLLECTION CONDITION SURVEY

A collection condition survey is a tool rather than a specific plan. Conducted by a professional conservator, it reports the condition of all or part of a museum collection. It creates a baseline reference for future assessment of object deterioration and identifies objects in need of conservation treatment by degree of urgency. It is not to be used as a technical basis for conservation treatment of individual objects. Because of the wide variety of materials (e.g., paper, textiles, wood, metals, ceramics), more than one collection condition survey may be needed.

### HISTORIC FURNISHINGS REPORT

A historic furnishings report provides a history of a structure's use and documents the type and placement of furnishings to a period of interpretive significance. If a decision is made to furnish a historic structure, a detailed plan section lists each recommended item.

This report provides guidance for the care and maintenance of furnishings that are exhibited in the structure, including specific instructions for the care of newly acquired objects and recommendations for appropriate levels of historic housekeeping for interpretation.

### **HISTORIC STRUCTURE REPORT**

The historic structure report (HSR) is the primary guide to treatment and use of a historic structure. The report documents the evolution of a historic structure, its current condition, and the causes of its deterioration. It presents and evaluates alternative treatments for a historic structure. Emphasis is on preserving extant historic material and resolving conflicts that might result from a structure's "ultimate treatment."

A separate historic structure report is generally prepared for every major structure managed as a cultural resource. However, groups of similar structures or ensembles of small, simple structures such as antennae or recreational structures may be addressed in a single report. Restoration, reconstruction, or extensive rehabilitation of a structure should be undertaken to protect the historic structure, visitors, and NPS employees.

A structure report would be needed for the launch control facility support building to determine if there is sufficient structural support to carry the expected load (of increased visitor use). If there is insufficient structural support, mitigative measures would be taken to protect the structure, visitors, and NPS employees.

### **CULTURAL LANDSCAPE REPORT**

A cultural landscape report is the primary guide to treatment and use of a cultural landscape. Based on the historic context provided in a historic resource study, a cultural landscape inventory documents the characteristics, features, materials, and qualities that

make a landscape eligible for the National Register of Historic Places. It analyzes the landscape's development and evolution, modifications, materials, construction techniques, geographical context, and use in all periods, including those deemed not significant. Based on the analysis, it evaluates the significance of individual landscape characteristics and features in the context of the landscape as a whole. Typically interdisciplinary in character, it includes documentation, analysis, and evaluation of historical, architectural, archeological, ethnographic, horticultural, landscape architectural, engineering, and ecological data as appropriate. It makes recommendations for treatment consistent with the landscape's significance, condition, and planned use.

A cultural landscape report's scope and level of investigation will vary depending on management objectives. It may focus on an entire landscape or on individual features within it.

### **CULTURAL LANDSCAPE INVENTORY**

The cultural landscape inventory is a computerized, evaluated inventory of all cultural landscapes in which the National Park Service has or plans to acquire any legal interest. Its purpose is to identify cultural landscapes in the system and provide information on their location, historical development, character-defining features, and management. The inventory assists park managers in planning, programming, and recording treatment and management decisions. CLI forms, including maps, drawings, and photographs, are maintained at the support offices and the parks.

### **MISSILE SILO ASSESSMENT**

A structural and mechanical preservation assessment on missile silo would be needed to assess any water damage, prevent rust and mold, and condensation.



### **HEATING/AIR CONDITIONING EVALUATION**

An evaluation of the environmental conditions at the launch control facility support building, launch control center, and garage at Delta One would be needed to determine if a stable environment was being maintained that would protect the structure and its resources.

### **ULTRAVIOLET SCREENING EVALUATION**

An evaluation is needed to determine the necessity for ultraviolet screening for the launch control facility support building (Delta One) and for the launch facility support building (Delta Nine).

### **OTHER PLANS**

The following plans should also be completed to help implement the recommendations of this general management plan.

- collection and management plan (guides preservation of archival collections and museum objects)
- wayside exhibit plan (serves as a guide for developing exhibits that support the interpretive themes of the historic site)
- site administrative history (describes how the national historic site was conceived and established and how it has been managed up to now)
- historic structure preservation guide (ensures compliance with the NPS inventory and condition assessment program)



TABLE 10. SUMMARY OF ALTERNATIVES

	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<b>CONCEPT</b>	This alternative consists of a continuation of current management direction and trends at Minuteman Missile National Historic Site. It provides a baseline for comparison in evaluating the changes and impacts of the other alternatives. Visitors would find facilities much as they were when turned over to the National Park Service.	The concept of this alternative would be to <b>restore</b> the sites to their ready-alert/active duty appearance — i.e., before July 1991 when the START treaty was signed. The sites would present the Delta facilities as they were in full operation. Visitors could only access the Delta facilities via an approximately two-hour shuttle bus tour with reservations required.	The concept of this alternative would be to <b>rehabilitate</b> the sites to their stand-down appearance when the facilities were deactivated — (i.e., from the ratification of the START Treaty in October 1992 to the establishment of the national historic site by Public Law 106-115 in 1999). The sites would present the national historic site as a symbol of the United States' preparedness for nuclear attack. The concept under this alternative would be to provide a more museum-like experience of the Delta facilities. Visitors would access the sites via their personal cars; capsule tours would still be by reservation.	The concept of this alternative would be to <b>restore</b> Delta One to its ready-alert status (as in alternative 2) and <b>rehabilitate</b> Delta Nine (as in alternative 3) to its stand-down appearance. The facilities would be presented as symbols commemorating the history and significance of the Cold War, the arms race, and the intercontinental ballistic missile (ICBM) in the second half of the 20th century. Visitors would access Delta One only on a ranger-led tour and would be free to tour Delta Nine at their convenience. A shuttle system could be developed for tours of Delta One if visitation warranted.
<b>PRIMARY VISITOR FACILITY</b>	The project office (on private property south of exit 131) would continue as the visitor support facility and staff offices.	An 8,000-square-foot visitor/ administrative facility would be constructed south of exit 127 on Interstate 90 to provide a full range of visitor amenities.	A 10,000-square-foot visitor/ administrative facility would be constructed north of exit 131 on Interstate 90 to provide a full range of visitor amenities.	A 7,700-square-foot visitor/ administrative facility would be constructed north of exit 131 on Interstate 90 to provide a full range of visitor amenities. This facility would be built in two stages, the first stage being the visitor facility and the second being the administrative facility.
<b>RESOURCE CONDITIONS INSIDE THE SECURITY FENCES</b>	Only essential preservation and stabilization activities necessary to prevent further deterioration (such as mold and rust) would be performed on the structures. Minor damage that occurred during deactivation would remain. Major damage that occurred after deactivation would be repaired.	<p><b>Preservation/Learning Zone</b></p> <p>In this alternative the facilities would be restored to their ready-alert/active duty appearance. Most of the aboveground buildings, structures, capsule, and surfaces inside the chain-link security fences at both Delta One and Delta Nine would be in the preservation/learning zone. Restoration would allow as many historic items as possible to remain in their original locations. Damage that occurred during deactivation and mothballing would be repaired. Additional modifications to the buildings and structures for visitor safety and resource protection would be limited and reversible.</p> <p><b>Delta One.</b> Some original museum items would be returned to their original locations. Original items no longer available would be replaced in kind with similar items from other Minuteman facilities. Items most susceptible to deterioration would be replaced with replicas.</p> <p>The garage would contain original or in-kind vehicles and equipment.</p> <p>The grounds would be maintained to military standards.</p> <p><b>Delta Nine.</b> The viewing enclosure over the silo installed in 2002 would remain (to meet START treaty obligations). In specific areas overgrown vegetation would be eliminated, and the grounds would be maintained to military standards.</p>	<p><b>Self-Directed Zone</b></p> <p>In this alternative most of the aboveground buildings, structures, and surfaces inside the chain-link security fences at both Delta One and Delta Nine would be in the self-directed zone to allow many visitors to see the sites.</p> <p>This alternative would require rehabilitation to protect and preserve the resources. Damage that occurred during deactivation and mothballing would be repaired.</p> <p><b>Delta One.</b> The day room would be rehabilitated to allow for use of this room as a waiting area for a tour of the underground launch control center (capsule). Appropriate resource protection techniques would be used throughout the facility. Interior and exterior doorway barriers would permit seeing into the rooms.</p> <p>Fragile or irreplaceable original items would be displayed in the visitor facility and replaced on-site with reproductions, or would be protected by barriers around the items.</p> <p>The garage would contain original or in-kind vehicles and equipment. Protective barriers would be added to allow visitors to see but not touch the vehicles and to protect the vehicles from the weather.</p> <p><b>Delta Nine.</b> A second viewing enclosure would be placed over the support building to allow visitors to see the mechanical equipment below ground.</p> <p><b>Both Delta Facilities:</b> Routine grounds maintenance, snow removal, and repair activities would meet NPS standards.</p> <p><b>Preservation/Learning Zone</b></p> <p>As in alternative 2, the control room, elevator and underground control center (capsule) would remain in the preservation/learning zone. Original items would remain in place, and access would be provided only on a tour. No changes to the original fabric would be made in this zone.</p>	<p><b>Preservation/Learning Zone</b></p> <p><b>Delta One.</b> As in alternative 2, the facility would be restored to its ready-alert status. Most of the aboveground buildings, structures, capsule, and surfaces inside the chain-link security fence at Delta One would be in the preservation/ learning zone. Restoration would allow as many historic items as possible to remain in their original locations. Damage that occurred during deactivation and mothballing would be repaired. Additional modifications to the buildings and structures, for visitor safety and resource protection, would be limited and reversible.</p> <p>As in alternative 2, some original items would be returned to their original locations. Original items no longer available would be replaced with similar items from other Minuteman facilities. Items most susceptible to deterioration, such as magazines, drawings, and written logs, would be replaced with replicas.</p> <p>The garage would contain original or in-kind vehicles and equipment such as a Peacekeeper (security response vehicle), front-end loader, snow blower, and lawn mower.</p> <p>The grounds would be maintained to military standards.</p> <p><b>Self-Directed Zone</b></p> <p><b>Delta Nine.</b> There would be an option of placing an additional viewing enclosure over the support building to allow visitors to see the mechanical equipment below ground. This option would be exercised depending on funding.</p> <p>Routine grounds maintenance and repair would be performed in keeping with NPS standards.</p>

	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<b>RESOURCE CONDITIONS OUTSIDE THE SECURITY FENCES</b>	No changes would be made to the facilities other than those necessary for operational needs and visitor safety. Outside the security chain-link fence at both Delta facilities, cattle grazing (a historic use) would continue.	<p><b>Perimeter Zone</b></p> <p>Most of the grounds outside the security fence would be in the perimeter zone to protect the resources, maintain the historic landscape, and allow unsupervised visitor access into the area. Operational maintenance would occur routinely and reflect a military standard.</p> <p>Outside the security chain-link fence at both Delta facilities, cattle grazing (a historic use) would continue.</p> <p><b>Delta One.</b> The helipad would be repaired and repainted. The primary and secondary sewage lagoons would remain dry.</p> <p><b>Delta Nine.</b> Most of the grounds would continue to be maintained as grassland with cattle grazing.</p>	<p><b>Perimeter Zone</b></p> <p>Most of the grounds outside the security fence would be in the perimeter zone to protect the resources, maintain the historic landscape, and allow visitor access into the areas. The grounds and historic entrance roads would be maintained to NPS standards, and the county road would need to be modified for visitor safety.</p> <p>Outside the security chain-link fence at both Delta facilities, cattle grazing (a historic use) would continue.</p> <p><b>Delta One.</b> The helipad would be repaired and repainted. The primary and secondary sewage lagoons would remain dry.</p> <p><b>Delta Nine.</b> Most of grounds would continue to be maintained as grassland with cattle grazing.</p> <p>The county road would be improved to allow access to the parking lot. This action would be taken by the county.</p>	<p><b>Perimeter Zone</b></p> <p>Most of the grounds outside the security fence would be in the perimeter zone to protect the resources, maintain the historic landscape, and allow visitor access into the areas.</p> <p>Outside the security chain-link fence at both Delta facilities, cattle grazing (a historic use) would continue.</p> <p><b>Delta One.</b> The helipad would be repaired and repainted. The primary and secondary sewage lagoons would remain dry. Routine maintenance, repairs, snow removal, and groundskeeping would occur and reflect a military standard.</p> <p><b>Delta Nine.</b> Most of the grounds would continue to be maintained as grassland with cattle grazing. Routine maintenance, repairs, snow removal, and groundskeeping would reflect NPS standards.</p> <p>The county road would be improved to allow access to the parking lot. This action would be taken by the county.</p>
<b>VISITOR EXPERIENCE ON-SITE</b>	<p>Visitors would continue to find the facilities in their current condition. A reservation would continue to be required for tours, and tour capacity would continue to be six visitors plus an interpreter. The approximately two-hour tour would continue to start at the project office, and the group would car caravan (visitors using their own vehicles) to Delta One. After learning about Delta One, including the underground launch control center (capsule), the group would then caravan to Delta Nine. The tour would continue to be concluded after seeing the missile silo and site.</p> <p>Parking for passenger cars and short-term, administrative use would continue to be on the entrance roads at both Delta facilities. Parking for buses and recreational vehicles (RVs) would continue to be permitted on a case-by-case basis on the entrance roads.</p> <p>The chain link security gates at both Delta facilities would remain locked except during tours. There would be no staff on-site except during tours. Visitors could see the dry sewage lagoons and helicopter pad (Delta One) and the azimuth and HICS markers (Delta Nine) outside the chain-link fences.</p>	<p>Visitors would find the facilities as if military personnel were still on-site. Visitors would require reservations for about a two-hour shuttle tour of Delta One and Delta Nine. A shuttle would drop off 18 passengers at Delta One. The remaining shuttle passengers would continue on to Delta Nine. The shuttle would then return to Delta One, pick up those who had been dropped off initially, and then return to the visitor facility. All visitors would park at the visitor facility at exit 127 to begin their tour. Parking for buses and RVs would not be available at either Delta facility. A fee would be charged for the shuttle tours.</p> <p>Commercial tours and school groups would be able to access the Delta facilities only by reservation. Their visitor experience would be at the visitor / administrative facility.</p> <p>The chain-link security gates at both Delta facilities would remain locked except during shuttle tours.</p> <p><b>Delta One.</b> Visitors would see original or in-kind items. Items such as magazines, desk supplies, furniture, log books, typewriters, computers, keys, telephones, life support systems, the original code burner and in-kind or restored items (such as the flag pole, gas pump, and basketball hoop and pole), and period vehicles and equipment (such as a Peacekeeper, snow blower, front-end loader, and lawn mower) — all in the same location as they were before July 1991.</p>	<p>Visitors would experience the facilities as museum displays with minimal changes from their historic character. Visitors would be able to drive their personal cars to both Delta One and Delta Nine and take a leisurely self-directed tour. Regularly scheduled ranger-led tours would also be available. Tours for the underground control center (capsule), by reservation. The chain-link security gate at both sites would remain open during business hours. Interpretive rangers would be on-site.</p> <p>With reservations, commercial tours and school groups could receive aboveground tours (during the peak visitor season, this would likely be without entrance into any of the buildings).</p> <p><b>Delta One.</b> Visitors would see some original items. Many original/sensitive items would be on display at the visitor facility and would be replaced on-site by reproductions. Visitors could see into but not enter exterior and interior rooms. Throughout the site many of the resource protection strategies would be evident. Because visitors would be on a ranger-led tour, the control room, elevator, and underground capsule would contain original items, such as computers and life support systems.</p>	<p>Visitors would experience Delta One as if personnel were still on-site. Some museum objects would be in their original location. Visitors would experience Delta Nine as a static display.</p> <p>Visitors would drive to both Delta facilities until a shuttle system was developed; however, a shuttle system would not be used until visitation warranted.</p> <p><b>Delta One.</b> The chain-link security gate would remain locked during business hours except for tours. Visitors would need to make reservations for a tour of Delta One. Tours would include the underground control center (capsule). There would be no staff on-site except during tours. Once the shuttle system began operations, shuttle parking would be on the entrance road. A fee would be charged for the shuttle tours.</p> <p>Depending on circumstances, and with prior reservations, large groups such as commercial and school groups could be taken through the support building. An unpaved, secured parking area would be nearby. This parking area would be available, with administrative approval, primarily for those taking the aboveground tours —commercial tour buses, school buses, RVs, and passenger vehicles.</p> <p>As in alternative 2, at Delta One visitors would see original or in-kind items wherever possible. Items such as magazines, desk supplies, furniture, log books, typewriters, computers, keys, telephones, life support systems, the original code burner and in-kind or restored times (such as the flag pole, gas pump, and basketball hoop and pole), period vehicles and equipment (such as a Peacekeeper, snow blower, front-end loader, and lawn mower) would be in the same location as they were before July 1991.</p>

Table 10. Summary of Alternatives

	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<b>VISITOR EXPERIENCE ON-SITE (cont.)</b>		<b>Delta Nine.</b> Visitors would see original structures. Visitors could continue to see a missile through the existing viewing enclosure.	<b>Delta Nine.</b> Visitors would see original structures. Visitors could continue to see a missile through the existing viewing enclosure. A second viewing dome would allow visitors to see the inner workings of the underground support building.	<b>Delta Nine.</b> Visitors could drive their personal vehicles to Delta Nine for a self-guided tour. The chain link security gates would remain open during business hours. Scheduled ranger-led tours would be available at Delta Nine depending on staffing. At Delta Nine visitors would see original structures. Visitors could continue to see a missile through the existing viewing enclosure. If funding permits, a viewing enclosure could be placed over the underground support building so visitors could see the underground equipment.
<b>ON-SITE VISITOR FACILITIES</b>	There would continue to be no visitor support facilities at Delta One or Delta Nine.	There would be no on-site visitor facilities at either Delta facility.	At each Delta facility would be a nearby, small, staffed, visitor contact station with paved parking areas. Each contact station would contain interpretive/educational media, a staff office, and vault toilet. A hardened path would be available from the parking areas to the entrance gates, primarily for access by visitors with disabilities.	<b>Delta One.</b> An unpaved parking (accessed by permit only) would be available across the county road from Delta One. A hardened path, with traffic safety signs, would be available from the parking area to the entrance gate, primarily for access by visitors with disabilities.  <b>Delta Nine.</b> An unstaffed interpretive kiosk, vault toilet, and paved parking area would be available nearby. A hardened path would be available from the parking area to the entrance gate, primarily for visitors with disabilities.
<b>INTERPRETATION</b>	Basic interpretive publications would continue to be available at the project office, and there would be a small outdoor display at the project office for after-hours visitors. There would continue to be no interpretive signs or media at the Delta facilities for drop-in visitors who were unaware that reservations were required for tours or who arrived after hours.	At the primary visitor facility, interpretation and education programs would evoke an emotional understanding of the daily role of the military personnel who were stationed at the Delta facilities and the potential of the technology to effect total destruction or serve as a deterrent during the Cold War. Displays and exhibits would be mostly audiovisual media, oral histories, some original items, small-scale models, and replicas. There would be various exhibits, films, and “virtual” tours provided at the visitor facility, and on the national historic site web site. On the shuttle tour visitors would receive orientation and scene setting, including information on safety and resource protection.  <b>Both Delta Facilities.</b> There would be no staff on-site except during tours. Visitors would be with an interpretive ranger at all times. Minimal interpretive and safety signs would be installed on the historic entrance roads to provide information to drop-in visitors	At the primary visitor facility, interpretation and education programs would provide the in-depth story of the heroic efforts made to construct the nation’s Cold War defense system. Displays and exhibits would include many original items. Interpretation and education programs would evoke an understanding of the national investment made in facilities and technology as well as the support of and sacrifices made by community residents, and construction employees in defense of the nation.  <b>Delta One.</b> Interpretive/educational information would be available at the visitor contact station, which would be staffed. Extensive interpretive, directional, and safety information would be installed throughout the site, but mostly near the parking area and visitor contact station.  <b>Delta Nine.</b> Extensive interpretive, directional, and safety information would be installed throughout the site, but mostly near the parking area and visitor contact station.	At the primary visitor facility, interpretation and education programs would provide the story of the facilities’ relationship to the international Cold War story. Interpretation would evoke an understanding of the operational character of the sites as the United States’ commitment to the mission of maintaining world peace. Interpretation and education programs would provide the in-depth story of the daily life of the personnel stationed at the Delta facilities and would be mostly audiovisual media. There would be various exhibits, films, and “virtual” tours provided at the visitor facility, and on the national historic site web site. On the shuttle tour visitors would receive orientation and scene setting, including information on safety and resource protection.  <b>Delta One.</b> There would be no staff on-site except during tours. There would be no interpretive or safety signs inside the security fence. Visitors would be with an interpretive ranger at all times. Minimal interpretive and safety signs would be installed on the historic entrance roads to provide information to drop-in visitors.  <b>Delta Nine.</b> Extensive interpretive, directional, and safety information would be installed throughout the site, but mostly near the parking area, and interpretive kiosk.
<b>ETHNOGRAPHIC RESOURCES AND MUSEUM OBJECTS</b>	Ethnographic materials such as oral histories and remembrances of the missileers and workers associated directly with the Minuteman Missile system would continue to be accepted as opportunity and funding permit. However, no active acquisition efforts would be made.  Some on-site museum objects would remain in their historic locations at the Delta facilities; some original collection items, especially those that are at high risk for deterioration, would be removed for their protection. Storage/curation would occur at the Badlands National Park curatorial facility.	Ethnographic materials such as oral histories and remembrances of the military personnel and workers directly associated with maintaining the alert status of Delta One and Nine would be accepted and actively collected.  Most museum objects would be returned to the national historic site. Some of these items would be put in their original locations on site, and some would be displayed in or retained for curation in the visitor facility. Other items would be placed in the NPS curatorial facility at Badlands National Park. Some items that are at high risk for deterioration would receive curatorial treatment.	Ethnographic resources, such as oral histories and remembrances of military personnel and workers associated with maintaining the alert status of the Minuteman Missile system throughout the United States would be accepted and actively collected.  Some museum objects would be returned to their historic locations. Many museum objects would be on display in the visitor facility. Other items would be stored in the curatorial area of the visitor facility or at the Badlands curatorial facility.	Ethnographic materials, such as oral histories and remembrances of those military personnel and workers associated with the activities historically related to the Cold War as it affected the U.S., the Soviet Union, and the rest of the world, would be accepted and actively collected.  Most museum objects would be returned to their historic locations. Some museum objects would be on display in the visitor facility. Other museum objects would be stored in the curatorial area of the visitor facility or at the Badlands curatorial facility.

	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<b>STAFFING</b>	To implement this alternative, staff would need to include about eight full-time-equivalent staff members:	To implement this alternative, staff would need to include about 19 full-time-equivalent staff members.  Operational base funding may not be immediately available for staffing increases when the plan is finalized. If this is the case, staffing increases and the actions these additional employees would accomplish would have to be phased in as future funding becomes available.	To implement this alternative, staff would need to include about 20 full-time-equivalent staff members.  Operational base funding may not be immediately available for staffing increases when the plan is finalized. If this is the case, staffing increases and the actions these additional employees would accomplish would have to be phased in as future funding becomes available.	To implement this alternative, staff would need to include about 14.75 full-time-equivalent staff members.  Operational base funding may not be immediately available for staffing increases when the plan is finalized. If this is the case, staffing increases and the actions these additional employees would accomplish would have to be phased in as future funding becomes available.
<b>BOUNDARY ADJUSTMENTS</b>	There would no boundary adjustments under this alternative.	A boundary adjustment at the national historic site would be needed to transfer up to 25 additional acres for the visitor / administrative facility and shuttle support at exit 127 from the U.S. Forest Service to the National Park Service.  There would also be up to a 420-acre boundary adjustment surrounding Delta One on three sides to protect the historical landscape of agricultural uses and prairie grasslands.  Congressional legislation would be needed for these boundary adjustments.	Boundary adjustments would be needed for transferring up to 25 additional acres at exit 131 for the visitor / administrative facility, and up to 5 acres at Delta Nine for education/interpretation from the U.S. Forest Service to the National Park Service.  There would also be up to a 420-acre boundary adjustment surrounding Delta One on three sides to protect the historical landscape of agricultural uses and prairie grasslands.  Congressional legislation would be needed for these boundary adjustments.	Boundary adjustments would be needed for transferring up to 25 additional acres at exit 131 for the visitor/ administrative facility and shuttle support from the U.S. Forest Service to the National Park Service.  There would also be up to a 420-acre boundary adjustment surrounding Delta One on three sides to protect the historical landscape of agricultural uses and prairie grasslands.  Congressional legislation would be needed for these boundary adjustments.
<b>PARTNERSHIPS</b>	A formal agreement would be established with the Air and Space Museum at Ellsworth Air Force Base in Rapid City to complement both NPS and Air Force programs. Visitors would continue to be referred to the museum on an individual basis. If visitors cannot go into the launch control center (underground) capsule because of accessibility issues or due to increased visitation, the Air and Space Museum offers a silo and an accessible control center (capsule). Those with past military experience, especially former Air Force personnel, would also continue to be referred to the museum. The national historic site would continue to carry the museum's pamphlet, and information concerning the museum is in the national historic site's brochure.	Same as alternative 1 plus the following:  Wayside exhibits, bulletin boards, and site bulletins would also contain information about the museum. Air and Space Museum assets, such as the <i>Missile Procedures Manual</i> and the missile transporter-erector vehicle, would be interpreted by exhibits at the national historic site. These exhibits would also tell visitors that they could see these resources first-hand at the museum. Museum visitors would in turn learn about national historic site resources through their interpretive programs and media.	Same as alternative 2.	Same as alternative 2.
<b>Total Annual Operating Costs*</b>	<b>\$ 624,000</b>	<b>\$1,118,020</b>	<b>\$ 1,134,782</b>	<b>\$ 982,248</b>
<b>Total One-Time Costs*</b>	<b>\$1,035,248</b>	<b>\$9,011,372</b>	<b>\$10,754,054</b>	<b>\$8,895,818</b>

\*More detailed plans or studies will be required before most conditions proposed in the alternatives are achieved. The implementation of any alternative (approved plan) also depends on future funding, environmental compliance, and NPS priorities. This plan does not guarantee that funding and staffing will be forthcoming. The plan establishes a vision of the future that will guide day-to-day and year-to-year management of the national historic site, but full implementation could take many years.

**TABLE 11. SUMMARY OF KEY IMPACTS OF IMPLEMENTING THE ALTERNATIVES**

Note: The levels of impacts described below would not be sufficient to constitute an impairment of national historic site resources or values.

	ALTERNATIVE 1, NO ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4, PREFERRED
<b>CULTURAL RESOURCES</b>				
<b>Historic Buildings and Structures</b>	<p>Continuing current management practices would have no adverse effect on historic structures.</p> <p>Implementing the no-action alternative would contribute only slightly to the overall adverse cumulative effects on the historic structures in the area.</p>	<p>Alternative 2 visitation levels would be expected to increase over the current management practices. Guided ranger tours would provide a high level of control of visitor movement. Visitation would be expected to increase the impact on floor coverings, walls, and museum objects because of increased dust, opening and closing of doors, and oils from visitors' hands. Such actions would be discouraged by NPS rangers, would be mitigated by greatly increased monitoring and maintenance, and result in no adverse effect.</p> <p>Some changes and additions could be made to upgrade the heating/air-conditioning system in the garage at Delta One. No adverse effects from these modifications would result because they would not diminish the character-defining features of the buildings.</p> <p>In alternative 2, a greater number of actions would be undertaken to restore the historic conditions of the buildings and structures than in alternative 1, which would be expected to result in no adverse effect. Actions associated with this alternative would not contribute any adverse effects to the adverse cumulative effects on the historic structures in the area.</p>	<p>Adverse effects on buildings and structures would be expected to result if installation of significant protective barriers at Delta One were to occur. The continued potential for a greater level of impacts on structures through touching, playing on structures, and other visitor contact would be expected compared to alternative 1. Impacts would be expected to result in adverse effects from the installation of ramps or other special alterations for access by visitors with disabilities.</p> <p>Installing a viewing enclosure on the launch support building at Delta Nine would directly impact the historic conditions of the structure and result in adverse effects.</p> <p>The impacts resulting from implementing this alternative would contribute a substantial portion of the overall adverse cumulative effects on the historic structures in the area.</p>	<p>Alternative 4 visitation levels would be expected to substantially increase over current levels. In addition, construction alterations resulting from changes to environmental control systems at Delta One to accommodate the increased visitor level associated with this alternative would result in no adverse impacts.</p> <p>Guided tours at Delta One would provide a high level of control of visitor movement. However, continuing visitation would be expected to increase the impacts on floor coverings and walls. These impacts would be mitigated by ranger supervision, information at the visitor facility, and maintenance activities, and would thus have no adverse effect.</p> <p>Although the cumulative impacts would be adverse, alternative 4's contribution to these impacts would be minimal.</p>
<b>Cultural Landscapes</b>	<p>Continuing current management practices would not contribute adverse effect on the cultural landscapes at either of the Delta facilities. Although the cumulative impact would be adverse, the implementation of this alternative would not contribute any adverse impacts to the adverse cumulative impact.</p>	<p>Returning structures to their historic condition would help restore the landscapes to conditions more consistent with their historic circumstances. Overall the effects to the two Delta facilities from implementing this alternative would not be adverse.</p> <p>Although the cumulative impacts would be adverse, the implementation of alternative 2 would not contribute to the adverse cumulative impacts.</p>	<p>Altering the cultural landscape from their its historic condition, for example by adding parking areas, visitor contact stations, interpretive signs, and permanent ramps for visitors with disabilities, would adversely affect the integrity of the cultural landscapes. Overall the impacts on the two Delta facilities from implementing this alternative would be adverse.</p> <p>Overall the cumulative adverse impacts would be expected to be slightly greater than the no adverse effects; alternative 3 would contribute substantially to these adverse cumulative effects.</p>	<p>Changes occurring to the cultural landscapes in the region would have some adverse effects, while the changes resulting from NPS actions would also have a generally adverse effect on the cultural landscape. Cumulatively, these sets of impacts would have an adverse effect.</p>
<b>Ethnographic Resources</b>	<p>Because acceptance of ethnographic data would occur, impacts on ethnographic resources would be long term, minor, and beneficial.</p> <p>There could also be long-term moderate to major adverse impacts because of the lack of a formal program of outreach and the advancing age of those who could contribute oral histories and the subsequent lost opportunities to collect them.</p> <p>There would be no cumulative impacts resulting from the implementation of this alternative.</p>	<p>Because oral histories and remembrances of those who worked and served at the Delta facilities would be actively collected, impacts on ethnographic resources resulting from implementation of this alternative would be expected to be long term and moderately beneficial.</p> <p>There would be no cumulative impacts resulting from the implementation of this alternative.</p>	<p>Because oral histories and remembrances of those who worked and served at the Delta facilities would be actively collected, impacts on ethnographic resources resulting from implementation of this alternative would be expected to be long term and moderately beneficial.</p> <p>There would be no cumulative impacts resulting from the implementation of this alternative.</p>	<p>Because oral histories and remembrances of those who worked and served at the Delta facilities would be actively collected, impacts on ethnographic resources resulting from implementation of this alternative would be expected to be long term and moderately beneficial.</p> <p>There would be no cumulative impacts resulting from the implementation of this alternative.</p>

	ALTERNATIVE 1, NO ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4, PREFERRED
<b>Museum Collection/Objects</b>	The no-action alternative would result in long-term minor beneficial impacts. Implementation of the alternative would contribute somewhat to the overall minor beneficial cumulative impacts on museum objects.	The impacts on museum objects from implementing alternative 2 would be minor and beneficial.  The overall cumulative effects would be minor, beneficial, and long term; however, this alternative's contribution to these cumulative effects would be sizeable.	Implementation of alternative 3 would have substantial long-term minor to moderate beneficial effects on museum objects primarily due to secured storage and curation.  The cumulative effects would be long term, minor to moderate, and beneficial. This alternative's contribution to these cumulative effects would be substantial.	Implementation of alternative 4 would have substantial long-term minor to moderate beneficial effects on museum objects, primarily due to secured storage and curation.  The effects of the past, present, and reasonably foreseeable actions by others would be long term, minor to moderate, and beneficial. This alternative's contribution to these cumulative effects would be substantial.
<b>NATURAL RESOURCES</b>				
<b>Air Quality</b>	Alternative 1 would have no impact on the national historic site's air quality.  Although there would be moderate adverse cumulative impacts, alternative 1 would have only a slight contribution to this overall cumulative impact.	Alternative 2 would result in negligible, short-term, adverse impacts on air quality, primarily due to construction activities. A major, long-term, adverse, cumulative impact to regional air quality would be likely due to emissions from sources outside the national historic site, although the incremental contribution of alternative 2 to this impact would be negligible and short term.	Alternative 3 would result in negligible, short-term, adverse impacts on air quality, primarily due to construction activities. A major, long-term, adverse, cumulative impact on regional air quality would be likely due to emissions from sources outside the national historic site, although the incremental contribution of alternative 3 to this impact would be negligible and short term.	Alternative 4 would result in negligible, short-term, adverse impacts on air quality, primarily due to construction activities. A major, long-term, adverse, cumulative impact on regional air quality would be likely due to emissions from sources outside the national historic site, although the incremental contribution of alternative 4 to this impact would be negligible and short term.
<b>Vegetation</b>	There would be no new impacts on the national historic site's natural vegetation under alternative 1. There would be minor adverse long-term cumulative impacts on native vegetation largely due to actions occurring outside the national historic site.	This alternative would result in impacts on vegetation through the construction of the visitor / administrative facility, which would have minor, long-term, adverse impacts on vegetation in a localized area. Similarly, there would be adverse minor to moderate, long-term cumulative impacts due largely to actions occurring outside the national historic site.	This alternative would result in impacts on vegetation through the construction of the visitor / administrative facility and parking area and two visitor contact stations and parking areas, which would have minor, long-term, adverse impacts on vegetation in a localized area. Similarly, there would be adverse minor to moderate, long-term cumulative impacts due largely to actions occurring outside the national historic site.	This alternative would result in impacts on vegetation due to the construction of visitor facilities and parking areas, which would have minor, long-term, adverse impacts on vegetation in a localized area. Similarly, there would be adverse minor to moderate, long-term cumulative impacts due largely to actions occurring outside the national historic site.
<b>Wildlife</b>	Alternative 1 would be expected to have a negligible, short-term, adverse impact on national historic site wildlife populations in localized areas, primarily from disturbance by NPS staff. Negligible cumulative impacts would be expected.	The alternative would have negligible to minor, long-term, adverse impacts on wildlife due to the construction of the new visitor / administrative facility. There would be potential for a minor, long-term, adverse cumulative impact on wildlife in the area due to increased habitat fragmentation and wildlife displacement; however, the actions in alternative 2 would add only a slight increment to these cumulative impacts.	The alternative would have minor, long-term, adverse impacts on wildlife due to the construction of new visitor facilities and parking areas. The alternative would have the potential for a minor, long-term, adverse cumulative impact on wildlife in the area due to increased habitat fragmentation and wildlife displacement.	The alternative would have minor, long-term, adverse impacts on wildlife due to the construction of the new visitor facilities and parking areas. The alternative could have a minor, long-term, adverse cumulative impact on wildlife in the area due to increased habitat fragmentation and wildlife displacement.
<b>VISITOR USE AND EXPERIENCE</b>				
	Because of the mothballed appearance and limited interpretation and visitor access to the Delta facilities, the overall quality of the visitors' experiences and the potential for understanding the national historic site would be very limited. This would constitute a major adverse impact on visitors. The cumulative impacts on visitors would be long term, minor, and beneficial; impacts from implementing alternative 1 would comprise most of these effects.	Restoring the historic Delta sites to their active duty (ready-alert) condition and providing personal service interpretation for visitors would provide high-quality experiences and much interpretive depth. This would be a moderate to major beneficial effect for visitors. This would be counter-balanced if some visitors were unable or unwilling to participate on the guided tours or only experienced seeing one of the two Delta facilities on the tour. This would constitute a major adverse impact for some visitors, which would be mitigated by the quantity, quality, and variety of exhibits, films, and "virtual" tours provided at the visitor facility and on the national historic site web site.  There would be a long-term major and beneficial cumulative effect for visitors. The impacts of alternative 2 would comprise most of this beneficial cumulative effect.	The compromised authenticity of the historic facilities in this alternative would be a minor adverse impact on visitor experience. Otherwise, major beneficial effects would result because visitors would be able to tour both facilities at their own pace and within their own time constraints, or with reservations, go on a guided tour of the control center capsule at Delta One, or see the displays and information at the visitor facility. There would be a wide range of interpretive and experience opportunities that would appeal to most visitors and would be a moderate to major beneficial effect.  There would be a long-term, moderate and beneficial cumulative effect for visitors. The impacts of alternative 2 would comprise most of this beneficial cumulative effect.	This sense of seeing Delta One "as it really was" would appeal to most visitors, and those who take a guided tour of the Delta One site would benefit from the attention of an NPS interpreter. This would be a major beneficial impact for most visitors. The wide range of options for visiting and learning about the sites would appeal to most visitors and would be a major beneficial effect. The richness of interpretation in this alternative would be a major beneficial impact for visitors on the tours, and on-site interpretive media and interpretive programs at the visitor/ administrative facility would be a moderate beneficial effect on visitors.  There would be a long-term, major, and beneficial cumulative effect for visitors. The impacts of alternative 2 would comprise most of this beneficial cumulative effect.



Table 11. Summary of Key Impacts of Implementing the Alternatives

	ALTERNATIVE 1, NO ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4, PREFERRED
<b>SOCIOECONOMIC ENVIRONMENT</b>	<p>The national historic site would have a negligible long-term impact on the regional socioeconomic environment because relatively few people would spend time and money in the area.</p> <p>The financial impacts on the three-county regional economy would be beneficial but negligible due to the size of the regional economy, the low magnitude of expenditures, and few new job opportunities resulting from stabilizing and protecting the national historic site.</p> <p>The total costs of implementing alternative 1 would be about \$1,659,248. A few individuals and companies would benefit from visitation to the national historic site and their associated spending in the area. Funds spent by staff at the national historic site (although a long-term benefit) would have only a negligible impact on the local economy.</p> <p>The cumulative impacts on the regional economy would be long term, negligible, and beneficial because it is a small site competing with numerous other regional attractions.</p>	<p>Development of the national historic site would have some minor, long-term, beneficial impact on the touring public and the tourism industry because more people would have the opportunity to visit Delta One and Delta Nine than under the no-action alternative. A few individuals would benefit from the employment opportunities at the national historic site. The funds spent for construction of the visitor/administrative facility and to develop, staff, operate, and maintain the national historic site would be \$10,129,392. Funds spent on development would be short-term expenditures; and money spent on labor and benefits would be long-term fiscal commitments by the National Park Service.</p> <p>The financial impacts on the three-county regional economy would be beneficial but minor due to the size of the regional economy and the relatively low magnitude of expenditures and the small number of job opportunities resulting from developing the national historic site (\$2.4 billion in earnings and nearly 68,700 jobs in 2004). The national historic site would be expected to have only a minor beneficial impact (during both the short and long term) on the local economy and socioeconomic factors such as population, income, employment, and earnings.</p> <p>Some beneficial, minor long-term cumulative impacts on the tourism industry would result because the resources and features of Delta One and Delta Nine would be open to the public.</p>	<p>Development of the national historic site would have some minor long-term beneficial impacts on the touring public and the tourism industry because more people than under the no-action alternative would have the opportunity to visit Delta One and Delta Nine. The funds spent for construction of facilities and to develop, staff, operate, and maintain the national historic site would be about \$11,888,836.</p> <p>The financial impacts on the three-county regional economy would be beneficial but minor due to the size of the regional economy (\$2.4 billion in earnings and nearly 68,700 jobs in 2004) and the relatively low magnitude of expenditures and few job opportunities resulting from developing the national historic site. This minor long-term beneficial impact on the local economy would contribute relatively little to improve the regional socioeconomic factors such as population, income, employment, and earnings.</p> <p>Some minor long-term beneficial impacts on the tourism industry would result because the national historic site would be open to the public.</p>	<p>Development of the national historic site would have some minor long-term beneficial impacts on the touring public and the tourism industry because a larger number of people than under the no-action alternative would have the opportunity to visit the sites. The funds spent to construct the visitor/administrative facility and staff and operate the national historic site for would be about \$9,878,066.</p> <p>The financial impacts on the three-county regional economy would be beneficial but minor due to the size of the regional economy (\$2.4 billion in earnings and nearly 68,700 jobs in 2004) and the relatively low magnitude of expenditures and few job opportunities resulting from developing the national historic site. The funds spent to construct facilities and operate and staff the national historic site would have only a minor impact on the local economy and provide a minor long-term beneficial effect on socioeconomic factors such as population, income, employment, and earnings.</p> <p>Some minor, long-term, beneficial cumulative impacts on the tourism industry would result because the national historic site would be open to the public.</p>
<b>NPS OPERATIONS</b>	<p>The no-action alternative would have a major long-term adverse effect on the overall management of the national historic site because as visitation increases the facilities and staffing levels would be insufficient to provide adequate operation needs and protect the resources. Future visitation could cause moderate to major long-term adverse cumulative impacts on NPS operations and budget because staff and facilities would be inadequate to provide visitor amenities and services to these visitors.</p>	<p>The impacts of implementing this alternative on NPS operations would be moderate, long term, and beneficial. The impact would only be moderate because it would require a high level of staff effort to maintain Delta One and Nine as restored sites, maintenance requirements for outdated utility systems, and high costs for obtaining electricity and water.</p> <p>There would be a minor long-term adverse cumulative impact on NPS operations and budget.</p>	<p>The impacts of implementing this alternative on NPS operations would be minor to moderate, long term, and adverse. The impact would be minor to moderate because this alternative would require maintaining the highest number of dispersed facilities, which would incur more communication and logistic problems; increases in maintenance at the Delta facilities because of the number of new elements introduced for visitor and resource protection; and it would require support of the most unescorted visitors at the Delta facilities.</p> <p>There would be a minor long-term adverse cumulative impact on NPS operations and budget.</p>	<p>The overall impacts of implementing this alternative would be moderate to major, long term, and beneficial because staff would only be making a shorter (4-mile round-trip tour) than in alternative 2 and would be providing a high level of on-site visitor support and resource protection. Visitors on-site at the Delta One facility would be accompanied by a ranger, which would reduce operation needs. Installing modern utility systems would improve efficiency and reduce maintenance. Not having a staffed facility at either Delta facility would reduce maintenance and operations compared to alternatives 2 and 3.</p> <p>There would be a minor long-term adverse cumulative impact on NPS operations and budget.</p>



## ALTERNATIVES AND ACTIONS CONSIDERED BUT NOT EVALUATED

The planning team considered other actions and alternative concepts for managing the national historic site, but these were eliminated from further analysis.

A Cold War Partnership alternative was intended as a partnership connecting national and international Cold War sites. However, analysis showed that in this alternative the on-site activities at the national historic site would remain the same as for alternative 2 or alternative 3. The expansion of interpretation to cover the entire Cold War and various sites and an increase in partnerships could occur under either alternative 2 or alternative 3. Consequently, this alternative was dismissed from further consideration because it was duplicative of the other alternatives and not a distinct alternative on its own.

A Beginning of the Cold War alternative was intended to return the site to its appearance in the 1960's era when the missileers were actually stationed at the site during the early years of the Cold War. However, the support building area was refurbished some time after the Cold War, and there are no physical resources from 1960 remaining (e.g., furniture or vehicles). Therefore, this alternative could not be implemented.

Other actions not analyzed in detail because they were found not viable or feasible or they would result in unacceptable impacts are discussed below.

### **ESTABLISH A JOINT VISITOR CENTER WITH BADLANDS NATIONAL PARK**

The planning teams for both the Badlands National Park and Minuteman Missile National Historic Site general management plans analyzed the possibility of creating a joint visitor facility at Badlands National Park. However, the expansion of the Badlands Ben

Reifel Visitor Center was already underway, dollars had already been committed, and re-planning the visitor center space to incorporate adequate space for Minuteman Missile National Historic Site exhibits, sales, staff, and other needs into the Ben Reifel expansion at that late stage in planning would require a substantial cost. Also, the visitor center expansion would need to be large enough to be a major part of the visitor experience for Minuteman Missile National Historic site visitors because of the limited space at Delta One and Delta Nine to accommodate visitors — which would also be costly.

The idea of creating a joint visitor center was also dismissed because visitors to Minuteman Missile National Historic Site would have to travel from exit 131 to the Badlands visitor facility and return to exit 131 (and beyond if they wanted to see Delta One and/or Delta Nine), resulting in at least an 18-mile round trip — an unacceptable inconvenience.

Lastly, to get to the joint visitor center in Badlands National Park from exit 131, visitors must go over Cedar Pass. Cedar Pass has failed once and has been stabilized; however, this pass is expected to fail again. If the pass failed again, visitors could not get back to Minuteman Missile National Historic Site from the joint visitor center, and visitors would also be prevented from getting to the joint visitor center from exit 131. Should the pass fail again, both park system units will revisit the need for a joint visitor center.

### **REFILLING THE SEWAGE LAGOON AT DELTA ONE**

The planning team considered refilling the primary sewage lagoon at Delta one, consistent with alternatives that would restore this facility to its ready-alert status. The only

available water at Delta One is in a well that the U.S. Air Force drilled more than 50 years ago. This well is more than 1,000 feet deep, and the water is no longer potable or useable for fire suppression. In addition, if refilled, the water would infiltrate into the soil and/or evaporate quickly, thus requiring frequent refilling that would be extremely costly and a waste of this natural resource in an environment where water is scarce. Although there was a clay liner in the lagoon, refilling would likely require costly repairs to the liner and this would not prevent evaporation. A filled

lagoon could also be a public safety issue and would have to be protected with a fence that would likely not be compatible with how the lagoon looked during its ready-alert status (a barbed wire fence). Consequently, in all alternatives the sewage lagoons at Delta One would remain dry because this would not be a long-term sustainable use of groundwater resources. (Water for fire suppression at Delta One, incidentally, would be provided through underground water tanks and pumps.)

## ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is defined by the Council on Environmental Quality as the alternative that best meets the criteria or objectives set out in section 101 of the National Environmental Policy Act. The identification of the environmentally preferred alternative is that which best meets the following requirements:

### CRITERION 1

Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

In consideration of being a trustee of the natural environment, alternative 1, or the no-action alternative, best meets the intent of criterion 1 over the other alternatives. Alternative 1 maintains minimal or no-action at Delta One or Delta Nine. The other alternatives have, in varying degrees, some development or alterations of the natural environment. Alternative 2 restores the sites with manipulation of the natural environment in favor of the military grounds. Alternatives 2, 3, and 4 include development of a new visitor center/ administrative facility onto the prairie grasslands.

### CRITERION 2

Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

Alternatives 2, 3, and 4 meet this criterion above alternative 1. In varying degrees, Alternatives 2, 3, and 4 ensure increased opportunities for visitation and interpretation to the public beyond the no-action alternative. The three alternatives additionally improve access at the sites,

account for safety improvements, and restore/rehab the sites for a culturally meaningful experience. Alternatives 2, 3, and 4 provide accommodations for visitors with disabilities and alterations for a safe visit. Although alternative 2 ensures the most realistic scene inside the military compounds, alternatives 3 and 4 ensure the best conservation of the cultural landscape outside the compounds.

### CRITERION 3

Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

Alternative 2 provides the greatest protection of the cultural facilities but provides a limited range of visitor uses. The no-action alternative limits the level of protection the National Park Service can afford to the site. Although both alternatives 3 and 4 reach the largest amount of visitors, the visitor experience strategies in alternative 3 allow for more open visitation parameters at the site that may translate into more degradation, risk, and unintended consequences. Therefore alternative 4 meets the elements of this criterion more than the other alternatives.

### CRITERION 4

Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

Alternative 1 preserves the natural environment more than the other alternatives but limits the level of preservation for the

cultural resource. Although alternative 2 best preserves the cultural facilities, it may not preserve the cultural or natural environment beyond the compounds. Both alternatives 1 and 2 limit the amount of visitor choice. Both alternatives 3 and 4 ensure the least disturbance to the cultural scene. In regards to both preservation of resource aspects and providing for diversity of choice, however, alternative 3 meets this criteria more than the other alternatives.

renewable resources or cultural facilities. Although alternative 2 maximizes the conservation of the cultural facilities, it does not for the cultural landscape. Alternative 3 lessens the conservation of the cultural facilities. The quality of the natural environment is most enhanced, and cultural landscape protection is maximized through the combined management zones and visitor center/ administrative facility location of alternative 4.

### CRITERION 5

Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

The preferred alternative, alternative 4, balances management of the resources, visitor experience, access, and other considerations more than the other three alternatives. Conservation, or wise resource use, is most achieved through the management zones in alternative 4.

### CRITERION 6

Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative 1 produces the least disturbance on the natural environment but also provides no elements to enhance the natural resource or recycle the non-

### SUMMARY

In determining the environmentally preferred alternative, all six of the criteria produce scores for the four alternatives; no one criterion favors all of the alternatives equally. Therefore, all of the criteria made a difference in identifying the environmentally preferred alternative (see table 12 below). Alternative 4 satisfies most of the six criteria described above and fully meets more of the requirements than the other alternatives. Its total score surpasses the other alternatives in realizing the full range of national environmental policy goals in section 101. In particular, alternative 4 attains the widest range of beneficial uses of the environment without degradation and health or safety risk (criterion 3), achieves the best balance between population and resource use (criterion 5), and enhances the quality of renewable resources while attaining the maximum recycling of non-renewable resources (criterion 6).

**TABLE 12. ENVIRONMENTALLY PREFERRED ALTERNATIVE ANALYSIS**

The environmentally preferred alternative is defined by the Council on Environmental Quality as the alternative that best meets the criteria or objectives set out in section 101 of the National Environmental Policy Act. The identification of the environmentally preferred alternative is that which best meets the following requirements:

Criteria	Alternatives			
	1	2	3	4*
1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.	2*	1*	1	1
2. Ensure safe, healthful, productive, and aesthetically and culturally pleasing surroundings for all Americans.	1	2	2	2
3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.	1	1	1	2
4. Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.	1	1	2	1
5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.	1	1	1	2
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.	1	1	1	2
Total Points	7	7	8	10

\*1 = This is given to the alternative that somewhat meets the criteria.

\*2 = This is given to the alternative that fully meets the intent of the criteria.

Elements that were not environmentally sound were eliminated from consideration.







**CHAPTER 3:  
AFFECTED  
ENVIRONMENT**

MISSILE SILO IMPLOSION, SOUTH DAKOTA



DELTA ONE LAUNCH CONTROL CENTER  
WITH CREW



MINUTEMAN MISSILE IN SILO



## INTRODUCTION

This chapter describes the existing environment of Minuteman Missile National Historic Site and the surrounding region. It is focused on the park resources, uses, facilities, and socioeconomic characteristics that have the potential to be affected if the alternatives were implemented.

There are few currently available sources of information on the natural, cultural, and human environment of Minuteman Missile

National Historic Site. Verbal conversations with USAF personnel who were involved in the deactivation program and had extensive knowledge of the site's history were invaluable. The following are some of the other resources that were used in preparing this chapter.

*NPS Special Resource Study, 1996*

*NPS Alternative Transportation Study, 2003*

## HISTORICAL OVERVIEW

### PREHISTORY

Archeological records suggest that the first human activity in this region began about 11,000 years ago. Current theories suggest that this occurred following the migration of Asiatic people across the Bering Strait (Berengia) and the gradual warming of the northern part of the continent. This allowed for a melting of the polar ice caps and a passageway between the northern polar cap. Estimates vary considerably as to the first occupation of North America; the latest estimates suggest a time around 10,000 years ago.

Disagreeing with the archeological findings, many Native Americans maintain through their creation accounts that their people originated in North America. For the Lakota of the Great Plains who live in the western South Dakota area, creation stories place their early ancestors near Wind Cave in the Black Hills, Mille Lacs in Minnesota, or as far east as North Carolina. Whatever the truth of the origin of the native peoples may prove to be, the evidence is clear that over time the technology of original inhabitants of western South Dakota changed during the Archaic, Woodlands, and Mississippian periods because each exhibits technological advancement over the previous period.

### European Contact Period (1500s to 1600s)

At the time of the arrival of the Europeans in North America, the Sioux (the name given to them by the French through an inaccurate translation from Objiway) lived in the Mille Lacs Minnesota region. With the arrival of the Europeans, it is generally accepted that the Lakota, Nakota, and Dakota began to migrate west. Those living in the South Dakota area, and possibly only slightly more recently than the Sioux, included the Mandan, Arikara, and

Hidatsa along the Missouri River. These three tribes began to adopt both a horticultural subsistence system and a periodic hunting tradition. Others residing in the western plains with a nomadic existence include the Crow, Pawnee, Cheyenne, and Arapaho. It appears that the former two tribal peoples (Crow and Pawnee) became enemies of the Lakota as they migrated west, while the Lakota formed alliances with the Cheyenne and Arapaho upon their migration to the western plains of South Dakota.

### PERIOD OF AMERICAN WESTWARD MIGRATION

With the growing thrust of westward migration, the native peoples of western South Dakota were forced to deal with American federal officials. Beginning with the Fort Laramie treaty of 1851, general regions of activity for Indian people were established. Numerous treaties and agreements were negotiated establishing ever-diminishing areas for the Lakota. Finally, the Agreement of 1889 broke up the Great Sioux Reservation into six smaller reservations including Standing Rock, Cheyenne River, Lower Brule, Crow Creek, Rosebud, and Pine Ridge Reservations.

Archeological and paleontological studies of the Badlands had already begun before the transfer of lands to federal jurisdiction. Following his study of the regions, paleontologist Dr. Hiram A. Prout of St. Louis published the first accounts of Badlands fossils in 1846. By 1924 the South Dakota School of Mines and Technology began the first systematic study and collection of Badlands fossils. Archeological study of the South Unit began in 1905 with the work of Sheldon and carried on through Hughes in 1949.

## RECREATION AND TOURISM

The scenic and scientific significance of the Badlands region has long been known. In 1900 the area's scenic qualities and attractions for tourists were described in *Outing*, a popular recreational journal. The importance of the area as an economic resource was recognized by the South Dakota legislature when it petitioned the federal government to set aside a township in the Badlands region for a national park as early as 1909. On March 4, 1929, Congress authorized establishment of Badlands National Monument (45 Stat. 1553), comprising some 50,830 acres, provided that South Dakota acquired certain private lands within the proposed boundaries and constructed a scenic road through the area.

By 1939 the required land acquisition and scenic road construction had been completed by the state of South Dakota. On January 25, President Franklin D. Roosevelt issued Presidential Proclamation 2320 establishing Badlands National Monument comprising approximately 150,000 acres. Boundary adjustments in 1952 and 1957 reduced the area of the monument to 111,529.82 acres. Public Law 90-468 enacted on August 8, 1968, again adjusted the boundaries of the national monument by authorizing acquisition of certain lands of outstanding scenic and scientific character for inclusion in Badlands National Monument, but limiting the total monument area to some 244,000 acres. These lands were part of the former Badlands Gunnery Range and were in the boundaries of the Pine Ridge Indian Reservation.

## WORLD WAR II

During World War II, the U.S. Army took possession of 341,726 acres of land in the northwest section of the Pine Ridge Reservation for use as an aerial gunnery and bombing range to train pilots operating from Ellsworth Air Force Base near Rapid City. (Local people were forced to leave the region with a one-month warning to gather their

belongings.) Included in this range were 337 acres from Badlands National Monument. Land was purchased or leased from individual landowners and the Oglala Sioux Tribe to clear the area of human occupation. For safety purposes, 125 families were relocated from their farms and ranches in the area during the 1940s. This land was used extensively from 1942 through 1945 as an air-to-air and air-to-ground gunnery range as well as for precision and demolition bombing exercises. After the war, the South Dakota National Guard used portions of the bombing range as an artillery range. In 1968 most of the range was declared excess property by the U.S. Air Force. Although 2,500 acres are retained by the Air Force, the area is no longer used for military exercises. Scattered artifacts associated with the gunnery and bombing range may be found throughout the Badlands National Park and are especially concentrated in the Stronghold District. Low circular mounds that appear to have been targets for Air Force gunners survive on Stronghold Table, and exploded and unexploded ammunition and ordnance are abundant.

## DEVELOPMENT AND DEPLOYMENT OF THE MINUTEMAN MISSILE

On October 4, 1957, the Soviet Union successfully launched into orbit the world's first artificial satellite, Sputnik. With Sputnik the Soviets demonstrated their ability to propel a missile toward a target thousands of miles away. Four years earlier the Soviets exploded the H-bomb. By combining these two technologies, a Soviet missile could deliver a nuclear bomb to an American city in less than an hour.

Sputnik sparked the development and deployment of the Minuteman missile. But the origins of the Minuteman missile program were deeply rooted in the years immediately following World War II when the world's two superpowers began to engage in the spiraling arms race of the Cold War.

Originally known as Weapon System Q, this missile became officially designated as Minuteman in September 1957. The idea was to base Minuteman ICBMs in unmanned, hardened, and dispersed silos that were linked electronically to a series of launch control facilities.

In 1958, General Curtis LaMay, Air Force Vice Chief of Staff, wrote on the military's "fourfold" deployment strategy for land-based missiles. Not only were the missiles to be deployed for the most effective coverage of enemy targets, they were also to be located far enough inland to be out of range of Soviet submarines, and their location had to minimize the danger to the people of the United States. Hence, the Upper Great Plains region was an ideal choice for the missile fields.

The Air Force successfully tested the first full-scale model Minuteman missile from a silo on September 15, 1959. This test featured a tethered prototype missile blasting out of its silo. The Air Force conducted its first "all up" test of a Minuteman missile in February 1961. The Minuteman program entered a new phase in 1962 when the operational testing and development program began at Vandenburg Air Force Base.

Even as the Minuteman program moved forward, the Air Force began developing improved versions of the missile. The original missile, eventually dubbed Minuteman I, was developed in two versions. Minuteman I was the first missile. A flawed first stage of this missile substantially reduced its range and prompted the production of the Modified Minuteman I or Minuteman "B." In 1962 the Air Force awarded the Boeing Company a contract to develop the Minuteman II. Also known as Minuteman "F," the Minuteman II had a larger second-stage engine, an improved guidance system, greater range (about 7,000 miles) and payload capabilities, more flexible targeting, and an increased capability of surviving an attack.

Between 1962 and 1967 the Air Force installed 1,000 Minutemen in underground launch silos dispersed predominantly throughout the high plains of the central United States. During the Cuban Missile Crisis in 1962, the first 10 of 150 Minuteman missiles being deployed at Malmstrom Air Force Base, Montana, were placed on alert. The original installation consisted of 150 underground missile silos (launch facilities) and 15 launch control facilities, dispersed over an area of nearly 19,000 square miles.

The Air Force organized its Minuteman force into six wings. Early Air Force plans called for the construction of Minuteman facilities dispersed at SAC installations around the country. However, the early Minuteman "A" had a range of only 4,300 miles, forcing the Air Force to base the missile at SAC installations in the western United States to bring the missiles closer to their targets in the Soviet Union. The increased range of subsequent versions of the Minuteman gave the Air Force more latitude in choosing basing locations. Each Minuteman wing was composed of either three or four fifty-missile squadrons, with each squadron being further divided into five flights of ten missiles. A Minuteman flight consisted of a launch control center and 10 unmanned launch facilities. Each launch facility was located a minimum of 3 miles from its launch control center and from other launch facilities. This dispersal ensured that a single enemy warhead could not destroy multiple missile sites.

The first Minuteman squadron facilities, located at Malmstrom Air Force Base, were completed in September 1961. In 1961 construction began on the missile fields in South Dakota. By October of 1963, the South Dakota wing of Minuteman ICBMs was fully operational, including Delta One and Delta Nine. The launch control facility and launch control center (Delta 01) and the launch facility (Delta Nine) of Delta Flight, were activated as part of the 66th Strategic Missile

Squadron, 44th Strategic Missile Wing, based at Ellsworth Air Force Base in South Dakota.

### **Minuteman Construction**

The responsibility for constructing the Air Force's Minuteman launch facilities fell to the Army Corps of Engineers. Between 1961 and 1966 this office oversaw the construction of 1,000 Minuteman silos and their launch control facilities at existing SAC installations. One of the nation's larger construction firms, Peter Kiewit Sons from Omaha, Nebraska, provided the low bid out of four submittals in 1961, and construction of the Delta One and Delta Nine facilities was completed by 1963.

Compared to the earlier construction of Atlas and Titan facilities, construction of Minuteman facilities was far less complicated and costly. The relatively simple design of the Minuteman and its use of solid fuel eliminated much of the special construction required for the liquid-fueled missiles. Consequently, Minuteman facilities could be built using prefabricated components and assembly line construction.

### **Improvement and Modification Programs**

The Air Force initiated several programs through the years that have improved the survivability and effectiveness of its Minuteman force. These programs include the Minuteman integrated improvement program in the 1970s, the Minuteman Integrated Life Extension program in the 1980s, and the most recent Rapid Execution and Combat Targeting (REACT) program in the 1990s.

Costing about \$2.3 billion, the Minuteman integrated improvement program began in the early 1970s and greatly reduced the vulnerability of the Minuteman force. Measures implemented during the improvement program included hardening the ultra high

frequency antennas at the silos; installing debris bins at the edge of the launch closures to keep post-attack debris from falling into the silo; installing boron-impregnated concrete and seals around the edge of the closures to shield the silos from radiation and electromagnetic pulse; fitting silos with new missile and equipment suspension systems to reduce the vulnerability of the missile in its silo to vibrations and shaking; reducing the launch system power requirements and thereby increasing the potential life of the system's batteries; fitting the missiles with new command data buffers that allowed the Air Force to retarget the missiles more quickly; and modifying the launch enclosure actuator equipment to more effectively plow through post-attack debris.

The Minuteman Integrated Life Extension program was a \$493 million effort to extend the operational service life of the aging Minuteman system. Begun in 1985, this program included the reconditioning or modification of the standby diesels, shock isolators, communications, environmental control systems, electrical surge arrestors, power filters and capacitors, guidance control amplifiers and control valves, guidance and control cooling systems, and the environmental control system fan motor bearings.

The REACT program, begun in the early 1990s, was aimed at upgrading and modernizing the Air Force's launch control centers to make them supportable into the next century. The program is also a response to SALT I treaty requirements and ICBM fleet restructuring. This effort encompassed the following improvements: launch control center integration, rapid message processing, rapid retargeting, weapon system controller replacement, and missile procedures trainer computer replacement.

The nation's Minuteman force stood at 1,000 until 1986 when the Air Force deployed 50 MX Peacekeeper ICBMs in modified

Minuteman II silos at F .E. Warren Air Force Base under its Strategic Modernization Program. This action reduced SAC's Minuteman force to 950 (450 Minuteman IIs, 500 Minuteman IIIs). It stayed at this level for the next five years. In 1991 President George Bush and Soviet President Mikhail Gorbachev signed the Strategic Arms Reduction Treaty (START). START called for each country to reduce its nuclear arsenal by about 30% over a span of seven years. In compliance with START, President Bush ordered the Air Force to begin removing all 450 of its Minuteman II ICBMs from operational alert. During the next three years, Air Force crews removed the Minuteman II ICBMs from their silos, explosively demolished the upper 6 meters of the silos, filled in with rubble, filled in the elevator shafts, and filled the launch control centers with rubble and concrete.

The solid-fueled Minuteman ICBM formed the backbone of the Air Force's land-based ballistic missile arsenal since the early 1960s. Standing alert in hardened, dispersed,

underground silos, these missiles were capable of being launched almost instantaneously. By ensuring a swift and devastating response to aggressive attacks on the United States or its allies, Minuteman ICBMs have been perceived as a major factor in preventing a deadly nuclear confrontation during the Cold War.

In September 1991 all 450 of the nation's Minuteman II missiles, including the Delta One and Delta Nine facilities, were taken off alert. In 1993 both facilities were deactivated and placed in "caretaker" status pending the outcome of determinations necessary leading to its status as a national park system unit. The following year Delta One and Delta Nine were converted to static displays to ensure that they were no longer functional. At Delta Nine the conversion included installation of a viewing enclosure. An actual Minuteman II training model of a missile (TMOM) was formally converted to a static display and placed in the Delta Nine silo.



## CULTURAL RESOURCES

Cultural resources at Minuteman Missile National Historic Site include archeological resources, historic buildings and structures, cultural landscapes, ethnographic resources, and museum objects/collections. Both Delta facilities are listed in the National Register of Historic Places as a historic district. The initial listing occurred in 1999 after the national historic site was established, and in October 2003 a nomination was prepared by Mead & Hunt, Inc., to provide background documentation.

### ARCHEOLOGICAL RESOURCES

Relatively little is known about the prehistory of the Badlands region of South Dakota in the vicinity of Minuteman National Historic Site. The little that is known, however, is derived mostly from limited archeological survey work conducted at Badlands National Park a few miles south of the national historic site.

Most of prehistoric archeological resources in Badlands National Park consist of bison bones, scorched rock from fire rings, lithic debitage, and occasional pottery. Much of this material is found on the eroded toes of dissected sod tables that form much of the Badlands landscape. The dense grassy caps that cover much of the region surfaces in the national park make visibility poor. Some sites indicate repeated short-term occupation along the edges of the Badlands Wall where water and shelter from trees made habitation more favorable. Historic archeological sites in Badlands National Park include abandoned homestead/ranching sites dating from the 1870s to the mid-1910s. Features at these sites include remnants of structures, wells, cisterns, wagon trails, and roads.

During 1961 to 1963 when construction of the Minuteman Missile facilities occurred, no cultural resource laws were in place requiring

consideration of the effects of construction on archeological sites. As a result it is unknown whether any archeological materials were present. Extensive construction excavation was carried out to construct the missile silos, subterranean launch control facilities, and support structures. Consequently, if any archeological sites had been present at the time, the level of construction earth-moving at the facility would have destroyed those sites. As a result of this construction, knowledge of the possibility of archeological materials predating construction is nonexistent.

The two proposed locations for the visitor/administrative facility are in areas that were not impacted during the construction of the Minuteman Missile facilities and may contain archeological resources. These two areas are managed under the authority of the U. S. Forest Service as part of the Buffalo Gap National Grasslands. No surveys have been undertaken to ascertain the presence or absence of archeological or other cultural resources. To determine if any such resources are present, it will be necessary to conduct archeological surveys of the area finally selected for a visitor / administrative facility before development plans and construction move forward.

### HISTORIC BUILDINGS AND STRUCTURES

In accordance with the terms of the 1991 Strategic Arms Reduction Treaty (START), the United States was allowed to display a deactivated missile and associated launch facilities. As a result, Delta One and Delta Nine were selected to be converted to a static display. Changes and upgrades to historic buildings and structures have been continuing at both installations since their construction in 1962 (e.g., installation of the ISST antenna system, television satellite dish, and

installation of steel siding). Nevertheless, most of the original design elements remain intact and those changes that have occurred were undertaken by the US Air Force.

An actual training model Minuteman II missile was permitted and was placed in the silo. Other changes undertaken since the stand down from operational status are primarily limited to the introduction of a dry pipe fire sprinkler system and changes to locks and door handles on all doors at Delta One, smoke and motion detectors, and a security monitoring system.

The overall integrity of the Minuteman Delta One and Delta Nine facilities is remarkable. As the result of what was in effect a phased decommissioning process, the facility progressively moved from an active status to being placed in a caretaker condition. The result of this phased closedown was to continue basic Air Force oversight of the facilities, including basic maintenance requirements and “active” conditions that would allow for reactivation of the facility, if necessary. With exceptions of military necessity resulting from the START treaty, conditions comparable to being in active status were largely maintained up to the point of deactivation and acceptance by the NPS as a national historic site. The Resources maps are keyed to the following discussion and numbers.

### **Delta One Launch Control Facility**

**General Description.** Minuteman launch control facility Delta One occupies an open, grassy 6.35-acre track of land. The terrain at the site rises gradually towards the north. A barbed wire farm fence is outside a chain link security fence that is topped with strands of barbed wire. A gently curving asphalt driveway that runs from the nearby county road to the east side of the tract provides access to the site and parking for four cars. The driveway passes over a steel cattle guard and through a padlocked chain-link sliding

gate in the security fence. For purposes of this general management plan, the primary constructed features associated with Minuteman site at both the Delta One and Delta Nine installations are considered buildings, while constructed features exterior to the buildings are considered structures. Buildings at Delta One include the aboveground launch control facility support building that houses the support machinery for both the living facilities and underground launch control center, and the garage. Structures at this site include antennas, fuel and water tanks, volleyball courts, and a flagpole. Detailed descriptions are provided in the following discussion.

**1. Launch Control Facility Support Building (building).** The launch control facility support building, built in 1961-62, is the most prominent surface feature at the site. Just inside the sliding gate, the support building is an unpretentious, one-story, ranch-style structure. It is of conventional wood-frame construction and has a low-pitched, side-gabled roof. The building is oriented along a northeast-southwest axis, with its principal elevation facing toward the southeast. A wide, asphalt parking/ turnaround area extends along the south side. In plan view the building is generally rectangular, measuring about 33 feet wide and 128 feet long. The south wall projects forward near the east end to form a wide bay for the security control center. A gable-roofed, one-story mechanical wing extends from the building's east end. The wing is also rectangular, measuring about 21 feet deep and 34 feet long.

The support building rests on a concrete slab foundation. The outer walls are sheathed with wide-lap, steel, clapboard-style siding embossed with a wood-grain pattern. The siding is painted light tan. It was installed in the mid-1970s to replace the cement-asbestos siding. The roof has minimal overhangs and is covered with brown, asphalt, T-lock shingles. There are large sheet metal ventilator hoods in the roof and back wall of the mechanical wing, and several smaller ventilator hoods project

from the roof of the main building above the kitchen and utility rooms. There are steel, ogee-profile gutters at the eaves. Fascia boards, gutters, and verge rafters are painted dark brown.

Windows in the support building have 1/1 double-hung, vinyl-clad wood sash fitted with white combination storm/screen units. These windows were installed in the mid-1970s to replace the building's original wood sash windows. Although most of the windows are arranged in groups of two or three, the security center windows are placed closely together, forming a nearly continuous band that extends across the south wall and wraps around the east and west sides of the bay.

The building's main entrance is in the south elevation, adjacent to the security control center bay. The glazed entry door opens into a narrow hallway that leads to a spacious day room and dining and recreational space for crewmembers. A kitchen and pantry are built into the northwest corner of the building. A doorway at the west end of the room opens into a long central hallway flanked by seven bedrooms, men's and women's latrines, and a linen closet and storage room. The women's latrine is on the north side of the hall, adjacent to the kitchen. It was added in the mid-1980s when the Air Force began to assign women to the duty roster at the Minuteman sites.

A doorway on the east side of the main entrance hall opens directly into the security control center. This room served as headquarters for the Security Police who maintained a constant vigil over the facilities of Delta Flight. Stretched beneath the windows inside the center is a desk-like console containing telephone and radio equipment. An expanded-metal cage set into one corner of the room provided storage for small arms. A small enclosed vestibule behind the security center served as the sole access point to the underground launch control center elevator shaft.

The wing on the east end of the support building originally contained a single-stall garage and two mechanical equipment rooms. The garage was enclosed in 1975 and converted into an exercise room. The equipment rooms contain a diesel-fueled generator for emergency power as well as air-conditioning and filtration equipment for the launch control center.

Floors in the residential areas of the support building are covered with indoor-outdoor carpet. Floors in the kitchen, mechanical rooms, and utility areas are covered with vinyl-asbestos and asphalt tile. Interior walls and ceilings throughout the support building are sheathed with gypsum wallboard. Walls in residential areas also have wainscoting of pre-finished hardboard or varnished wood. The east wall of the dayroom is decorated with a large mural depicting a woodland scene. The kitchen walls are covered with melamine panels. Rooms in residential areas have suspended acoustical tile ceilings with recessed fluorescent lighting fixtures.

**2. Underground Launch Control Center (building).** About 32 feet beneath the support building is the launch control center. The buried pill-shaped launch control center features a boxlike acoustical enclosure suspended by shock isolators inside a thick, blast-proof outer structure constructed of steel-reinforced concrete. This blast-hardened center was used to house two-person Air Force crews and specialized equipment for monitoring and launching the 10 dispersed missiles of Delta Flight.

The control center is entered through a 10-foot-square, reinforced-concrete access shaft that descends from a small vestibule at the back of the aboveground security center. The shaft contains a small elevator and a steel-rung ladder surrounded by an open safety cage. The elevator can accommodate approximately seven people. The base of the shaft opens into a low-ceilinged vestibule (tunnel junction) that angles sharply toward the east. This

vestibule provides swing space for a seven-ton, steel-and-concrete blast door that seals the entrance to the control center.

A small sign on the wall of the vestibule marks the beginning of the control center's ultra-high-security "no-lone zone." Anyone entering the launch control center was to be accompanied by another individual who could monitor for any unauthorized actions. A piece of artwork on the blast door serves as a darkly humorous reminder of the control center's ultimate purpose.

The blast door can be opened only from inside the control center. Twelve hydraulically operated latch pins around its perimeter secure the door. When these pins retract, the door swings open on massive roller-bearing hinges to reveal a low, tunnel-like passageway leading to the launch control center.

The launch control center itself consists of two separate structural elements, nested one inside the other. On the outside is a protective shell, shaped like an enormous gelatin capsule. The shell is 29 feet in diameter and 54 feet in length (outside dimensions). It is constructed of heavily reinforced concrete, with walls 4 feet thick. Its interior surface is lined with 1/4-inch thick steel plate. Suspended inside the shell is a box-like acoustical enclosure containing the launch control consoles, communications equipment, missile monitoring equipment, and accommodations for the two-person Air Force launch crew. The area between the suspended enclosure and the concrete shell is referred to as the "rattle space," and is generally hidden from view and difficult to access.

The roughly rectangular acoustical enclosure is about 11 feet wide and 28 feet long. It rests on a 12-foot by 32-foot, steel-framed platform. Each corner of the platform is connected to a large pneumatic cylinder called a "shock isolator." The shock isolators hang from heavy chains attached to the ceiling of the shell and are designed to let the enclosure

move as much as 2 feet in any direction without damage. An articulated, steel-plate bridge spans the gap between the platform and the access tunnel.

The floor of the acoustical enclosure is made of removable steel plates covered with sheet vinyl. A strip of light brown carpet lies over the floor plates. Compartments beneath the floor contain survival equipment, emergency batteries, and a motor-generator. The walls and ceilings of the enclosure are made of hollow-walled, perforated steel panels filled with sound-absorbing material. A beige fabric headliner is attached to the ceiling framework with Velcro. The headliner was installed in 1990 to help reduce noise levels inside the enclosure. Four recessed fluorescent lighting fixtures centered in the ceiling illuminate the enclosure's interior. Adjustable spotlights mounted on the ceiling provide task lighting. Virtually every surface inside the enclosure is painted pale green.

The control center contains two desk-like steel consoles about 12 feet apart. In front of each console is a swiveling, high-backed, aircraft seat fitted with seat belts and a shoulder harness on a steel track attached to the floor. The launch control (commander's) console is at the east-end of the acoustical enclosure, directly opposite the entrance. It has an illuminated panel that allowed the crew commander to continually monitor the operational and security status of each of the 10 missiles and launchers in Delta Flight. The communications control (deputy commander's) console is centered against the south wall of the enclosure. It contains an array of radio, telephone, and decoding equipment that enabled the crew to communicate with other launch control facilities, base headquarters, and the Strategic Air Command. At one side of each console is a small panel containing a spring-loaded, key-operated launch switch. The keys to these switches were kept in a padlocked, red steel box mounted above the deputy commander's console.

Lining the walls of the acoustical enclosure are heavy aluminum electronic racks filled with computer equipment, radio transmitters and receivers, a telephone relay system, and a power control panel. The acoustical enclosure is also equipped with a stainless steel latrine, a small refrigerator/microwave oven unit, and a curtained sleeping compartment. The sleeping compartment was installed in the early 1990s to replace a freestanding military cot that had occupied the same space.

An escape tube angles upward from the east end of the launch control center and consists of a corrugated steel culvert, 3 feet in diameter. The tube is plugged at its lower end, and filled with sand to prevent it from collapsing.

**3. Garage/vehicle support building (building).** Standing near the northwest corner of the launch control facility support building is a large vehicle storage building. This structure was built in 1968 to provide a heated parking for vehicles and equipment.

The storage building is a one-story, three-stall, wood-frame garage with a low-pitched, front-gabled roof. The rectangular building is about 32 by 40 feet. The garage is built on a concrete slab. Its outer walls are sheathed with wide-lap, steel, clapboard-style siding with an embossed wood-grain texture. The siding is painted light tan. The roof has slight overhangs and is covered with brown asphalt lock shingles.

The building's main (southeast) elevation has a large central garage door opening flanked by two slightly smaller openings. Each of the three openings contains an insulated steel overhead door with horizontal flush panels.

The building's interior walls are sheathed with hardboard panels. The ceiling is insulated but not finished. Steel pipe columns between the bays provide additional structural support for the roof. There is a small enclosed furnace room in the northwest corner of the building.

An enclosed tool storage room was built along the building's back wall about 1986.

**4. Hard HF Transmit Antenna (structure).** The blast-hardened HF (high frequency) transmit antenna is near the east side of the compound. This structure consists of a cylindrical, reinforced concrete, underground silo, about 11 feet in diameter by 38 feet deep. The well of the silo contains a telescoping, four-sided radio antenna made of trussed steel tubing. This antenna could extend to a height of 120 feet. Below ground, the structure is sealed from the environment.

**5. Hardened High-frequency (HF) Receive Antenna (structure).** The hard (high frequency) receive antenna is set into the ground about 160 feet south-southeast of the support building. This structure is a cylindrical, reinforced concrete structure measuring about 16 feet in diameter and 37 feet deep. A concrete cap covers the silo. Distributed evenly around the perimeter of the structure are five small ports, each containing a slender, ballistically actuated steel monopole antenna. Below ground the structure is sealed from the environment.

**6. Hardened UHF Antenna (structure).** The hardened ultra-high-frequency antenna stands near the southwest corner of the support building. Base records indicate that this antenna was installed by the Motorola Company in 1976. The antenna consists of a massive, cast-steel frustum bolted to a thick, reinforced concrete slab 16 feet square. Surmounting the frustum is a white fiberglass conical, weather dome. Below ground, the structure is sealed from the environment.

**7. Survivable Low Frequency Communication System (SLFCS) (structure).** This antenna is a subterranean feature located outside the chain-link fence line and between the asphalt entry road and the chain-link fence. The antenna is a donut-shaped structure about 8 feet in diameter.

**8. Super High Frequency Satellite System (ISST) (structure).** This antenna system is at the rear of the support building and is a steel tower topped by a white radome. This is the ground-based component of a satellite communication system that translates SHF to UHF signals coming from the satellite system to the underground launch control center. The system was used as a stopgap measure during an upgrade planned for an older system that was not implemented before deactivation.

**9. Helicopter Pad (structure).** A large helicopter pad is outside the security fence south of the support building. The pad consists of a flat concrete slab 50 feet square, surrounded on all sides by a wide shoulder of asphalt. The pad was built in 1970 to supplant a smaller landing area that was on the north side of the access road.

**10 a and b. Sewage Lagoons (structures).** Just outside the security fence, about 240 feet southeast of the support building, are two large sewage lagoons used for treating waste materials produced at the launch control facility. They have both been emptied and are now dry. Until 1970 what is now the primary sewage lagoon was the only sewage lagoon at the installation. It is an open settling basin, 118 feet square, surrounded by an 8-foot-high earthen berm. In 1970/1971 a secondary lagoon was added at the southeast corner of the original structure. Although it is similar in construction to the original pond, the secondary lagoon is irregular in plan and considerably larger than the earlier basin.

**11. Security Fence/Sliding Gate (structure).** All of the structures and buildings at Delta One are surrounded by a security fence. The fence is of standard chain-link construction. The fence is capped by outward directed outriggers with three strands of barbed wire strung between each supporting pole around the perimeter of the fence. A sliding gate is at the point where the fence crosses the entrance road. The gate is not motorized and must be

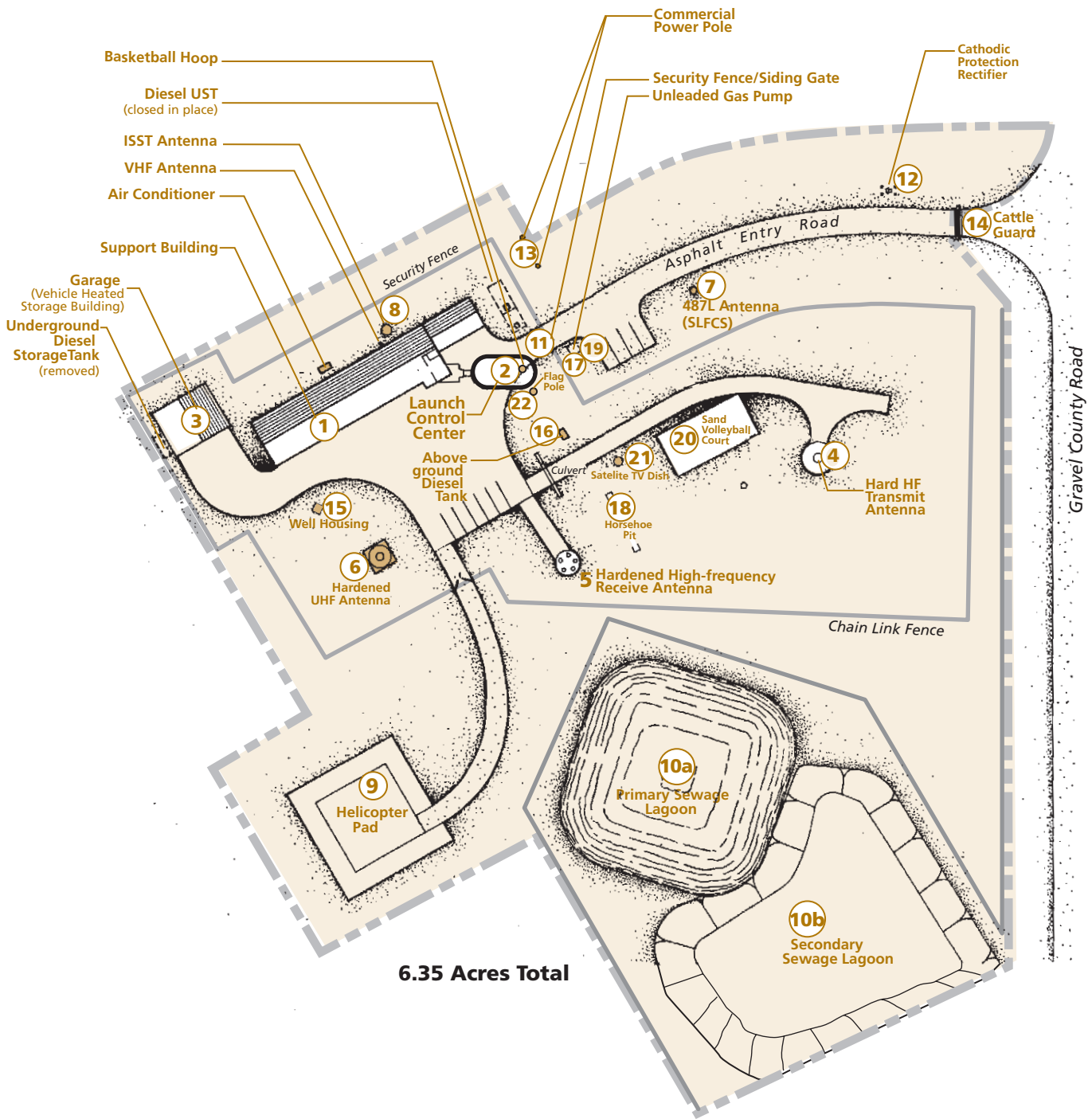
opened by hand but has an electric latch that is remotely operated from the security control center.

**12. Cathodic Protection Rectifier (structure).** Its purpose is to change DC current to the anode impressing current in opposition to the direction of natural current flow, thereby resisting corrosion buildup on subsurface metal components. The cathodic protection rectifier consists of two parts. The surface component contains the rectifier and electrical anode terminal connections in two boxes. These boxes are in turn attached to a wooden post, which is protected at each corner by square posts. This structure is adjacent to the gravel entry road. The second component is an anode well adjacent to the post and box structure. This subterranean feature contains 12-carbon anodes about 3 inches in diameter and 60 inches long set in a 230-foot-deep well and covered by a steel manhole cover.

**13. Utility Poles (structure).** Two utility poles are associated with the complex and were used in conjunction to provide external commercial power to the Delta One facility. The first holds electrical power transformers and was constructed by West River Electrical Association Inc. The second is directly adjacent to the first and was constructed by the U.S. Air Force as part of the Delta One facility.

**14. Cattle Guard (structure).** This is a typical cattle guard structure used to inhibit the access of cattle across the open unfenced strip of the asphalt entry road. The guard is at the intersection of the entrance road and the gravel county road.

**15. Well Housing (structure).** This is the water source for the facilities' domestic water. The well pit is a 6-foot deep underground concrete structure that is about 5 feet square



North



## Cultural Resources Delta One Launch Control Facility

MINUTEMAN MISSILE NATIONAL HISTORIC SITE  
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topped by dual doors consisting of 5/16-inch diamond tread steel plate.

**16. Diesel Tank (structure).** The 550-gallon tank is adjacent to the gravel parking area and along an old and indistinct drive used for access to the tank. The drum is on top of a 7-foot steel stand. Through gravity feed the tank dispensed diesel fuel to military vehicles.

**17. Gas Pump (museum object).** The gas pump has been returned to its original location. It dispensed unleaded gasoline from a 1,850-gallon underground storage tank to military support vehicles. It is located immediately outside the main gate along the asphalt entry road.

**18. Horseshoe Pit (structure).** The horseshoe pit is a recreational structure. It consists of two iron stakes set into the ground with about 1 foot exposed. Three circular logs are around each of the posts, with the fourth side open to the opposite stake and pit. The horseshoe pit is overgrown with grass and weeds.

**19. Basketball Hoop (structure).** The basketball hoop is a recreational object at the edge of the parking area, about 15 feet inside the main gate. It is a steel post with a typical hoop and backboard all set into a used tire filled with concrete and a foam pad wrapped around the base of the pole.

**20. Volleyball Court (structure).** The volleyball court is between the primary living structure and the sewage lagoons. It is an undeveloped court consisting of a sand surface and supports for raising a net at the centerline of the court. The boundary of the court has been defined with weathered 2x6 boards. Originally sand, this area had also overgrown with weeds and grass.

**21. Satellite TV Dish (structure).** The satellite TV dish was used for television reception at the facility. It is about 25 feet east of the chain-link fence at the gate at the point

of the external parking area. The dish is about 8 feet in diameter and set on a round steel post.

**22. Flagpole (structure).** The aluminum flagpole associated with the facility has been returned to its original location.

**Fire Suppression System.** Before the facility was turned over to the National Park Service, the National Park Service and the U.S. Air Force installed fire suppression systems throughout the launch control facility support building structures. Operational upgrades, consistent with military standards, were continued, because at the time it was unknown whether the Minuteman Missile program would be reactivated or decommissioned. A fire detection and dry pipe sprinkler system was the main upgrade that occurred. To fully implement the system and protect structures from fire, it will be necessary to provide a sufficient water supply or additional water storage capacity for the system.

### **Delta Nine Launch Facility**

The unmanned launch facility Delta Nine is about 11 miles west-northwest of launch control facility Delta One and holds one deactivated Minuteman missile. The facility occupies part of an open, grassy 1.5-acre tract of land straddling Pennington County Road T512, about 0.5 mile west and south of Interstate 90 exit 116. The tract is roughly rectangular and gradually slopes toward the northeast.

All of the structures and buildings at Delta Nine are surrounded by a security fence. The standard chain-link fence is capped by outward directed outriggers with three strands of barbed wire strung between each supporting pole around the perimeter of the fence. The swinging, padlocked, double gate where the fence crosses the gravel entrance road must be opened by hand. Near the gate is a post, upon

which is mounted the new security system key switch and indicator light. Floodlights atop the two wooden utility poles on opposite corners of the maneuver space provided illumination.

Within the fenced enclosure, now overgrown with weeds and grass, a gravel-surfaced service area has been graded to form a level earthen platform that is elevated a few feet above the surrounding terrain. The service area surrounds the launch tube (silo) and the launch facility support building. The missile launch tube and launch facility support building are near the southern end of the platform; most of their structural elements are underground. The gravel-surfaced platform provided maneuver space for the transporter-erector vehicles that hauled and placed the Minuteman missiles in the launcher. Missile emplacement pylons, transporter-erector tie-downs, and jack pads are adjacent to the launch tube to accommodate the transporter-erector during missile removal or emplacement. A smaller rectangular area at the north end of the platform served as a landing pad for helicopters.

A gravel access drive leads from the gate to the nearby county road. A cathodic protection rectifier similar to the rectifier at Delta One is on the south side of the access drive.

**Missile Launcher.** The launcher consists of two basic components: (1) an underground launch tube or silo and (2) a two-level cylindrical-launcher equipment room surrounding the missile tube at its top. A hardened, ballistically actuated launcher closure door covered this structure. A heavily secured hatchway connected to the equipment room allowed Air Force personnel to enter the launcher.

Because of the implementation of the Strategic Arms Limitation Treaty, the launcher had to be converted to a static display in accordance with the terms of the treaty. The conversion

included opening the launcher closure door 1 foot past halfway, permanently fixing it in place, and constructing a glass viewing enclosure over the opening. A glass enclosure was placed over the partially opened launch tube by the U.S. Air Force in 2001. The conversion was designed to allow treaty verification agreed to by the Soviet Union (now Russia). The glass enclosure is attached to the original launcher closure door. Originally, this new dome created a sort of greenhouse effect, and condensation resulted in the development of mold on the mechanical systems in the launcher. Changes to environmental control systems were made to maintain a constant environment within the silo sufficient to protect the structural components as well as the machinery and other equipment in the silo.

**1. Launch Tube (Silo) (building).** The launch tube consists of a cylinder of 1/4-inch steel plate, 12 feet in diameter and about 80 feet deep. The tube rests on a 4-foot-thick reinforced-concrete foundation, and its lower 52 feet are encased in about 14 inches of heavily reinforced concrete. A two-inch thick steel plate on the floor of the tube serves as a blast deflector for the missile's exhaust.

Welded to the walls of the launch tube about 21 feet above the floor are pulley blocks for the three-point suspension system that supported the installation's Minuteman missile. The suspension system consists of a free-floating, steel, missile support ring attached to three wire cables. The cables pass over the pulley blocks and fasten to large, coil-spring-type shock absorbers fixed to the base of the silo.

The missile suspension system sits in a carriage or cradle supported by cables attached to the sides and bottom of the silo. Articulating arms with foam blocks hold the missile in place. The highly compressive foam blocks act as lateral restraints, dampening the horizontal stresses generated by a nuclear blast. A cradle of tethers dampens the vertical





stresses. Liquid mechanical springs also absorb some of the vertical force.

A hardened, octagonal-shaped launcher closure door covers the launch tube. This door is more than 3 feet thick and weighs about 90 tons. The trailing edge of the launch closure door is outfitted with debris bins. The debris bins, resembling an inverted "cow catcher," folds out as the concrete door opens to snatch debris that slips off the door edges. A companion bin mounted on the facing wall opens as the door slides away to catch debris falling from the other side.

A security pit contains the locking mechanism and control switches for the primary door (personal access hatch). The security pit is secured with a vault door equipped with a combination lock. After the vault door is removed, the primary door locking shaft may be screwed open. An electrical switch controls the hydraulic cylinders that open the 10,000-pound primary door. About 8 feet below the bolt door is a secondary door, known as the B-plug. This secondary door acts as a 7-ton steel plug that is raised and lowered using an electromechanical linear actuator. The B-plug plate is secured by two combination locks. Once the combination lock is opened, a lever is then used to retract the 12 bolts. For security reasons, the lower door is equipped with a timer system. A certain amount of time must elapse before the plug will start retracting.

## **2. Launcher Equipment Room (building).**

Encircling the upper portion of the launch tube is a cylindrical, two-level equipment room, built of heavily reinforced concrete with a steel liner. The equipment room is about 29½ feet square and 28½ feet deep, with a 4-foot-thick slab foundation and walls 2 feet 3 inches thick. A 7-inch-wide "rattle space" between the equipment room and the launch tube allows the two structures to move independently. Personnel access into the first level of the launcher equipment room is

through a secured hatch and down a 30-foot aluminum ladder.

The launcher equipment room circles the launch tube at a depth of about 28 feet, and is divided into two levels.

About one-third of the upper level of the launcher equipment room consists of a steel-framed platform suspended from a series of coil-spring shock struts attached to the ceiling. The floor of the platform is covered with rolled-steel deck plate. This area houses all of the electronic equipment racks used to monitor and troubleshoot the missile, communicate with the launch control center, and conduct the countdown. Supported by these racks are a range of drawers responsible for handling message and command processing. Classified components and components of environmental interest have been removed from the drawers. Additional racks support the drawers responsible for handling critical launch commands and the guidance and control cooling system. On the wall adjacent to the equipment racks are two cylindrical stainless steel chemical tanks, which originally contained a sodium chromate solution used to cool the Minuteman II missile's guidance computer.

Cast into the concrete outer wall on the upper level is a narrow, steel-faced bench, calibrated with compass bearings. This bench was part of a complex optical alignment system called an autocollimator, which was originally used to program the Minuteman I missile's guidance system. Directly above the bench is a canted cylindrical porthole glazed with bulletproof glass. This porthole was also part of the autocollimator system.

The lower level of the equipment room contains a motor generator and supports for 12 large storage batteries. The batteries are linked in a series parallel, 28-volt system. The batteries, which would have provided emergency power to the site, have been removed. On the southeast wall of the lower level is a

large electrical surge arrestor (ESA) in a steel enclosure containing all cables coming into the launcher. The surge arrestors were designed to prevent electronic equipment inside the launcher from being damaged by electromagnetic pulse waves resulting from nuclear explosions. The cylindrical ballistic actuator that powered the silo's ballistic door opener stands upright on the south side of the lower level. An air handler that provides silo dehumidification and cooling for the electronic racks is next to the access ladder.

To protect the missile and launch equipment from electromagnetic pulses produced in nuclear bursts, a combination of seals, filters, and circuit breakers are used to limit current flow into the silo. Surge arrestors, or large capacitors, seal the silos at points where there is electrical penetration of the silo and weapon, such as at the point of access of commercial power lines.

**3. Launch Facility Support Building (building).** Adjacent to the launcher on the southeast is the launch facility support building. The support building contains an array of mechanical equipment that supplied the launcher with chilled water and temperature- and humidity-control and auxiliary power. None of these systems are in operation.

The support building is a boxlike underground structure with its roof about 1 foot below ground level. Constructed entirely of reinforced concrete, the building is rectangular in plan, measuring roughly 16 feet wide, 26 feet long, and 11 feet deep. At each end of the structure is a narrow rectangular areaway, covered with steel grating. A steel entry door is in the areaway on the north end of the structure. A ladder mounted on the wall of the areaway provides access to the door.

The support building contains a diesel-fueled emergency generator that provided electrical power; a brine chiller unit that provided chilled water to the launcher; a hydraulic pump for the launcher's personnel access

hatch; a temperature control air compressor center; and control panels for mechanical, security, and communications systems. Two removable steel hatches in the roof of the support building allowed maintenance crews to quickly install or remove large pieces of equipment for repairs.

**4 a, b, & c. Outer Zone Security System (structures).** The current system consists of only an IMPSS antenna. The IMPSS is single slender structure about 20 feet tall topped by conical peak. Remains of earlier systems include remnant concrete footings at both of the southeast and southwest corner points of the missile site. A steel base for an earlier antenna system (c) is south of the launch facility support building. The system was designed as a motion detector for the area within the fenced enclosure.

**5. UHF Radio Receiver Antenna (structure).** The hardened ultra-high-frequency receiving antenna is a few feet northwest of the silo opening. It was installed about 1968 to link the launch facility with the Strategic Air Command's Airborne launch control center. This link has been removed.

**6 a, b, & c. Transporter Pads (structures).** Three sets of different objects were used to stabilize the missile transporter erector (TE) when installing or removing the missile from the silo. They are identified as (a) landing gear pads, which are 17-inch square pads set 6 feet in the ground on 6-foot square footings, (b) jack pads about 42 inches by 24 inches set 15 feet below grade on a 21½-foot by 7½-foot by 3-foot footing, and (c) pylons that stand upright at the edge of the missile silo and are used to bolt to the missile carrier.

**7 a & b. Surface lighting fixtures (structures).** Two wooden utility poles at the north and south sides of the security fence support lighting fixtures used to illuminate the interior grounds of the launch facility.

**8. Hidden Interstate Cable System Markers (HICS) (structures).** Two wooden poles identify the location of the buried cable that was the HICS system. This system of underground communication cables connected the launch control centers with the missile silos and provided secure communication between these facilities in the event of a nuclear attack. The HICS markers are outside of the chain-link fence.

**9. Cathodic Protection Rectifier (structure).** This structure serves the same purpose as it does at Delta One and is adjacent to the gravel entry road.

**10. Security Fence/Sliding Gate (structure).** As is the case at Delta One the structures at Delta Nine are surrounded by a security fence. The fence is of standard chain-link construction. The fence is capped by outriggers with three strands of barbed wire strung between each supporting pole around the perimeter of the fence. A swinging gate is at the point where the fence crosses the entrance road. The gate is not motorized and must be opened by hand.

**11. Azimuth Markers (structures).** The azimuth markers are surveyors' benchmarks that were used in conjunction with the autocollimator to align the Minuteman I guidance system. Delta Nine has two azimuth markers. One is about 1,000 feet northwest of the launcher, and the other is about 1,000 feet north-northeast. Each azimuth marker is a cylindrical concrete pylon set vertically 8 feet into the ground. Each pylon is about 18 inches in diameter and 4 feet high. A disc-shaped alloy survey plate was set into the top of each pylon. These markers are outside the national historic site boundary on U.S. Forest Service managed land.

## CULTURAL LANDSCAPES

According to the National Park Service's *Cultural Resource Management Guideline* (DO-28) a cultural landscape is:

... a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions.

Thus, cultural landscapes are the result of the long interaction between man and the land, the influence of human beliefs and actions over time upon the natural landscape. Shaped through time by historical land-use and management practices, as well as politics and property laws, levels of technology, and economic conditions, cultural landscapes provide a living record of an area's past, a visual chronicle of its history. The dynamic nature of modern human life, however, contributes to the continual reshaping of cultural landscapes, making them a good source of information about specific times and places, but at the same time rendering their long-term preservation a challenge.

The National Park Service categorizes cultural landscapes into four groups that are not mutually exclusive: (1) historic designed landscapes, which are designed and deliberate artistic creations, (2) historic vernacular landscapes, which reflect people's values and attitudes toward land use, (3) historic sites, which are associated with important events, activities, and persons, and (4) ethnographic landscapes, which are generally associated with contemporary groups with historic or prehistoric connections.

As a cultural landscape, both Delta One and Delta Nine facilities can be viewed as one overall historic site, with approximately 8 miles of gently rolling prairie separating the two units. The decision to locate the facilities in this area was based on their proximity to a support base (Ellsworth Air Force Base), as

well as the larger deployment plan to locate all Minutemen in the northern part of the United States, closer to the Soviet Union. Physical separation of the missile launch facility from the control facility was to ensure survivability in the event of attack. Nuclear detonation at one facility would not destroy the other.

The cultural landscape inventory is ongoing for both Delta facilities. The National Register of Historic Places nomination submitted in 2004 and accepted by the Keeper of the national register in May 2005, includes a landscape assessment. Very minor changes have occurred to the landscape and associated views of both sites since the 1991–2003 mothballing of the facilities (see appendix H), and, in fact, the landscape remains extraordinarily consistent to the time of activation in 1962.

The landscape and the surrounding viewshed have remained relatively stable and are believed to exhibit a high degree of integrity when compared to the period of their original construction and activation. However, no cultural landscape report has been prepared for Delta One, and it is unknown what surrounding elements contribute to the overall historic character of the launch facility.

Known changes are limited to the construction of a steel cellular telephone tower north of the launch control facility in 2001. This tower is now a dominating feature of the cultural landscape but is not part of the Delta One facility and has no connection to the historic site.

### **Delta One**

For security purposes, the control room in the launch facility control building was constructed to offer unobstructed views of the access road across the prairie to what is now Interstate 90. The overall impression of the installation is that of a ranch-style home and associated garage possibly related to the

adjacent ranch facilities. It is surrounded on three sides by private rangeland and is sited near the farmyard of an existing ranching operation. It is unknown which, if any, of the current ranch structures were present at the time of the construction of the missile installation. The area maintains its rural feel and setting.

The adjacent ranch facility is on a gently rising slope north of the missile launch control facility, and parts of it are visible from Delta One. Access to the ranch is via the county road east of Delta One and an adjacent dirt driveway north of the facility.

A gravel county road runs south from Delta One to Interstate 90, about 0.5 mile and is the direct route of travel to and from the site. The west side of the road is private ranchlands with cattle and horse grazing. The east side of the road is a mixture of USFS grassland and a large private wheat field near the interstate interchange.

### **Delta Nine**

The gently rolling landscape of the launch facility remains much as it was during its operational life (1963–91). The surrounding terrain is undeveloped, with but a single gravel road providing access to the site. The improved gravel surface road was designed to carry the weight of a fully loaded missile transport vehicle to and from the silo. As at Delta One, the grass surrounding the facility was mowed regularly to keep it short. The surrounding environment has had no development since the activation of the site.

The most important change at Delta Nine is a glass structure covering the missile silo. This viewing window was constructed in 2001 as part of the requirements of the START II treaty, which had a significant impact on the deactivation of the Minuteman missile system.



Historically, all vegetation inside the fence was killed and kept down with chemical herbicides. Crushed rock was also laid out across the service area to provide efficient operation of the launch facility. Since deactivation, the mowing of the grass and the application of herbicide has not been regular. As a result, the condition of the vegetation both inside and outside the enclosure is not consistent with the historic appearance during operational readiness.

In May 2005 the national register nomination for Minuteman Missile National Historic Site was finalized with a signature by the Keeper. The national register listing identified a total of 90 acres at Delta Nine. The 90 acres roughly coincide with the boundaries established by the U.S. Air Force around Delta Nine. The concurrent use area includes the azimuth survey markers and HICS cable marker posts. The nomination, with concurrence by the U.S. Forest Service in January 2005, provides historic landscape protection and conservation protection for the azimuth markers and HICS posts.

## ETHNOGRAPHIC RESOURCES

Ethnographic resources are defined by the National Park Service as any “site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious subsistence, or other significance in the cultural system of a group traditionally associated with it. For Minuteman Missile National Historic Site, these groups could include Native Americans, military personnel, construction workers, local residents, and/or those involved with various aspects of the facilities.

### Native Americans

Native American tribes identified as having a cultural affiliation with the area of the national historic site (see table4) were consulted to ascertain whether they had any resource

concerns within the boundaries or in the surrounding areas of the national historic site. Those contacts resulted in no concerns being expressed.

### Military

Ethnographic resources are recognized to be of significant importance to the understanding of the historic use of the facility. These resources are also useful in interpreting the site to the public. The personal histories and knowledge regarding the daily operations and management of the facility are critical to presenting a complete and reliable presentation. Ten oral histories of individuals and “missileers” who were assigned to or associated with the Minuteman Missile program have already provided stories and remembrances for use in the development of interpretive programs and background of the workings of missile complex. Some of the servicemen who were stationed with the 44<sup>th</sup> Missile Wing still live in the area.

The events at Minuteman Missile sites like Delta One and Delta Nine constituted a significant aspect of maintaining military deterrence and preparedness for retaliation should a nuclear attack on the United States occur. The site has significance not only to the missile crew members that served at the Delta One installation but other Minuteman installations as well. Those who served are linked to it with a deep sense of purpose and responsibility. All individuals involved represent a special client/customer/patron population with a long-term interest in the preservation of the site, and who provide a unique knowledge base regarding the operation of the facility. These individuals have a limited time in which to offer/provide information regarding the operation of the sites and daily living conditions associated with them. Ethnographic research can be expected to be an essential component of the national historic site.

## MUSEUM OBJECTS

Museum objects associated with Delta One and Delta Nine form an important resource for the presentation and operation of the site. These historic items were an integral part of the operational mission and daily life in support of the facilities. Today, these materials are basic to understanding the entire range of activities occurring at the site during its active operation. In addition to providing essential documentation for understanding the history, daily activities, and national events, the museum collections aid in providing the interpretive context for the site.

The Minuteman Missile facilities were fully decommissioned in 1994, and mothballing procedures were carried out pending NPS acquisition of the facilities. During this period some furnishings were removed to Ellsworth Air Force Base for storage and safekeeping. Most items remained at Delta One and Delta Nine under conditions somewhat similar to those that would have been experienced during the sites' period of use. All of the items, those at Ellsworth and those on-site, needed to be completely inventoried by the National Park Service. Currently, the collections are being formally curated.

Two distinct categories of collections exist: (1) historic furnishings and archival materials used by missile crews on a daily or regular basis, and (2) facility maintenance stockpile associated with mission operational needs. Both categories of museum objects may increase through future donations of items from the private sector and from materials declassified by the military. Former crew member and others associated with the Delta facilities/44th Wing or other Minuteman Missile facilities may donate personal memorabilia. A scope of collections documents will be required to determine the types of acceptable materials. However, the collection can be expected to grow as items are acquired and received during the coming years.

## Furnishings and Daily Use Items

Materials in this category may most accurately be labeled as historic and/or archival collections. They represent and reflect the time period and culture of the men and women responsible for maintaining and operating the facility. The collections in this category are associated with the daily activities necessary for the missile crews to live and function in their duties at the site. These artifacts bring insight and expression into the daily operation of the site. These materials range from utilitarian artifacts such as dining utensils and reading materials to decorations, furniture, bedding, and various machines, schematics, and computers necessary for the continuing occupation and functioning of the missile sites.

Museum archival and manuscript collections would be maintained as part of the Minuteman Missile National Historical Site collections. Such collections would include such nonofficial documents as personal papers, resource management records, and historic archival materials associated with the site and its mission. These materials provide the context in which the site can be understood and ultimately interpreted.

## Facility Maintenance Stockpile

Although not traditionally thought of as museum items, many of the facility maintenance objects will be included into the collections. These materials would have been used as spare parts for worn-out or failed machinery and electronics. They are generally duplicates of existing machinery or other components such as replacement motors. These items have been obtained in an opportunistic fashion from various locations associated with the Minuteman system as they became available. A complete inventory and "Scope of Collections" statement will assist in providing the guidelines for selection of museum items versus spare parts. In general,

items that can still be used for spare parts in the day-to-day operations of Delta One and Delta Nine's utilities and infrastructure, will remain as spare parts and not be accessioned into the collections. Maintenance items no longer used to maintain the facility, such as the back-up generator or hydraulic com-

ponents to the launch door, will be accessioned. The spare part items will be properly warehoused to provide the spare parts necessary for the maintenance functions of the facilities.

## NATURAL RESOURCES

### AIR QUALITY

The National Park Service has two air quality monitoring stations in nearby Badlands National Park (5 to 10 miles south of the national historic site) that have been collecting data since 1988. One station monitors nitrogen oxides, sulfur oxides, volatile organics, and particulates (PM<sub>10</sub>); the other station monitors visibility in the park. Passive ozone also is monitored in the summer.

Due to its proximity to Badlands National Park, the air quality at Minuteman Missile National Historic Site is anticipated to be similar to that of Badlands.

The region generally has good air quality. With no major population centers near the park, and ranching and farming being the primary regional industries, emissions of pollutants in the immediate vicinity of the park are relatively low. Historically, the park only experienced occasional, short-term air pollution from transient wildland fire smoke and blowing dust.

Wet deposition data collected in the late 1980s and early 1990s indicate that Badlands National Park does not receive much deposition of sulfur and nitrogen, and thus does not face an apparent threat of acid precipitation (NPS 1998). Low sulfur dioxide values were recorded in the park, with mean values ranging from 0.10 parts per billion by volume (ppbv) in 1988 to 0.38 ppbv in 1993. (The clean air baseline is estimated to be 0.19ppbv [NPS 1998].)

Ozone also is not a major pollutant in area. Data collected from 1988 to 1992 showed the park had some of the lowest average ozone concentrations in the national park system's monitoring network. Ozone levels were far below those found to damage sensitive plants.

Haziness, caused by fine particulates and gases, does affect visibility at park. Historically, changes in weather patterns, winds, and smoke from fires affected visibility in the area. Photography was used to monitor visibility from 1987 through 1995 in Badlands National Park. Based on the photographs, on a clear day one can often see from a point in the park for 199 to 236 miles (320 to 380 km) whereas on a hazy day views can typically decline to only 37 to 50 miles (60 to 80 km); on an "average" day the visual range in the park is typically 62 to 81 miles (100 to 130 km) (NPS 1998). Interestingly, it is believed that pre-settlement visibility was lower than current levels due to frequent fires in the area during summer months (NPS 1998).

A few minor sources of air pollution occur in and near the park. These sources include vehicle emissions, dust (both natural and from agricultural operations), and smoke from fires (including prescribed burns and burning of agricultural wastes on private lands). These pollutants include smoke, particulates, and carbon monoxide.

Distant anthropogenic sources and fires, both within and outside the region, are believed to be primarily responsible for most of the air pollutants in region. Small quantities of emissions from Rapid City sources, including power and industrial plants, reach the park. Emissions of nitrogen oxides and sulfur dioxide from industrial facilities and electric utilities in western South Dakota (the Black Hills) and eastern Wyoming (the Powder River Basin) are of the greatest concern. Emissions of large quantities of nitrogen oxides in Wyoming reach the park's airshed. Westerly winds also transport nitrogen oxides, sulfur dioxide, and volatile organic compounds eastward over the Black Hills to the Badlands region. Smoke from fires also contributes to regional haze. The amount of haze and other pollutants that affect the park's

airshed depend on a number of factors, including the speed and direction of winds, season, and time of day.

Although the park generally has good air quality, the overall trend is downward — primarily due to external sources. Future developments being considered in the region, including several new coal-fired power plants, coal bed methane production, oil and gas production facilities, and railroads, will increase emissions of pollutants, some of which will be blown into Badlands region by the wind. If this occurs, the park's air quality will further deteriorate.

## VEGETATION

Minuteman Missile National Historic Site is at the western edge of the mixed-grass prairie ecosystem. The mixed-grass prairie of the central United States was a transition zone between the more arid short-grass prairie to the west and the moist tall-grass prairie to the east.

The area's vegetation was mapped in 1999 as part of the United States Geological Survey – National Park Service's nationwide vegetation mapping project (Von Loh et al. 1999). Outside of sparsely vegetated areas, nine major vegetative communities were identified: dry mixed-grass prairie; mesic mixed-grass prairie; introduced grasslands; riparian/wet meadows; dry plains shrublands; mesic plains shrublands; riparian shrublands; dry coniferous forest and woodlands; and riparian deciduous forests and woodlands.

Mixed-grass prairie is the dominant vegetative community at the proposed visitor/administrative facility locations. Many natural and anthropogenic factors have influenced the vegetation at the visitor / administrative facility locations, including soil type and depth, moisture levels, fires, pasture management and grazing.

The vegetation at Delta One and Delta Nine was impacted by the construction of the facilities. Within the fenced compounds the vegetation was managed by the Air Force through mowing and use of herbicides. On the lands outside compounds, the grasslands were used for grazing cattle. The vegetation is a mixed-grass prairie.

Exotic (nonnative) plants occur throughout the region on lands that have been disturbed by human activities. Grazing and dryland farming introduced exotic plants into the region. In nearby Badlands National Park, a total of 71 exotic plant species are known to occur in the park. Several of these species are known to occur at the Minuteman Missile sites.

## WILDLIFE

A variety of wildlife species are known to occur in the region, including small mammals, ungulates, birds, reptiles, amphibians and invertebrates. A total of 56 mammal species have been documented in nearby Badlands National Park (with 8 others expected to occur, but not documented); there are also 112 bird species (with 6 other species expected), and 17 reptile and amphibian species (with 2 others expected) (NPS 2001). Many of these species are anticipated to occur within the national historic site. However, no surveys have been conducted specifically covering the national historic site.

Several "big game" wildlife species, as defined by the South Dakota Department of Game, Fish and Parks, are known to occur in the Badlands region. These include the pronghorn antelope (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), white-tailed deer (*O. virginianus*), and the wild turkey (*Meleagris gallopavo*). White-tailed deer are infrequently seen, while pronghorn and mule deer are commonly seen. Both deer and pronghorn move in and out of the national historic site and are hunted on lands adjacent to the national historic site. Cattle grazing also may

affect ungulate numbers in the region, although this has not been documented.

Other common mammal species include the coyote (*Canis latrans*), bobcat (*Felis rufus*), least chipmunk (*Eutamias minimus*), eastern cottontail rabbit (*Sylvilagus floridus*), thirteen lined ground squirrel (*Spermophilus tridecemlineatus*), black-tailed prairie dog (*Cynomys ludovicianus*), deer mouse (*Peromyscus maniculatus*) and muskrat (*Ondontra zibehicus*) and numerous other smaller rodents.

The region provides for a diverse bird population, including raptors, owls, waterfowl, shorebirds, herons, cranes, woodpeckers, and songbirds. Most of the region's bird species are either summer

residents or migrants. Birds frequently seen in the region include barn swallow (*Hirundo rustica*), cliff swallow (*Hirundo pyrrhonota*), horned lark (*Eremophila alpestris*), lark bunting (*Calamospiza melanocorys*), mourning dove (*Zenaida macroura*), grasshopper sparrow (*Ammodramus savannarumi*), red-winged blackbird (*Agelaius phoeniceus*), and western meadowlark (*Sturnella neglecta*). Other common bird species include the northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), black-billed magpie (*Pica pica*), killdeer (*Charadrius vociferus*), mountain bluebird (*Sialia currucoides*), and American robin (*Turdus migratorius*).

## VISITOR USE AND EXPERIENCE

Visitors can contact NPS staff during business hours at a contact/administration station near Exit 131 on Interstate 90. (This exit is the turn off for the northeast entrance to Badlands National Park and is less than 4 miles from the Delta One site. The Delta Nine site is farther west off Exit 116 of Interstate 90.) Brochures and maps are available at the contact station, and, depending on availability, NPS staff are present to answer questions. After receiving directions, visitors may drive to the two Delta facilities and see them through the fence, but access is restricted to guided tours.

During the summer, tours are conducted twice daily. Reservations are required, and tours are limited to six people per tour. Visitors meet park staff at the contact station to begin their tour.

Badlands National Park is about 70 miles east of Rapid City, and many visitors consist of vacationers who make a relatively brief visit to Badlands on their way to other destinations.

Although the number of visitors fluctuates somewhat from year to year, the annual visitation trend remains between 900,000 to 1.2 million visitors. Visitation to Badlands is highly seasonal, with most visitors arriving between Memorial Day and Labor Day. (Seventy-five percent of the visitation in 2002 occurred during June, July and August.)

Based on visitation to Badlands and the nearby Air and Space Museum at Ellsworth Air Force Base, a 2003 transportation study projected visitation to a future Minuteman Missile visitor facility at between 200,000 and 400,000 people per year. The estimates depend on the location of the visitor facility and the amount of “drive by” visitors who might be attracted by the site. A lower number of visitors are expected to visit Delta One and Delta Nine. At the missile sites, visitor access to building interiors will be limited by the physical capacity of the resources to accommodate visitors — group size is limited by the capacity of the elevator.

## SOCIOECONOMIC ENVIRONMENT

### INTRODUCTION

The study area for the socioeconomic environment for this document is Jackson, Pennington, and Shannon counties. Minuteman Missile National Historic Site is in Jackson and Pennington counties, and the largest part of the Pine Ridge Indian Reservation is in Shannon County.

Minuteman Missile National Historic Site is the new unit of the national park system found in southwest South Dakota. A few miles south of the national historic site is Badlands National Park. About 60 miles west of the national historic site is Rapid City and the Black Hills region, which contains Mount Rushmore National Memorial, Wind Cave National Park, Jewel Cave National Monument, Custer State Park and the Black Hills National Forest, which offer recreational resources in the Black Hills region. The Black Hills region of South Dakota is a destination stop for millions of tourists because of this concentration of attractions and the accessibility from I-90, a major east-west interstate route.

### Population

County and state populations are shown in the table below. The state ranks 46th in the nation in population, and the three-county region is predominately rural. The major exception is Rapid City.

Rapid City, in central Pennington County, is the largest city (59,607 persons in 2000) in western South Dakota (U.S. Census Bureau 2000) and is a center for commerce, services, and trade in this part of the country. In 2000, about 57% of the total population for the three counties lived in Rapid City. This city also contained more than two-thirds of the population of Pennington County.

In the other two counties American Indians make up a large percentage of the population. Almost half of the Jackson County residents and nearly all of Shannon County's population are American Indians. This is because the Pine Ridge Indian Reservation, which is comprised of lands held in trust by the federal government for the Oglala Sioux Tribe of Pine Ridge, covers all of Shannon County and the southern half of Jackson County south of the White River. The population of Shannon County increased by about 26% from 1990 to 2000; this rate was about five times the state rate for population growth.

As of October 1997 there were 39,734 enrolled members of the Oglala Sioux Tribe of Pine Ridge. Of this number, 39,321 members were living on and adjacent to the Pine Ridge Indian Reservation (Bureau of Indian Affairs 2000a). About half of the tribal members lived in neighboring counties outside the three-county region.

**TABLE 13. AFFECTED AREA POPULATION FOR SELECTED YEARS**

Counties	1990	2000	% Change 1990 to 2000	American Indian 2000	% of County Total 2000
Jackson County	2,811	2,930	4.2%	1,401	47.8%
Pennington County	81,343	88,565	8.9%	7,174	8.1%
Shannon County	9,902	12,466	25.9%	11,743	94.2%
South Dakota	696,004	754,844	8.5%	62,283	8.3%

Source: U.S. Census Bureau, 1990 a and b, and July 3, 2001 a – d



## INCOME

In 1999 South Dakota had a per capita personal income (PCPI) of \$25,041, only 87.7% of the national average (table 14). The per capita personal income of Pennington County was slightly higher than the state average, but it was still well below the national per capita personal income. Jackson County's per capita personal income was only 54.2% of the state average. Shannon County lagged even further behind with a per capita personal income that was only 45.0% of the South Dakota per capita personal income. While the national economy was booming in the 1990s, such low incomes indicate that the area

economy was not experiencing the same level of benefits.

Although relatively old data, (income data from the 2000 Census is not yet available) table 15 provides some insight into why per capita personal income is so low in Shannon and Jackson Counties. American Indians in the region had a per capita personal income that ranged from one-third to one-half that of white Americans living in the area. It is surmised that this situation still exists based upon the low per capita personal incomes for Jackson and Shannon Counties and the fact that high levels of unemployment and poverty are found for the American Indians in the region.

**TABLE 14. PER CAPITA PERSONAL INCOME**

Counties	1989	1999
Jackson County	\$ 9,189	\$13,560
Pennington County	\$15,942	\$25,088
Shannon County	\$ 6,185	\$11,280
South Dakota	\$14,767	\$25,041
United States	\$18,566	\$28,546

Source: Bureau of Economic Analysis, 2000 a– d, and 2001

**TABLE 15. PER CAPITA PERSONAL INCOME (PCPI) BY COUNTY BY RACE**

Counties	County/ State/USA Average PCPI	White PCPI	American Indian PCPI	American Indian PCPI as a % of White PCPI	American Indian PCPI as a % of State Average PCPI (\$10,661)
Jackson County	\$6,947	\$8,979	\$4,182	46.6%	39.2%
Pennington County	\$12,031	\$12,723	\$5,396	42.4%	50.6%
Shannon County	\$3,417	\$9,074	\$3,029	33.4%	28.4%
South Dakota	\$10,661	\$11,230	\$4,040	36.0%	37.9%
United States	\$14,420	\$15,687	\$8,328	53.1%	78.1%

SOURCE: U.S. Census Bureau, 1990 a, b, and c.

### MAJOR INDUSTRIES BY EARNINGS

The various levels of government provided 37.2% of earnings in Jackson County (\$18,604,000 in 1999, see table 16). Service industries were second in rank, providing 16.2% of earnings. Retail trade accounted for 15.9% of earnings. These three sectors of the county economy provided more than two-thirds of the total earnings. Also, three sectors — agricultural services et al., mining, and finance et al. — provided little or no earnings. These facts indicate that the Jackson County economy is not well diversified and could be vulnerable to disturbances in a key industry. When measured by earnings, Jackson County's economy is only 1.3% as large as that of Pennington County.

Pennington County, with its much larger population, has a larger and more diversified economy than either of the other two counties being described here. The largest sector is services, accounting for 28.4% of the total of \$1,653,293,000 in earnings. All government sectors provided 23.4% of earnings. Retail trade was the third largest sector with 13.1% of earnings.

Earnings of residents of Shannon County amounted to about 6.0% of what was earned in Pennington County in 1999. The three largest sectors were services at 43.1%, all government at 38.8%, and farming at 4.1% of the total of \$98,985,000 in earnings. Shannon County's economy also suffers from a lack of

diversity. Several sectors provide little or no earnings (less than 2%) for the county.

### MAJOR INDUSTRIES BY EMPLOYMENT

Farming (24.9% of the total), services (21.5%), retail trade (18.5%), and all levels of government (19.6%) provided the largest share of jobs, nearly 85% of the total, in Jackson County (see table 17). Many sectors provided few if any jobs in Jackson County. Pennington County was more diversified with hundreds or thousands of jobs in each sector. The largest sectors were services (31.2% of total jobs), retail trade (21.3%), and all levels of government (15.8%). Services (50.6% of all jobs) and government at all levels (25.5%) accounted for more than three-quarters of the jobs in Shannon County. Some sectors provided few if any positions.

### UNEMPLOYMENT

South Dakota has had relatively low unemployment during the 1990s as has Pennington County (table 18). The unemployment rate in Jackson County has been nearly twice the state rate. In Shannon County, the rate has been nearly four to five times the state level. Unemployment among the Lakota people has been very high — with nearly three out of four members of the labor force being unemployed (table 19).

**TABLE 16. EARNINGS BY INDUSTRY**

Industry	Jackson County	% of Total	Pennington County	% of Total	Shannon County	% of Total
Farm	\$2,282,000	12.3%	\$6,845,000	0.4%	\$4,021,000	4.1%
Agricultural Services, Forestry, & Fishing	*	*	7,058,000	0.4%	*	*
Mining	0	0.0%	3,135,000	0.2%	0	0.0%
Construction	893,000	4.8%	130,394,000	7.9%	4,698,000	4.7%
Manufacturing	131,000	0.7%	134,376,000	8.1%	*	*
Transportation & Public Utilities	1,107,000	6.0%	82,163,000	5.0%	916,000	0.9%
Wholesale Trade	343,000	1.8%	103,234,000	6.2%	114,000	0.1%
Retail Trade	2,951,000	15.9%	216,060,000	13.1%	3,694,000	3.7%
Finance, Insurance, & Real Estate	*	*	113,655,000	6.9%	*	*
Services	3,014,000	16.2%	470,166,000	28.4%	42,629,000	43.1%
Federal Civilian Government	3,856,000	20.7%	64,920,000	3.9%	28,878,000	29.2%
Military	281,000	1.5%	157,308,000	9.5%	1,191,000	1.2%
State Government	416,000	2.2%	45,384,000	2.7%	1,493,000	1.5%
Local Government	2,370,000	12.7%	118,595,000	7.2%	6,818,000	6.9%
Total	\$18,604,000	100.0%	\$1,653,293,000	100.0%	\$98,985,000	100.0%

SOURCE: Bureau of Economic Analysis, 2000 e, f, & g

\*Estimates are not shown to avoid disclosure of confidential information.

Estimated values are included in totals.

**TABLE 17. FULL-TIME AND PART-TIME EMPLOYEES\* BY MAJOR INDUSTRY**

Industry	Jackson County	% of Total	Pennington County	% of Total	Shannon County	% of Total
Farm	312	24.9%	799	1.2%	221	5.8%
Agricultural Services, Forestry, & Fishing	*	*	476	0.7%	*	*
Mining	0	0.0%	182	0.3%	0	0.0%
Construction	36	2.9%	4,401	6.7%	157	4.1%
Manufacturing	13	1.0%	4,797	7.4%	*	*
Transportation & Public Utilities	37	3.0%	2,539	3.9%	16	0.4%
Wholesale Trade	11	0.9%	2,786	4.3%	*	*
Retail Trade	232	18.5%	13,894	21.3%	307	8.1%
Finance, Insurance, & Real Estate	*	*	4,695	7.2%	*	*
Services	269	21.5%	20,367	31.2%	1,925	50.6%
Federal Civilian Government	90	7.2%	1,296	2.0%	511	13.4%
Military	21	1.7%	3,660	5.6%	90	2.4%
State Government	13	1.0%	1,411	2.2%	51	1.3%
Local Government	121	9.7%	3,898	6.0%	319	8.4%
Total	1,252	100.0%	65,201	100.0%	3,807	100.0%

SOURCE: Bureau of Economic Analysis, June 25, 2001 a, b, and c.

\*Some data are not shown to avoid disclosure of confidential information. Estimated values are included in totals.

**TABLE 18. UNEMPLOYMENT FOR SELECTED YEARS**

Counties/State/USA	1990	1996	2000
Jackson County	6.0%	5.4%	5.5%
Pennington County	3.3%	3.3%	2.0%
Shannon County	14.5%	15.4%	9.8%
South Dakota	3.9%	3.2%	3.2%
U.S.A.	5.6%	5.4%	4.0%

SOURCE: U.S. Census Bureau 1998 a – e, U.S. Census Bureau 2001, and Bureau of Labor Statistics 2001

**TABLE 19. OGLALA SIOUX TRIBE: UNEMPLOYMENT AMONG TRIBAL MEMBERS LIVING ON OR ADJACENT TO THE RESERVATION**

Year	Population	Labor Force	Total Unemployed	Percent Unemployed
1997	39,321	22,840	16,642	73%
1995	38,426	18,986	14,021	74%

SOURCE: Bureau of Indian Affairs, 1995, 1997 a and b

**POVERTY**

The national average for persons living in poverty in 1989 was 13.1% (table 20.). This figure represented 31,742,864 people out of a population of 241,977,859. The poverty rate for South Dakota was slightly higher at 15.9%. Over the years, only Pennington County's poverty rate has been near that for the state and nation. Both Jackson and Shannon Counties exhibit patterns of high poverty rates. Both of these counties have had a history of poverty rates that were substantially

higher than the state and national averages. Although the poverty rates for Jackson County and Shannon County have fallen from 1989 to 1998, these rates are still much higher than the state or national averages. In 1989 four out of 10 people in Jackson County and six out of 10 people in Shannon County were living in poverty. In 1998 the situation had improved somewhat so that three out of 10 people in Jackson County and four out of 10 people in Shannon County were living in poverty.

**TABLE 20. PERCENT OF PEOPLE IN POVERTY FOR SELECTED YEARS**

Counties/State/USA	1989	1993	1997	1998	1999
Jackson County	38.8%	31.0%	33.5%	30.9%	36.5%
Pennington County	12.9%	14.8%	14.3%	13.1%	11.5%
Shannon County	63.1%	49.9%	42.9%	37.1%	52.3%
South Dakota	15.9%	14.3%	14.0%	13.0%	13.2%
U.S.A.	13.1%	15.1%	13.3%		12.4%

SOURCE: U.S. Census Bureau, 1990 d – h, 1997, and 1998 a – e

## NPS OPERATIONS

There are currently three sites at the national historic site:

Delta One is the launch control facility and includes the living quarters for the personnel stationed there and the underground control facility.

Delta Nine is the missile silo and contains one decommissioned missile with a viewing enclosure as well as the launch facility support building. Currently visitors are not able to view the launch facility support building.

The project office, a trailer, is currently located at exit 131 off of Interstate 90.

The project office for the national historic site at exit 131 is where visitors stop for information and to make tour reservations. Currently visitors must use their own vehicles to get to and from the Delta facilities from the project office.

At the Delta facilities, the entry roads and structures are maintained consistent with their status as a national historic site. The cultural landscapes within the security fence at both Delta facilities are currently maintained according to NPS standards. Some original collection items, especially those that are at high risk for deterioration, would be removed for their protection. Replacement parts that might be necessary to maintain equipment at the Delta facilities as well as spare equipment (e.g., a spare elevator like the one used to provide access to the launch control room) are stored in several locations. Most components of the cultural landscape are present but in need of repair. The basketball court and helipad at Delta One both need to be resurfaced with new stripping painted on each. The flagpole has been replaced. Other items have been removed. The sewage treatment lagoons, about 240 feet

south west of the chain-link security fence at Delta One, are dry. The heating and air-conditioning units at Delta One are operative and currently adequate. Potable water at the Delta One site was provided by a well. Two water pumps were installed in 1963 to provide water at Delta One, the primary one for domestic use and the secondary one for fire suppression. Each pump can deliver 150 gallons per minute (gpm). The pumps operate independently but are connected so that if the capacity of either pump was exceeded then the other pump would turn on automatically to provide additional water. When the Delta facility was operational the fire suppression system was a standpipe hose. The standpipe hose remains on site, but it will not be used for fire suppression because of the age of the system, because NPS employees are not trained to operate it, and because the equipment for interior fire attack is not available. NPS experts have determined that the water at Delta One is insufficient for the needs of the national historic site. Consequently the Park Service will use water storage tanks at all locations.

There is no potable water at Delta Nine. The site is sufficiently hardened so that maintenance needs at this site are few. Because, condensation was forming in the missile launch facility/viewing enclosure, a dehumidifier was installed. The azimuth markers that are part of the missile tracking system at Delta Nine are outside the chain-link security fence on U.S. Forest Service land. In May 2005 the national register nomination for Minuteman Missile National Historic Site was finalized with a signature by the keeper. The national register listing identified a total of 90 acres at Delta Nine. The 90 acres roughly coincide with the boundaries established by the U.S. Air Force around Delta Nine. The concurrent use area includes the azimuth survey markers and HICS cable marker posts. The nomination, with concurrence by the U.S. Forest

Service in January 2005 provides historic landscape protection and conservation protection for the azimuth markers and HICS posts.

Some security measures have been added to the Delta facilities, including video monitors, motion and smoke detectors, and a dry-pipe sprinkler system at Delta One. The aquifer that underlies the Delta facilities is deep, the average well depth is 1,200 feet, and the water quality is poor. The groundwater is highly mineralized, and the background level of radionuclides detected in nearby wells exceeds the maximum contaminant level established by the U.S. Environmental Protection Agency (pers. comm. Captain Robert J. Reiss, M.S., P.E. Regional Public Health Consultant, NPS Midwest Regional Office, October 2004).

Current staffing at the site is as follows (see appendix G):

- a superintendent
- an administrative support assistant
- a maintenance mechanic
- a seasonal custodian
- a chief visitor and resource protection/interpretation and visitor services ranger
- a seasonal resource and visitor protection ranger shared with Badlands National Park
- an interpretation and visitor services park ranger
- two seasonal park guides
- a cultural resource specialist/historian





AZIMUTH MARKER



AERIAL VIEW OF A COMPLETED LAUNCH FACILITY IN 1963



VIEWING ENCLOSURE



**CHAPTER 4:  
ENVIRONMENTAL  
CONSEQUENCES**



## INTRODUCTION

The National Environmental Policy Act (NEPA) requires that environmental documents discuss the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental effects that cannot be avoided if a proposed action is implemented. In this case the proposed federal action would be the adoption of a general management plan for Minuteman Missile National Historic Site. The following portion of this document analyzes the environmental impacts of implementing the four alternatives on cultural resources, natural resources, the visitor experience, the socioeconomic environment, and national historic site (NPS) operations. The analysis is the basis for comparing the beneficial and adverse effects of implementing the alternatives.

Because of the high integrity of the resources and the small acreage of the facilities, the impacts of actions described in the alternatives are analyzed in more detail than most general management plans. When site-specific developments such as for the visitor/administrative facility and parking area or other actions are proposed for implementation subsequent to this *General Management Plan*, appropriate detailed environmental and cultural compliance documentation will be prepared in accord with the National Environmental Policy Act and National Historic Preservation Act requirements.

This chapter begins with a description of the methods and assumptions used for each topic. Impact analysis discussions are organized by alternative and then by impact topic under each alternative.

Each alternative discussion also describes cumulative impacts and presents a conclusion. At the end of each alternative there is a brief discussion of unavoidable adverse impacts; irreversible and irretrievable commitments of

resources; and the relationship of short-term uses of the environment and the maintenance and enhancement of long-term productivity. The impacts of each alternative are briefly summarized in table 11 at the end of the “Chapter 2: Alternatives, Including the Preferred Alternative.”

### CUMULATIVE IMPACT ANALYSIS

A cumulative impact is described in the Council on Environmental Quality’s regulation 1508.7 as follows:

*Cumulative impacts* are incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

To determine potential cumulative impacts, *other* projects within the area surrounding Minuteman Missile National Historic Site were identified. The area includes the communities of Wall, Scenic, Cactus Flat, and Interior; parts of Buffalo Gap National Grassland; and parts of Jackson, Pennington, and Shannon Counties. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented, or would be implemented in the reasonably foreseeable future. Impacts of past actions were also considered in the analysis.

The actions proposed in the alternatives are evaluated in conjunction with the impacts of each alternative to determine if they have any cumulative effects on particular natural or cultural resources, visitor use, socioeconomic environment, or NPS operations. Because

most of these cumulative actions are in the early planning stages, the qualitative evaluation of cumulative impacts was based on a general description of the project.

### Cultural Resources

**Past Actions.** Following are past actions that add to the cumulative impacts.

*Delta One*— The principal and most noticeable changes were to outer walls of the support building and garage. The buildings were sheathed with wide-lap, steel, clapboard-style siding embossed with a wood-grain pattern. The siding is painted light brown and replaced the original cement-asbestos siding.

The support building windows have 1/1 double-hung, vinyl-clad wood sash fitted with white combination storm/screen units. The windows and siding were installed in the mid-1970s to replace the building's original wood sash windows.

The women's latrine, on the north side of the hall adjacent to the kitchen, was added in the mid-1980s when the Air Force began to assign women to the Minuteman sites. At some time since 1991 the floor of the shower stall was damaged.

The carpet has continued to suffer wear since 1991, resulting in tears and spots of wear.

Other changes undertaken since decommissioning in 1994, the stand-down from operational status, are primarily limited to the introduction of a dry pipe fire sprinkler system and changes to all locks and door handles.

An open bay was built in 1968 to provide a parking area for vehicles and equipment. The garage was enclosed in 1975.

A beige fabric headliner was attached to the ceiling framework in the launch control center with Velcro in 1990 to help reduce noise levels inside the enclosure. Also, a sleeping compartment was installed in the mid-1980s replacing a bolted-down military cot that had occupied the same space.

The recent (2000) introduction of a cellular telephone tower north-northeast of Delta One has altered the landscape from its historic condition. Because of its location, the tower forms a backdrop to the facility suggesting that the tower is part of the Delta One facilities; however, the tower is outside the boundaries of the national historic site and has no association with it. It is believed that the integrity of the remaining landscape constituents remains remarkably intact.

*Delta Nine* — The most observable change at Delta Nine is a glass viewing enclosure over the missile silo. This viewing window was constructed in 2001 as part of the requirements of the START treaty, which precipitated the deactivation of the Minuteman missile system. Lights were added to the launch tube, and a dehumidifier was added in the upper launch equipment room.

Along the northwest side of the upper level of the launch equipment room are racks of electronic equipment used to monitor and troubleshoot the missile, communicate with the launch control center, and conduct the countdown. Numerous power filters were removed throughout the site. For START Treaty purposes, the HICS cable was in the electrical surge arrestor (ESA) room and wires were cut to an observation hole in the D-box. Twelve large storage batteries in the lower level of the equipment room of the launch facility, which would have provided emergency power to the site, have been removed.

The hardened ultra-high-frequency (UHF) receiving antenna is a few feet northwest of the silo opening. It was installed sometime in 1968 to link the launch facility with the Strategic Air Command's airborne launch control center.

***Delta One and Delta Nine, Fire Detection and Security System*** — After decommissioning in 1994 both the Delta One and Delta Nine installations remained under the management of the U.S. Air Force. During that time system upgrades continued in cooperation with the National Park Service. In 2001, with the knowledge that management of the installations would be turned over to the National Park Service, the process of upgrades to the security system continued. These upgrades were designed for NPS and not military purposes. As a result, additional passive monitoring systems were installed. These systems do not include television monitors. In all alternatives proposed, these systems would be used by NPS personnel. Because these systems were not originally designed as part of the security system of the installation when on active alert, they are recent alterations to the historic fabric of the structures.

***Delta One and Delta Nine, The Collection*** — As part of the mothballing procedures carried out after decommissioning and pending NPS acquisition of the facilities, some objects were moved at different times to the South Dakota Air and Space Museum at Ellsworth Air Force Base for storage and safekeeping.

**Present and Foreseeable Future Actions, Delta Nine.** The general topography and terrain of gently rolling prairie remains very much as it was during the period of active status from 1963 to 1991. However, private individuals have purchased land adjacent to the installation. It is unknown if there are current plans to construct a residence or other

structures that would compromise the cultural landscape.

**Present and Foreseeable Future Actions, Delta One and Delta Nine.** Construction is proposed for the DM&E (Dakota, Minnesota, and Eastern) railroad line near both Delta facilities.

The Prairie Homestead, listed on the National Register of Historic Places and located immediately outside the main entrance to Badlands National Park, consists of a single room dug in to the side of a hill with an attached stacked sod addition. Internal changes to the structure have altered its historic character when compared to its period of significance. The viewshed of the Prairie Homestead has been altered considerably since its original construction. In particular the addition of the modern visitor's center has been a substantial change to the historic viewshed.

A new museum and collection storage structure was constructed near the Ben Reifel Visitor Center in Badlands National Park. It provides facilities for curation of Minuteman Missile National Historic Site.

## Natural Resources

For the air quality impact topic, a different geographic area was used in the analysis of cumulative impacts. Because air quality impacts affecting the national historic site result from actions occurring over a large area, the cumulative impacts area for this topic was the airshed extending west to the Black Hills and Wyoming.

The primary projects and actions that could contribute to cumulative effects are summarized below. These include on-going and planned actions and projects in the Badlands area, the national historic site area, the Pine Ridge Indian reservation, nearby communities, and adjacent counties.

### Actions and Projects inside Badlands National Park

- A general management plan that will provide overall direction for the park over the next 25 years is under review.
- Additional facilities have recently been built in the headquarters area, including a fire cache and resource management and museum collection storage structures. The Ben Reifel Visitor Center was remodeled and expanded, with the installation of new exhibits.
- The Sage Creek campground in Badlands will be redesigned to meet the needs of diverse users seeking access to the backcountry while protecting surrounding natural and cultural resources. Among the options being considered is providing new parking areas, campsites, and group camping shelters in the existing campground footprint, and expanding the campground's footprint to provide new separate use areas for horse users and group camping.

### Other Actions and Projects

- The U.S. Forest Service recently published its "Nebraska National Forest Plan," which includes the Buffalo Gap National Grassland (USFS 2001). The plan calls for several actions that may affect the national historic site. Actions that may be taken in the grassland in the future that could affect the national historic site include changes in public access (e. g., limiting or closing public access in areas adjacent to the national historic site), changing live-stock stocking rates, and changes in fuel treatments, such as prescribed burning.
- The Mni Wiconi water project is a regional water distribution system being built to bring potable water from the Missouri River to western South Dakota. The construction is primarily within the road prism of existing roads, thus reducing the adverse impacts of the project.

- The DM&E rail line, a new railroad line, would be built primarily to transport coal from the Powder River Basin of north-eastern Wyoming to the Midwest. On January 30, 2002, DM&E received regulatory approval from the U.S. Surface Transportation Board to proceed with the \$1.5 billion project. Although the railroad route has been approved, construction has been delayed because of court challenges.
- A number of energy development projects are being proposed in the Powder River Basin of northeastern Wyoming. A group of oil and gas companies is proposing to extract coal bed methane on public lands. The Bureau of Land Management (2002) forecast that about 39,000 new coal bed methane wells and 3,200 oil wells would be developed and operated on federal lands in the Wyoming portion of the Powder River Basin, along with a somewhat smaller coal bed methane project in the Montana portion of the basin, as well as various support facilities in the region. Other proposed facilities in the area include a 500 MW coal-fired power plant (WYGEN 2) near Gillette, Wyoming, as well as the Two Elks Unit #2 and the Mid-PRB 500 MW power plants. Increased emissions are expected from the Dacotah Cement plant near Rapid City.

### IMPAIRMENT OF NATIONAL HISTORIC SITE RESOURCES

In addition to determining the environmental consequences of implementing the preferred and other alternatives, NPS *Management Policies 2006* (section 1.4) requires analysis of potential effects to determine whether or not proposed actions would impair national historic site resources and values.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve national historic site resources and values. NPS managers must always seek ways to

avoid, or to minimize to the greatest degree practicable, adverse impacts on national historic site resources and values. However, the laws do give the National Park Service the management discretion to allow impacts on national historic site resources and values when necessary and appropriate to fulfill the purposes of the national historic site, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within a national park system unit, that discretion is limited by the statutory requirement that the National Park Service must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of national historic site resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values (NPS *Management Policies 2006* 1.4.5). An impact on any national historic site resource or value may constitute an impairment. An impact would be more likely to constitute an impairment to the extent it affects a resource or value whose conservation is

- necessary to fulfill specific purposes identified in the enabling legislation or proclamation of the national historic site;
- key to the natural or cultural integrity of the national historic site or to opportunities for enjoyment of the national historic site; or
- identified in the national historic site's general management plan or other relevant NPS planning documents as being of significance.

Impairment could be caused by NPS activities or activities undertaken by concessioners, contractors, and others operating in a national park system unit. A determination on impairment is made in the “Environmental Consequences” section in the conclusion section for each required impact topic — natural and cultural resources and values. When it is determined that an action(s) would have a moderate to major adverse effect, a justification for nonimpairment is made. Impacts of only negligible or minor intensity would by definition not result in impairment. An evaluation of impairment is not required for impact topics related to visitor use and experience (unless the impact is resource based), NPS operations, or the socioeconomic environment.

## METHODS AND ASSUMPTIONS FOR ANALYZING IMPACTS

The planning team based the impact analysis and the conclusions in this chapter largely on the review of existing literature and studies, information provided by experts in the National Park Service and other agencies, and national historic site staff insights and professional judgment. The team's method of analyzing impacts is further explained below. It is important to remember that it is assumed in the analyses that the mitigative measures described in the "Alternatives Including the Preferred Alternative" chapter would be applied to minimize or avoid impacts. If these measures were not applied, the potential for resource impacts and the magnitude of those impacts would increase.

Director's Order 12, "Conservation Planning, Environmental Impact Analysis, and Decision Making," presents an approach to identifying the type (adverse or beneficial), the intensity or magnitude (e.g., negligible, minor, moderate, or major) of the impact(s), the duration (short or long term), and that approach has been used in this document. Effects can be either adverse or beneficial for the topic being analyzed. The effects can be direct or indirect. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later or farther away, but are still reasonably foreseeable.

Impact intensity refers to the degree or magnitude to which a resource would be positively or negatively affected. Each impact was identified as negligible, minor, moderate, or major in conformance with the criteria for these classifications provided below by impact topic. Most intensities are expressed qualitatively.

Context refers to the setting within which an impact occurs, such as the affected region or locality. In this document most impacts are for one Delta facility or another or both.

Cumulative impacts are either for the national historic site or the region (e.g., air quality impacts).

The impact analyses for the no-action alternative compare resource conditions in the year 2031 to existing conditions in 2006. The impact analysis for the action alternatives (alternative 2, 3, and 4) compare the action alternatives in the year 2031 to the no-action alternative in the year 2031. Said differently, the impacts of the action alternatives describe the *difference between* implementing the no-action alternative and implementing the action alternatives. To understand a complete "picture" of the impacts of implementing any of the action alternatives, the reader must also take into consideration the impacts that would occur under the no-action alternative.

### CULTURAL RESOURCES

#### **Cultural Resources Listed, or Eligible to be Listed, in the National Register of Historic Places**

Potential impacts on cultural resources (archeological resources, prehistoric or historic structures, cultural landscapes, and traditional cultural properties) either listed in or eligible to be listed in the National Register of Historic Places were identified and evaluated in accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 CFR 800, Protection of Historic Properties): by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are national register-listed or -eligible; (3) applying the criteria of adverse effect to affected resources; and (4) considering ways to avoid, minimize or mitigate adverse effects.



Under the Advisory Council's regulations a determination of adverse effect or no adverse effect must be made for affected national register-listed or -eligible cultural resources. An adverse effect occurs whenever an action alters directly or indirectly any of the characteristics of a cultural resource that qualify it for inclusion in the national register, i.e., diminishing the integrity (the extent to which a resource retains its historic appearance) of the resource's location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance or be cumulative (36 CFR 800.5(a)(1)). A determination of no adverse effect means there is an effect, but the effect would not meet the criteria of adverse effect (36 CFR 800.5(b)).

In this general management plan the criteria for characterizing the severity or intensity of impacts on national register-listed or -eligible archeological resources, prehistoric or historic structures, and cultural landscapes (there are no cultural resources designated traditional cultural properties at the national historic site) are the §106 determinations of effect: adverse effect or no adverse effect.

### **Ethnographic Resources and Museum Collections**

Ethnographic resources that are not traditional cultural properties and museum collections (prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens), which are generally ineligible for listing in the national register, are not subject to Section 106 of the National Historic Preservation Act. In this general management plan potential impacts to ethnographic resources and museum collections are described in terms of context (are the effects site-specific, local, or even regional?), duration (are the effects short term — lasting less than a year, long term — lasting

more than a year, or permanent?) and intensity (is the degree or severity of effects negligible, minor, moderate, or major). The definitions of impact intensity for ethnographic resources and museum collections follow:

#### ***Ethnographic Resources***

***Negligible:*** Impact(s) would be barely perceptible and would neither alter resource conditions, such as traditional access or site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs.

***Minor:*** Adverse impact — Impact(s) would be slight but noticeable but would neither appreciably alter resource conditions, such as traditional access or site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs.

Beneficial impact — Action(s) would allow access to and/or accommodate a group's traditional practices or beliefs.

***Moderate:*** Adverse impact — Impact(s) would be apparent and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group's practices and beliefs, even though the group's practices and beliefs would survive.

Beneficial impact — Action(s) would facilitate traditional access and/or accommodate a group's practices or beliefs.

***Major:*** Adverse impact — Impact(s) would alter resource conditions. Something would block or greatly affect traditional access, site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs, to the extent that the survival of a group's beliefs and/or practices would be jeopardized.

Beneficial impact — Action(s) would encourage traditional access and/or accommodate a group's practices or beliefs.

### *Museum Collections*

**Negligible:** Impact is at the lowest levels of detection — barely measurable with no perceptible consequences, either adverse or beneficial, to museum collections.

**Minor:** Adverse impact — would affect the integrity of few items in the museum collection but would not degrade the usefulness of the collection for future research and interpretation.

Beneficial impact — would stabilize the current condition of the collection or its constituent components to minimize degradation.

**Moderate:** Adverse impact — would affect the integrity of many items in the museum collection and diminish the usefulness of the collection for future research and interpretation.

Beneficial impact — would improve the condition of the collection or protect its constituent parts from the threat of degradation.

**Major:** Adverse impact — would affect the integrity of most items in the museum collection and destroy the usefulness of the collection for future research and interpretation.

Beneficial impact — would secure the condition of the collection as a whole or its constituent components from the threat of further degradation.

## NATURAL RESOURCES

### **Methodology and Definitions**

The natural resource impact topics that are analyzed in this document include air quality, vegetation, and wildlife. Information on known resources was compiled and compared with the locations of proposed developments and other actions. The impact analysis was based on the knowledge and best professional judgment of park staff, planners, biologists, data from park records, and studies of similar actions and impacts when applicable.

Beneficial impacts would improve the natural

resource; adverse impacts would negatively affect natural resources. The planning team qualitatively evaluated the impact intensities for all of the natural resource impact topics.

**Air Quality.** For air quality the following impact intensity definitions were used:

**Negligible Impact:** An impact would have no measurable or detectable effect on air quality.

**Minor Impact:** An impact would have a slight effect, causing a change in air emissions or visibility.

**Moderate Impact:** An impact would be clearly detectable and would cause an appreciable change in local air emissions or visibility.

**Major Impact:** An impact would cause a substantial, highly noticeable change in local or regional air emissions or visibility.

**Duration of Impact:** Short-term effects would be temporary, lasting a year or less, such as effects associated with construction. Long-term effects would last more than one year and could be permanent, such as the loss of vegetation due to construction of a new facility.

**Vegetation and Wildlife.** For vegetation and wildlife the following impact intensity definitions were used:

**Negligible Impact:** An impact that may result in a change in vegetation or wildlife, but the change would be at the lowest level of detection or not measurable. Ecological processes would not be affected.

**Minor Impact:** An impact that would result in a detectable change, but the change would be slight and have a localized effect on a population. This could include changes in the abundance or distribution of individuals in a localized area, but not changes that affect the viability of local populations. Changes to localized ecological processes would be minimal.

**Moderate Impact:** An impact that would result in a clearly detectable change in a population and could have an appreciable effect. This could include changes in the abundance or distribution of local populations, but not changes that affect the viability of regional populations. Changes to localized ecological processes would be of limited extent.

**Major Impact:** An impact that would be severely adverse or exceptionally beneficial to a population. These impacts would be substantial and highly noticeable and may result in widespread change and be permanent in nature. This could include changes in the abundance or distribution of a local or regional population to the extent that the population would not be likely to recover (adverse) or would return to a sustainable level (beneficial). Significant ecological processes would be altered, and landscape-level changes would be expected.

**Duration of Impact:** Short-term effects would be temporary, lasting a year or less, such as effects associated with construction. Long-term effects would last more than one year and could be permanent, for example, the loss of vegetation due to construction of a new facility.

## VISITOR USE AND EXPERIENCE

This impact analysis considers various aspects of visitor use and experience at Minuteman Missile National Historic Site, including the effects on the general quality of the visitor experience, the overall range of visitor opportunities, and the comprehensiveness of interpretive opportunities. The analysis is based on how visitor use and experiences would change with the way management zones were applied in the alternatives. Impacts on visitor use and experience were determined considering the best available information, including public input and information provided by national historic site staff and planning professionals. Beneficial impacts would improve visitor use and

experiences; adverse impacts would negatively affect visitor use and experiences.

For analysis purposes, impact intensities and duration for visitor experience impact topics have been defined as follows:

**Negligible:** Visitors would likely be unaware of any effects associated with implementation of the alternative.

**Minor:** Changes in visitor use and/or experience would be slight but detectable, would affect few visitors, and would not appreciably limit or enhance experiences identified as fundamental to the park's purpose and significance.

**Moderate:** Some characteristics of visitor use and/or experience would change, and many visitors would likely be aware of the effects associated with implementation of the alternative; some changes to experiences identified as fundamental to the park's purpose and significance would be apparent.

**Major:** Multiple characteristics of visitor experience would change, including experiences identified as fundamental to park purpose and significance; most visitors would be aware of the effects associated with implementation of the alternative.

**Duration of Impact:** Short-term effects would be temporary, lasting less than five years, such as the effect associated with constructing a visitor / administrative facility. Long-term effects would last more than one year and would be permanent, for example the requirement for reservations to tour the underground capsule.

## THE SOCIOECONOMIC ENVIRONMENT

### Methodology

Minuteman Missile National Historic Site is one of the many visitor attractions in southwest South Dakota. Developments

proposed by the alternatives could have a direct effect on some parts of the regional social and economic environment. Members of the planning team applied logic, experience, professional expertise, and professional judgment to analyze the impacts on the social and economic situation resulting from implementing each alternative.

Economic data, expected future visitor use, and future developments in the national historic site were all considered in identifying and discussing expected impacts. Although a simplistic quantitative and qualitative analysis of the direct effects of each alternative was completed, identification of these impacts is sufficient for decision-making purposes.

Minuteman Missile National Historic Site will operate within the regional social and economic environment of Jackson, Pennington, and Shannon Counties. Impacts on the social and economic condition in these counties due to developing NPS operations are of concern to the National Park Service, NPS managers, local communities and individuals, local governments, and the public.

**Regional and Local Economy.** Changes in the three-county regional economy, including local gateway communities, would include impacts on the regional and local socioeconomic base due to development of the national historic site and the operation and management of its facilities. The socioeconomic base includes such factors as population, income, employment, and earnings. NPS development projects at Delta One and Delta Nine should benefit the local construction industry. NPS operations would provide some employment opportunities for a small number of people.

The context, intensity, and duration of impacts of the action alternatives are compared to the no-action alternative. Context refers to the relative area within which impacts occur. For the most part, impacts from the action alternatives would affect the three-county regional area.

Impact intensity is the degree to which an impact topic is positively or negatively affected. For this analysis, impacts on recreation visitation and associated socioeconomic indicators such as population and income were qualitatively evaluated and described. Beneficial impacts would improve the socioeconomic environment; adverse impacts would negatively affect the socioeconomic environment. The following socioeconomic impact thresholds were used to describe the level of impact:

**Negligible:** No effects occur or the effects on socioeconomic conditions are below or at the level of detection.

**Minor Impact:** The effects on socioeconomic conditions are small but detectable, and only affect a small number of firms and/or a small portion of the population. The impact is slight and not detectable outside the affected area.

**Moderate Impact:** The effects on socioeconomic conditions are readily apparent. Any effects result in changes to socioeconomic conditions on a local scale (e.g., in a gateway community) in the affected area.

**Major Impact:** The effects on socioeconomic conditions are readily apparent. Measurable changes in social or economic conditions at the county or two-county regional level occur. The impact is severely adverse or exceptionally beneficial within the affected area.

**Duration of Impact:** Short-term impacts would last less than three years. Long-term impacts would last more than three years and could be considered a permanent change in conditions.

## NPS OPERATIONS

The impacts analysis evaluated the effects of the alternatives on the following aspects of NPS operations:

- administration and operations including staffing
- facilities and maintenance including security

The impacts of each action alternative were evaluated based on the potential changes to operations in the national historic site under each alternative. These effects were compared to the existing operations that are described in alternative 1, the no-action alternative. The analysis focuses on how NPS operations and facilities might vary under the different management alternatives.

Only the impacts related to new activities within each action alternative, those likely to undergo major operational changes, or those that are likely to increase or decrease in the level of activity are included in the analysis. Most daily and programmatic activities would likely have negligible effects, i.e., there would not be measurable change in or difference in NPS operations. These activities are generally not included in the analysis. The analysis is more qualitative than quantitative because of the conceptual nature of the alternatives. Consequently, professional judgment was used to reach reasonable conclusions as to the intensity, duration, and type of potential

impact. Beneficial impacts would improve NPS operations; adverse impacts would negatively affect NPS operations.

**Negligible:** NPS operations would not be affected or the effect would be at or below detectable levels and would not have an appreciable effect.

**Minor:** The effects would be detectable, but would be of a magnitude that would not have an appreciable effect on NPS operations.

**Moderate:** The effects would be readily apparent and would result in a change in NPS operations in a manner noticeable to staff and the public.

**Major:** The effects would be readily apparent and would result in a substantial change in NPS operations in a manner highly noticeable to staff and the public.

**Duration of Impact:** Short-term impacts would last less than five years and would be short lived or temporary due to construction, restoration, or rehabilitation activities. Long-term effects would last more than three years and would be permanent and continual.

## IMPACTS OF ALTERNATIVE 1, NO ACTION

### IMPACTS ON CULTURAL RESOURCES

#### Historic Buildings and Structures Analysis

**Delta One.** The original environmental control systems such as temperature and humidity would be retained. No upgrades or improvements would be undertaken until the system failed. Although use of environmental monitoring and temporary dehumidification equipment would be implemented, the environment in the historic structures would continue to vary. The resulting effect on buildings from variable temperature and humidity would continue to be adverse.

Because the original heating system in the garage has failed, it would be replaced with a similar capacity and system type. Replacement would be expected to have no adverse effect on the historic garage.

Although staff and visitor use is limited in this alternative, some ongoing level of wear to the facades and surfaces of the historic buildings and structures resulting from mechanical wear and touching/rubbing and deposition of natural oils and dirt by visitors would continue to occur. However, ongoing maintenance would limit the effect of these impacts and so would result in no adverse effect.

The garage would continue to be used for its current nonhistoric purpose of storing spare parts and administrative items. Impacts on the structure resulting from such use as a storage facility would have no adverse effect.

The entry drive just outside the chain-link fence would be used for car caravan tour parking. This level of use would be expected to increase wear on the drive, but would be mitigated by routine maintenance and therefore result in no adverse effect on the pavement.

Modifications for visitors with disabilities, such as temporary and removable ramps, would result in no adverse effect on historic buildings and structures because placement of such constructions would not directly impact the historic buildings.

Security system upgrades would be limited to minor upgrades to existing equipment. This action would have no adverse effect on the historic structures.

**Delta Nine.** Closure of the missile silo and support building to visitors would continue to limit environmental infiltration (e.g., heat and humidity) into the structures. Operation of dehumidification equipment, environmental monitoring, and occasional maintenance activities designed to maintain the facilities in a stable state would continue. Impacts from these actions would be beneficial and have no adverse effect.

After-hours unregulated access to the azimuth markers and HICS markers outside the chain-link fence could result in damage from vandalism. However, depending on the type and level of vandalism, the resulting impacts would be expected to range from no adverse to an adverse effect.

**Cumulative Impacts.** Within the national historic site, changes to historic buildings and structures have been ongoing since the construction of the installations in 1962 (e.g., installation of the ISST antenna system and television satellite dish). Nevertheless, most of the original design elements remain intact. Changes undertaken by the Air Force and National Park Service since deactivation, such as installation of a dry pipe sprinkler system in the support building at Delta One and increased fire protection and security monitors at both installations, are both a visual intrusion into the historic condition as well as altering historic fabric; however, these

changes would not constitute an adverse impact because effects would be unobtrusive and there would be minimal effect on the historic fabric.

Outside the national historic site and directly north of Badlands National Park is the Prairie Homestead, a privately owned dugout/sod house near the eastern entrance gate. The structure is listed on the National Register of Historic Places. The current owners are reluctant to continue ownership and its operation as a visitor site. If the structure is closed, the level of protection for the structure would be uncertain and it could possibly be allowed to deteriorate. If this were to occur there would be an adverse effect on this historic property.

Construction of the proposed DM&E Railroad line near Delta One and Delta Nine would result in a considerable release of emissions of soot from the diesel locomotives. The number of coal train transits is expected to be high and could result in changes to the appearance and exterior condition of the buildings and structures. These impacts could result in an adverse effect on the historic buildings and structures.

Because the installation of the viewing enclosure over the silo created different environmental conditions (a sort of greenhouse effect), new equipment was installed to stabilize the environmental conditions. This caused an adverse impact on historic fabric; however this has had no adverse effect.

As described above, implementation of the no-action alternative would primarily result in no adverse effects on historic buildings and structures. Yet, due to the adverse impacts of other past, present, or reasonably foreseeable actions, the cumulative impact would be adverse. The no-action alternative, however, would contribute only minimal adverse impacts to the overall adverse cumulative impact.

**Conclusion.** Continuing current management practices would have no adverse effect on historic structures.

Implementing the no-action alternative would contribute only slightly to the overall adverse cumulative effects on the historic structures in the area.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

### **Cultural Landscapes Analysis**

At Delta Nine, social trails created by visitors wanting to examine the azimuth or HICS markers could be seen from the road but would have no adverse effects on the cultural landscape because they would not be permanent and measures to eliminate such trails would be undertaken. After elimination, affected areas would be revegetated with native vegetation and returned to their original form and contour.

Although HICS posts and azimuth markers would be vulnerable to unregulated visitation, no adverse impacts would be expected because any damage would be mitigated.

**Cumulative Impacts.** The recent (2000) introduction of a cellular telephone tower north-northeast of Delta One has altered the landscape from its historic condition. Because of its location, the tower forms a backdrop and can be misinterpreted as part of the Delta One facilities. The tower is outside the national historic site boundary and has no association with it. Although the integrity of the remaining surrounding cultural landscape

elements is remarkably intact, this visual intrusion would continue to have an adverse effect.

Within the national historic site, changes to historic buildings and structures have been ongoing since the construction of the installations in 1962 (e.g., installation of the ISST antenna system and television satellite dish and construction of the garage). Nevertheless, most of the original design elements remain intact. Changes undertaken by the Air Force and National Park Service since deactivation, such as installation of a dry pipe sprinkler system in the support building at Delta One and increased fire protection and security monitors at both installations, intrude into the historic condition as well as altering historic fabric yet constitute no adverse effect on the cultural landscapes of either Delta One or Delta Nine because effects would be unobtrusive and there would be minimal effect on the historic fabric.

Outside the national historic site and directly north of Badlands National Park is the Prairie Homestead, a privately owned dugout/sod house near the eastern entrance gate. The structure is listed on the National Register of Historic Places. The current owners have built a wooden visitor center and store at the base of the slope upon which the dugout sits. Also a paved highway leading from Interstate 90 to Badlands National Park is in front of the visitor center. Trails have also been constructed. Overall, these actions have altered the original setting of the house but are limited and have had no adverse effect on the cultural landscape.

There are private lands nearly surrounding Delta One, and individuals have purchased land adjacent to Delta Nine. It is unknown if there are plans to construct residences or other structures. If that should occur, the presence of such structures could have an adverse effect on the cultural landscape at both Delta facilities.

Since its original construction a glass viewing enclosure over the missile silo at Delta Nine has been added due to the implementation of the START Treaty. This change has resulted in an adverse effect on the cultural landscape at Delta Nine.

Construction of the proposed DM&E Railroad line north of the Delta installations could result in an increase of low-frequency noise resulting from passage of coal trains as well as whistles and track noises, which could impact the quiet of the historic cultural landscape on a regular and frequent basis. This would be expected to result in an adverse impact on the cultural landscape.

As described above, implementation of the no-action alternative would result in no adverse effects on cultural landscapes. Yet, due to the overall adverse impacts of other past, present, or reasonably foreseeable actions, the cumulative impact would be adverse. The no-action alternative, however, would not contribute any adverse impacts to the adverse cumulative impact.

**Conclusion.** Continuing current management practices would not contribute adverse effects on the cultural landscapes at either of the Delta facilities. Although the cumulative impact would be adverse, the implementation of this alternative would not contribute any adverse impacts to the adverse cumulative impact.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.



### **Ethnographic Resources Analysis**

Based on the development of a Scope of Collections statement, oral histories and other ethnographic data associated with the Minuteman Missile system would continue to be accepted as opportunity and funding permits. No formal program of outreach to collect such information would be initiated. Minor long-term beneficial impacts on historic ethnographic data collected could occur if the no-action alternative were implemented.

However, there could also be long-term moderate to major adverse impact on ethnographic resources because of the lack of a formal program of outreach and the advancing age of people who could contribute these oral histories and potential lost opportunities to collect these histories.

**Cumulative Impacts.** Other past, present, and reasonably foreseeable future actions, as described in the methodology section of this chapter, would have no effect on ethnographic resources. Therefore, there would be no cumulative impacts on ethnographic resources under the no action alternative.

**Conclusion.** Because acceptance of ethnographic data would occur, impacts on ethnographic resources would be long term, minor, and beneficial.

There could also be long-term moderate to major adverse impacts because of the lack of a formal program of outreach and the advancing age of those who could contribute oral histories and the subsequent lost opportunities to collect them.

There would be no cumulative impacts resulting from the implementation of this alternative.

Because there would be no major, adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation

or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the Historic Site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic sites resources or values.

### **Museum Objects/Collection Analysis**

No active collection acquisitions would be pursued in this alternative, which would be a long-term negligible to minor adverse impact; however, limited relevant items donated to the national historic site would continue to be accepted, which would be a long-term negligible beneficial impact. This would have a long-term negligible impact on the collections. Items for donation that were not within staffing and funding limitations would be referred to other appropriate repositories.

There could be a negligible to minor adverse long-term impact from limitations on accepting donated items that would add to the value and depth of the collection.

The material culture and archival items returned from Ellsworth Air Force Base are currently stored in an off-site facility (Badlands National Park), which meets NPS museum standards. Continuing storage at this facility at would have a long-term moderate beneficial impact on the collections.

Some of the original museum objects would remain in their historic locations at the Delta facilities. In this alternative the historic environmental systems would be used to control temperature, humidity, light, and pests. These actions could result in long-term minor beneficial impacts on the museum objects.

**Cumulative Impacts.** During the activities associated with the deactivation of the Delta facilities by the U.S. Air Force, many of the museum objects were removed from their original context and were placed in storage at Ellsworth Air Force Base. Adverse long-term

impacts resulting from a lack of adequate curatorial space and appropriate environmental controls have ranged from negligible to minor.

A new collection storage structure, built near the Ben Reifel Visitor Center in Badlands National Park, used to house the museum objects would have a beneficial long-term minor to moderate beneficial impacts on the museum objects associated with the national historic site and Badlands National Park.

Overall, the minor beneficial impacts of past, present, and reasonably foreseeable future actions by others, in combination with the adverse actions in alternative 1, would be expected to have long-term minor beneficial cumulative impacts. Implementation of the alternative would contribute somewhat to the overall minor beneficial cumulative impacts on museum objects.

**Conclusion.** The no-action alternative would result in long-term minor beneficial impacts. Implementation of the alternative would contribute somewhat to the overall minor beneficial cumulative impacts on museum objects.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

## IMPACTS ON NATURAL RESOURCES

### Air Quality

**Analysis.** No new developments or emission sources would result from this alternative. Therefore there would be no new impacts on

air quality. Alternative 1 would continue to result in negligible adverse effects from long-term vehicle emissions associated with visitors to the site. These effects would be localized and would not adversely affect regional air quality.

**Cumulative Impacts.** There are several actions in and outside the national historic site that would likely affect the national historic site's air quality and visibility. Proposed construction activities in Badlands National Park (e.g., the Lakota Heritage and Education Center) and prescribed burns would result in short-term, localized impacts on air quality; in some cases the impacts could be moderate to major. However, sources outside the national historic site add far more pollutants to the regional airshed. In particular, energy and industrial developments in the Powder River Basin in Wyoming could have a substantial impact on the national historic site's air quality. Other actions outside the national historic site that likely would affect the national historic site's air quality include prescribed fires and wild fires, construction and operation of the DM&E rail line, construction of the Mni Wiconi water project, and possibly designation of the Crazy Horse Scenic Byway. The impacts of the above other actions, in combination with the impacts of alternative 1, would result in moderate adverse cumulative impacts. However, alternative 1 would have only a slight contribution to the overall cumulative impact.

**Conclusion.** Alternative 1 would have no impact on the national historic site's air quality.

The impacts of the other reasonably foreseeable actions, in combination with the impacts of alternative 1, would result in moderate adverse cumulative impacts. However, alternative 1 would have only a slight contribution to the overall cumulative impacts.

## Vegetation

**Analysis.** Under this alternative there would be no new impacts on vegetation. NPS staff would continue to mow the compounds at Delta One and Delta Nine, primarily to reduce the threat of a grass fire destroying or damaging these historic building and structures.

**Cumulative Impacts.** Construction of the DM&E rail line would result in the loss and alteration of vegetation near the national historic site. Construction and operation of the rail line also could help spread invasive weeds in the region. Construction of the Mni Wiconi water pipeline would likely have a negligible impact on vegetation because it would be built along roads where native vegetation has already been altered. Increases in prescribed burns in the adjacent national grassland, as identified in the *Land and Resource Management Plan for the Nebraska National Forest and Associated Units* (USFS 2001) would have a beneficial impact on range condition.

Overall, when the impacts of the above actions occurring within and outside the national historic site are added to the actions in alternative 1, there is the potential for long-term, minor cumulative adverse impacts on vegetation in the region. However, the implementation of this alternative would make a very small contribution to the overall cumulative adverse impacts in the region, because the impact on vegetation in this alternative would be limited to mowing two relatively small areas.

**Conclusion.** There would be no new impacts on the national historic site's natural vegetation under alternative 1. There would be minor adverse long-term cumulative impacts on native vegetation largely due to actions occurring outside the national historic site. These levels of impacts would not be sufficient to constitute an impairment of national historic site resources or values.

## Wildlife

**Analysis.** Within the national historic site, management activities, such as maintenance would likely continue to temporarily disturb some animals. No wildlife habitat would be lost to development of visitor facilities. Therefore this alternative is expected to result in negligible short-term adverse impacts on wildlife populations or habitats.

**Cumulative Impacts.** The construction of some developments, such as the Mni Wiconi water project and the DM&E rail line, would affect the behavior, distributions, and movements of some wildlife along those routes, such as dispersion of wildlife away from construction activity with reoccupation anticipated following construction, the loss of some less mobile species due to construction activities, and reduction in habitat quality for adjacent areas due to noise and human activity during construction. The operation of the rail line also would affect the behavior of wildlife and could result in some animals being injured or killed through collisions. U.S. Forest Service actions in the Buffalo Gap National Grasslands adjacent to the national historic site might improve wildlife habitat through prescribed burning.

The above actions, added to what would happen at the national historic site under this alternative, would be expected to result in a negligible cumulative impact that would affect wildlife populations either in the national historic site or regionally.

**Conclusion.** Alternative 1 would be expected to have a negligible, short-term, adverse impact on national historic site wildlife populations in localized areas, primarily from disturbance by NPS staff. Negligible cumulative impacts would be expected. No impairment of national historic site resources or values would occur as a result of implementing this alternative.

## **IMPACTS ON VISITOR USE AND EXPERIENCE**

### **General Quality of the Visitor Experience**

In the no-action alternative, visitors would continue to experience the military facilities at the historic sites in their current condition, as mothballed facilities. Only essential preservation and stabilization activities would be performed. Minor damage that has occurred since deactivation and mothballing would remain, and major damage would be repaired. Some artifacts and objects would be in their original location; others would remain in storage and not be available to visitors. This limited and less-than-accurate portrayal of the facilities would continue to limit visitor understanding and would constitute a minor to moderate adverse impact.

Because of the limited number and size of ranger-led tours, many visitors would continue to be unable to experience the Delta facilities. This would be a major adverse impact on the quality of the experience. The project office would continue to provide some supplemental information, which would be beneficial for visitors unable to take the tours. However, the project office is small and interpretation would continue to be limited.

Access to Delta Nine would remain difficult for visitors in wheelchairs because the gravel surface would continue to be difficult to move through.

With limited staffing at the national historic site, the partnership agreement with the South Dakota Air and Space Museum would not greatly enhance interpretation of the missile field and the Cold War era or increase visitor understanding of missile operations.

### **Overall Range of Visitor Opportunities**

The range of opportunities at the national historic site in this alternative would continue to be limited to ranger-led tours or driving to

the sites and seeing them through the fences, basic interpretation at the project office, and national historic site website information. Because this narrow range of opportunities would affect most visitors, this would be a continuing moderate to major adverse impact.

### **Comprehensiveness of Interpretive Opportunities**

Interpretive opportunities would remain limited in this alternative to some basic publications and a limited number of ranger-led tours. For visitors unable to participate in the tours, there would be little opportunity to really understand the facilities. These narrow options would continue to impact most visitors, and this would be a major adverse impact.

### **Cumulative Impacts**

The South Dakota Air and Space Museum at Ellsworth Air Force Base exhibits and interprets a variety of bombers, fighters, utility aircraft, missiles, plus many indoor exhibits of aviation memorabilia. Among these are a Minuteman Missile II silo and a cutaway of the underground capsule. This is the only Minuteman Missile interpretive action that occurs outside the national historic site. When these impacts are added to the minimal range and comprehensiveness of interpretive opportunities available at the national historic site under alternative 1, the result would be a long-term minor and beneficial cumulative effect for visitors. Impacts of alternative 1 would comprise the majority of this beneficial effect.

### **Conclusion**

Because of the mothballed appearance and limited interpretation and visitor access to the Delta facilities, the overall quality of the visitors' experiences and the potential for understanding the national historic site would

be very limited. This would constitute a major adverse impact on visitors. The cumulative impacts on visitors would be long term, minor, and beneficial; impacts from implementing alternative 1 would comprise most of these effects.

## **IMPACTS ON THE SOCIOECONOMIC ENVIRONMENT**

### **Analysis**

The implementation of the no-action alternative would be expected to be negligible on the overall regional tourism and recreational economy because of the limited staff and facilities available. Although many visitors would be interested in the new national historic site plus the unscheduled visitation caused by the project office's location along a major access route to Badlands National Park, only a small percentage would have the opportunity to tour the Delta facilities.

Development expenditures of about \$1,035,248 would be needed to provide basic stabilization and maintenance of the Delta facilities and to operate the project office at exit 131. Most funds would be for construction labor and materials to stabilize the Delta facilities.

A total of eight employees would be needed. The expenditures of funds (such as maintenance of heating and cooling systems) would not occur all at one time but take place over the lifetimes of the various development projects and over the life of this plan (25 years) — thus spreading out their effect on the local economy.

An annual operating budget of nearly \$624,000 would be required to fully implement this alternative. These expenditures would continue to be a long-term continuing commitment of support by the National Park Service. The total costs of alternative 1 would be approximately \$1,659,248.

### **Cumulative Impacts**

Visitors to the region would have another unit of the national park system competing for their limited visitation time and dollars in a region that has many noteworthy attractions and is already a focus of the tourism industry in South Dakota. Some vacationers would be unable to make reservations and/or stay the extra time in the area to visit the national historic site. There would be a negligible long-term beneficial impact on the regional socioeconomic environment because of the limited ability of the staff to accommodate visitors at Delta One and Delta Nine.

### **Conclusion**

The national historic site would have a negligible long-term impact on the regional socioeconomic environment because relatively few people would spend time and money in the area.

The financial impacts on the three-county regional economy would be beneficial but negligible due to the size of the regional economy, the low magnitude of expenditures, and few new job opportunities resulting from stabilizing and protecting the national historic site.

The total costs of implementing alternative 1 would be about \$1,659,248. A few individuals and companies would benefit from visitation to the national historic site and their associated spending in the area. Funds spent by staff at the national historic site (although a long-term benefit) would have only a negligible impact on the local economy.

The cumulative impacts on the regional economy would be long term, negligible, and beneficial because it is a small site competing with numerous other regional attractions.

## IMPACTS ON NPS OPERATIONS

### Overview

There would be no new facilities in this alternative. Staff would continue to maintain the project office at exit 131. Future visitation to the national historic site is projected at roughly 450,000 per year considering that exit 131 is the major entrance into Badlands National Park (which has 1.2 million visitors annually).

### Coordination and Staffing

Staff would remain in one area — the project office at exit 131. Interpretive staff conducting personal car tours would travel 4 miles to Delta One and 11 miles to Delta Nine.

Having staff in one location and on four 2-hour tours of the Delta facilities would have a minor long-term beneficial impact on staff operations and coordination because interpretive rangers would return to the headquarters facility between tours and would be available for other duties.

Because reservations would continue to be required to access the Delta facilities, 100% of visitors would stop at the project office. Staffing would remain at eight employees.

Current staffing would not be adequate to ensure the current 5,000 visitors per year get on-site at the Delta facilities. Visitation increases would continue to result in a major long-term adverse impact because NPS operations would be unable to provide adequate visitor services/amenities and protect resources at either the project office or at the Delta facilities.

### Maintenance

Three facilities would be maintained in this alternative — Deltas One and Nine and the project office. Delta One and Delta Nine

would receive only basic and essential maintenance.

Utilities such as sewer, water, and electric are available at the project office. Operating hours would be five days a week.

The original heating and air-conditioning systems at the Delta facilities would be brought back on-line and would not be upgraded. These systems would continue to require frequent maintenance, including parts that may no longer be available.

Grounds maintenance at the Delta facilities would be on an as-needed basis. No grounds maintenance would be required at the project office.

Security measures at the Delta facilities would remain minimal with minor upgrades to surveillance equipment, staff on-site during the four daily Monday-through-Friday tours, and routine law enforcement patrols.

Alternative 1 would have the lowest maintenance requirements in terms of the Delta facilities because only basic maintenance would be required and utility needs would be minimal — resulting in a major long-term beneficial impact on maintenance. However, as visitation increases — potentially to the projected 450,000 visitors per year, the staff would be unequipped to deal with maintenance needs resulting in a major long-term adverse impact on staff time required for maintenance.

### Cumulative Impacts

The continued population growth of the Rapid City area, the development of the Lakota Heritage and Education Center, and the designation of the Badlands Loop and the Crazy Horse scenic byways are expected to attract visitors to the Black Hills region. A high percentage of these visitors are expected to use exit 131 of Interstate 90 and consequently

stop at the visitor facility of Minuteman Missile National Historic Site even though it would not be their primary destination. This type of unscheduled visitation could cause a moderate to major long-term adverse cumulative impact on NPS operations and budget because staff and facilities would be inadequate to provide visitor amenities and services to these visitors.

### **Conclusion**

The no-action alternative would have a major long-term adverse effect on the overall management of the national historic site because as visitation increases the facilities and staffing levels would be insufficient to provide adequate operation needs and protect the resources. Future visitation could cause moderate to major long-term adverse cumulative impacts on NPS operations and budget because staff and facilities would be inadequate to provide visitor amenities and services to these visitors.

### **EFFECTS ON ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL**

Private vehicles would be the primary means of transportation to and from the Delta facilities and this alternative would be expected to have no effect on conserving gasoline.

Additional energy requirements to manage the sites (gasoline consumption and heat and electricity for Delta One and the project office) would be expected to increase slightly.

Bringing original heating and electric system on-line would have a minor reduction in energy consumption.

No additional facilities would be developed.

### **UNAVOIDABLE ADVERSE IMPACTS**

#### **Natural Resources**

Unavoidable adverse impacts would be associated with vegetation loss caused by social trailing in the grassland surrounding Delta Nine. These impacts would be expected to be negligible because most visitors would be expected to spend their time inside the security fence.

#### **Cultural Resources**

Unavoidable adverse impacts would be directly associated with increased visitation such as wear from touching doors, floors, and walls. These impacts would be more than offset by providing visitor access and interpretation. These impacts would be negligible because visitors would be with NPS staff at all times.

### **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

There would be no irretrievable or irreversible loss of natural resources in this alternative.

The additional energy requirements for visitor and administrative facilities would result in an irreversible commitment of resources. There would be no permanent effects on national historic site resources.

### **THE RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

Under alternative A, most of the national historic site's cultural and natural resources would be protected and would maintain their long-term productivity as a cultural site.

## IMPACTS OF ALTERNATIVE 2: THE STATUS CHANGE

### IMPACTS ON CULTURAL RESOURCES

#### Historic Buildings and Structures Analysis

**Delta One.** Basic utilities such as heating and air-conditioning would remain at current capacities using the original equipment in the launch control facility. These systems would be expected to be sufficient. When these systems fail they would be replaced with similar capacity and system types. Current use would have no adverse effect on the historic building. System replacement would not be expected to have an adverse effect.

Because the original heating system in the garage has failed, it would be replaced with a similar capacity and system type. Replacement would be expected to have no adverse effect on the historic garage.

Belowground structures, including the capsule, coolers, and heating systems, would be retained in their current functioning condition. Occasional inspection would occur to maintain system integrity. Maintenance of this system would have no adverse effect because the original system would be kept in operational condition.

Although staff and visitor use is limited in this alternative, some ongoing level of wear to the facades and surfaces of the historic buildings and structures resulting from mechanical wear and touching/rubbing and deposition of natural oils and dirt by visitors would continue to occur. However, ongoing maintenance would limit the effect of these impacts and so would result in no adverse effect.

Inside the launch support building repairs necessary to return the structure to its active duty (ready-alert) condition (such as replacing the carpet, laying new linoleum on the floor, installing floor tiles, replacing stained ceiling tiles, and repairing the shower floor in the

women's bathroom) would be made. These repairs would help to return the building to a condition more representative of its historic circumstance and would result in no adverse effect.

Evaluation would be necessary to determine if ultraviolet light filtration was needed on exterior windows. If such installation was shown to be necessary to protect museum objects, film or other protective measures might be required. Depending on the methods chosen, such changes could range from no adverse effect to an adverse effect on the integrity of the windows.

Repainting, striping, and maintaining the helicopter pad would have a moderate beneficial impact because it would return that element to its active duty (ready-alert) appearance and would result in no adverse effect.

In this alternative, original or in-kind vehicles would be displayed inside the garage consistent with its historic use. Impacts on the structure resulting from such use as a storage facility would have no adverse effect.

Maintaining the original flag pole and basketball hoop and replacing its pole padding as well as the reinstallation of the original code-burning drum and gasoline pump outside the support building in their original locations would have no adverse effect.

Tour shuttle operations, (e.g., passenger drop-off/pick-up, maintenance, and informal occasional staff/visitor parking on the asphalt entry road would increase wear, degrade the surface, but would be mitigated by routine maintenance and therefore result in no adverse effect on the pavement.

Modifications for visitors with disabilities, such as temporary and removable ramps, would result in no adverse effect on historic



buildings and structures because placement of such constructions would not directly impact the historic buildings.

Security system upgrades would be limited to minor upgrades to existing equipment. This action would have no adverse effect on the historic structures.

**Delta Nine.** Closure of the missile silo and support building to visitors would continue to limit environmental infiltration (e.g., heat, humidity) and would stabilize internal conditions. Operation of dehumidification equipment, environmental monitoring, and occasional maintenance activities designed to maintain the facilities in a stable state would continue. Impacts from these actions would be beneficial and have no adverse effect.

Bringing the systems in the launch facility support building back on-line would inhibit the development of rust and mold. These actions would be beneficial and would result in no adverse effect on these mechanical components.

Although intensive supervision would be provided by ranger guides, increased visitation could result in some increased wear on the exterior of structures from direct visitor contact — although such contact would be discouraged by rangers and mitigated by increased maintenance. No adverse effect on historic structures would result from such visitor contact.

After-hours unregulated access to the azimuth markers and HICS markers outside the chain-link fence could result in damage from vandalism. Depending on the type and level of vandalism, the resulting impacts would be expected to range from adverse to no adverse effect.

**Visitor / Administrative Facility and Parking.** There would be no impacts on historic buildings or structures from constructing a visitor / administrative facility and

parking because no buildings currently exist in the proposed location.

**Cumulative Impacts.** Within the national historic site, changes to historic buildings and structures have been ongoing since the construction of the installations in 1962 (e.g., installation of the ISST antenna system and television satellite dish). Nevertheless, most of the original design elements remain intact. Changes undertaken by the Air Force and National Park Service since deactivation, such as installation of a dry pipe sprinkler system in the support building at Delta One and increased fire protection and security monitors at both installations, are both a visual intrusion into the historic condition as well as altering historic fabric yet constitute no adverse effect because effects would be unobtrusive and there would be minimal effect on the historic fabric.

Outside the national historic site and directly north of Badlands National Park is the Prairie Homestead, a privately owned dugout/sod house near the eastern entrance gate. The structure is listed in the National Register of Historic Places. The current owners are reluctant to continue ownership and its operation as a visitor site. If the structure is closed, the level of protection for the structure would be uncertain and could possibly be allowed to deteriorate. If this were to occur there would be an adverse effect on this historic property.

Construction of the proposed DM&E Railroad line near Delta One and Delta Nine would result in a considerable release of emissions of soot from the diesel locomotives. The number of coal train transits is expected to be high and could result in changes to the appearance and exterior condition of the buildings and structures. These impacts could result in an adverse effect on the historic buildings and structures.

Because the installation of the viewing enclosure over the silo created different environmental conditions (a sort of

greenhouse effect), new equipment had to be installed to stabilize the environmental conditions. This caused an adverse impact on historic fabric; however, this effect cannot be seen by visitors.

As described above, implementation of alternative 2 would result in no adverse effects on historic buildings and structures. Yet, due to the adverse impacts of other past, present, or reasonably foreseeable actions the cumulative impact would be adverse. Alternative 2, however, would not contribute any adverse impacts to the adverse cumulative impact.

**Conclusion.** Alternative 2 visitation levels would be expected to increase over the current management practices. Guided ranger tours would provide a high level of control of visitor movement. Visitation would be expected to increase the impact on floor coverings, walls, and museum objects because of increased dust, opening and closing of doors, and oils from visitors' hands. Such actions would be discouraged by NPS rangers, would be mitigated by greatly increased monitoring and maintenance, and result in no adverse effect.

Some changes and additions could be made to upgrade the heating/air-conditioning system in the garage at Delta One. No adverse effects from these modifications would result because they would not diminish the character-defining features of the buildings.

In alternative 2, a greater number of actions would be undertaken to restore the historic conditions of the buildings and structures than in alternative 1, which would be expected to result in no adverse effect. Actions associated with this alternative would not contribute any adverse effects to the adverse cumulative effects on the historic structures in the area.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation

or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

### Cultural Landscape Analysis

This alternative would use the existing heating/air-conditioning system components and would not expect any exterior additions such as condensers to the cultural landscape. As a result no adverse effects on the cultural landscape would be expected.

When the heating/air-conditioning system eventually fails, it might be necessary to install additional exterior mechanical components (AC condenser) to adequately service the requirements of the alternative. If such exterior improvements are made there would be an adverse impact on the cultural landscape, although this impact would be minimized because the equipment would be painted to blend in with the surrounding environment.

Although there would be short-term impacts on the cultural landscape during installation of the underground water storage tanks, these impacts would result in a no adverse effect on the cultural landscape.

Removing structures added after deactivation, such as the propane tank, through burial or moving to a less noticeable location would be a beneficial impact on the cultural landscape. The result of these actions would be no adverse effect.

Painting, replacing in kind, or disabling objects to protect them from visitor contact would result in no adverse effects.

The helicopter pad stripping would be repainted and maintained in its historic

condition and would have a beneficial impact on the cultural landscape and would result in no adverse effect.

This alternative would allow for the display of original or in-kind vehicles representative of the types historically used by the Minuteman Missile installations inside the garage for interpretive purposes. The cultural landscape would not be altered from its historic condition. These actions would be beneficial and result in no adverse effect.

If installation of ultraviolet screening were determined necessary to protect museum objects and interior furnishings, changes to the windows would result in no adverse effect on the cultural landscape because mitigative techniques (like installing screening on the inside of the building) would minimize any impacts.

Returning the vegetation to its historic condition through elimination of the grass surrounding the asphalt drives and walkways would help return the installation to a greater semblance of its historic appearance. Similarly, removal of grass from the volleyball and horseshoe pits would return these objects to their historic condition. In addition reinstatement of grass mowing inside the chain-link fence and for a 6- to 10-foot area outside the chain link fence would occur under this alternative. Such changes would be beneficial to the cultural landscape and would have no adverse effect on the cultural landscape.

To accommodate visitors with disabilities, access to the facility would be provided using temporary and removable structures such as ramps. Such changes to Delta One would result in no adverse effect on the appearance and integrity of the cultural landscape.

The use of minimal interpretive waysides and directional signs outside the chain-link fence on the asphalt entrance road would reduce the visual integrity of the installation through the addition of nonhistoric features. Such

additions would have an adverse effect on the cultural landscape.

Scheduled shuttle bus drop-offs, turn-arounds, and visitor parking would alter the condition of the cultural landscape from its historic condition of isolation and would be expected to have an adverse effect on the cultural landscape.

Adding up to 420 acres around Delta One into the national historic site boundary to develop easements with landowners to prevent inappropriate development within the viewshed of Delta One would protect the cultural landscape at Delta One and result in no adverse effect.

**Delta Nine.** Minimal interpretive wayside and safety/directional signs outside the chain-link fence on the gravel entrance road at Delta Nine would affect the visual integrity of the installation through the addition of non-historic features and would result in an adverse effect on the cultural landscape.

Modifications of the gravel service area (hardening through soils amendments for paths) inside the chain link fence to provide permanent access for visitors with disabilities during tours would result in no adverse effect on the cultural landscape.

Additional wear on ancillary structures and objects (such as antennas or missile jack pads) from increased visitation or painting, or disabling objects to protect them from visitor contact would result in no adverse effect.

Mowing a 6–10 foot strip outside the chain-link fence would return the vegetation to near-historic conditions. Within the chain-link fence mowing or eliminating the vegetation would be necessary. Overall, these actions would be a beneficial impact on the cultural landscape and result in no adverse effect.

Parking on the gravel entry drive would alter the historic cultural landscape and its viewshed and be an adverse effect.

Although there would be no formal trails to the azimuth markers and HICS markers outside the chain-link fence, social trails could be created as a result of public inspection. Without a ranger presence, wear, damage, or vandalism could occur resulting in no adverse effect on the cultural landscape because they would not be permanent and measures to eliminate such trails would be undertaken.

Although HICS posts and azimuth markers would be vulnerable to unregulated visitation, no adverse impacts would be expected because any damage would be minimal and would be repaired.

**Visitor / Administrative Facility.** There would be no effects on the cultural landscape from the development of a visitor/administrative facility at exit 127 because development (on the southwest side of the interstate) would be only moderately visible from Delta One, would be outside the proposed boundary adjustment (420 acres) that would protect the historic viewshed, and would be designed to be unobtrusive and blend in with the surrounding landscape.

**Cumulative Impacts.** The recent (2000) introduction of a cellular telephone tower north-northeast of Delta One has altered the landscape from its historic condition. Because of its location, the tower forms a backdrop and can be misinterpreted as part of the Delta One facilities. The tower is outside the national historic site boundary and has no association with it. Although the integrity of the remaining surrounding cultural landscape elements remains remarkably intact, this visual intrusion would continue to have an adverse effect.

Within the national historic site, changes to historic buildings and structures have been ongoing since the construction of the installa-

tions in 1962 (e.g., installation of the ISST antenna system and television satellite dish and construction of the garage). Nevertheless, most of the original design elements remain intact. Changes undertaken by the Air Force and National Park Service since deactivation, such as installation of a dry pipe sprinkler system in the support building at Delta One and increased fire protection and security monitors at both installations, intrude into the historic condition as well as alter historic fabric yet constitute no adverse effect on the cultural landscapes of either Delta One or Delta Nine because effects would be unobtrusive and there would be minimal effect on the historic fabric.

Outside the national historic site and directly north of Badlands National Park is the Prairie Homestead, a privately owned dugout/sod house near the eastern entrance gate. The structure is listed in the National Register of Historic Places. The current owners have built a wooden visitor center and store at the base of the slope upon which the dugout sits. Also a paved highway leading from Interstate 90 to Badlands National Park is in front of the visitor center. Trails have also been constructed. Overall, these actions have altered the original setting of the house but are limited and have no adverse effect on the cultural landscape.

Private individuals have purchased land adjacent to Delta Nine. It is unknown if there are plans to construct residences or other structures. If that should occur, the presence of such structures could have an adverse effect on the cultural landscape.

Since its original construction a glass viewing enclosure over the missile silo at Delta Nine has been added due to the implementation of the START Treaty. This change has resulted in an adverse effect on the cultural landscape at Delta Nine.

Construction of the proposed DM&E Railroad line north of the Delta installations could result in an increase of low-frequency noise

resulting from passage of coal trains as well as whistles and track noises, which could impact the quiet of the historic cultural landscape on a regular and frequent basis. This would be expected to result in an adverse impact on the cultural landscape.

As described above, implementation of alternative 2 would primarily result in no adverse effects on cultural landscapes. Yet, due to the overall adverse impacts of other past, present, or reasonably foreseeable actions the cumulative impact would be adverse. Alternative 2, however, would contribute only minimal adverse impacts to the adverse cumulative impact.

**Conclusion.** Returning structures to their historic condition would help restore the landscapes to conditions more consistent with their historic circumstances. Overall the effects to the two Delta facilities from implementing this alternative would not be adverse.

Although the cumulative impacts would be adverse, the implementation of alternative 2 would not contribute to the adverse cumulative impacts.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

### **Ethnographic Resources Analysis**

Based on the development of a Scope of Collections statement, implementation of this alternative would result in accepting and actively collecting ethnographic materials such as oral histories and remembrances of

those missileers and workers directly associated with the activities of maintaining the alert status of Deltas One and Nine. As a result there would be a long-term moderate beneficial impact on ethnographic resources.

**Cumulative Impacts.** Other past, present, and reasonably foreseeable future actions, as described in the methodology section of this chapter, would have no effect on ethnographic resources. Therefore, there would be no cumulative impacts on ethnographic resources under alternative 2.

**Conclusion.** Because oral histories and remembrances of those who worked and served at the Delta facilities would be actively collected, impacts on ethnographic resources resulting from implementation of this alternative would be expected to be long term and moderately beneficial.

There would be no cumulative impacts on ethnographic resources resulting from the implementation of this alternative.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

### **Museum Objects/Collection Analysis**

Based on a Scope of Collections statement, there would be active collection acquisition under this alternative, which would be focused on the ready-alert status of the facilities and items related to Delta One and Delta Nine. This collection approach would have a minor beneficial effect on the museum collection because it would be fairly narrow in scope.

The material culture and archival items returned from Ellsworth Air Force Base are currently stored in an off-site facility (Badlands National Park), which meets NPS museum standards. Continuing storage at this facility would have a long-term moderate beneficial impact on the collections.

Most of the original museum objects would remain in their historic locations at the Delta facilities. In this alternative the historic environmental systems would be used to control temperature, humidity, light, and pests. These actions could result in long-term negligible to minor beneficial impacts on the museum objects.

Remaining objects that have been stored off-site would be returned to the installation and to their historic locations. These artifacts would be preserved and curated in place, which would result in long-term moderate beneficial impacts.

Evaluation of the harmful effects of ultraviolet light, such as fading and degradation of fabric, posed by exposure to both artificial and sunlight would be undertaken. Limiting the impacts of harmful light rays on carpeting wood, and other degradable materials, if needed, would result in a moderate long-term beneficial impact on museum objects.

Environmental controls would remain at a level designed for human occupancy. Opening the structures to ranger-led tours would allow airborne and human-transported dust and dirt to be brought into the structures at a rate greater than historical norms. As a result it is expected that increased cleaning requirements of the structure and furnishings would cause an increased level of wear to the surfaces of the objects. Carrying out this alternative would result in minor long-term adverse impacts on the museum objects.

Under this alternative historic or in-kind vehicles associated with the national historic site could be displayed in the garage. Opening

the garage doors to display the vehicles during tours could expose them to weather-related impacts. These impacts would be expected to range from negligible to minor and would be long term and adverse.

With security for museum objects being provided by close supervision of the ranger guides and by electronic security systems, there would be little, if any theft of these items — resulting in a long-term negligible adverse impact.

**Delta Nine.** Closure of the missile silo to visitation and monitoring would stabilize the humidity and air temperature fluctuations as well as limiting dust infiltration, which would have a moderate long-term beneficial impact on the museum objects.

Under this alternative, environmental systems such as heating, cooling, and dehumidification would be monitored to ensure that environmental conditions would meet museum standards. By meeting those standards, the condition of museum objects with both the missile silo and the launch facility support building would be stabilized, resulting in long-term minor beneficial impact on museum objects.

**Visitor Facility and Administrative Site.** In this alternative the need for museum storage and curation facilities in the visitor/administrative facility would be limited because most museum objects would remain in place at the Delta facilities. Some of the objects might be exhibited in the visitor center or placed in storage at the Badlands curatorial facility. Such conditions would result in long-term minor to moderate beneficial effects.

**Cumulative Impacts.** Many of the museum objects were removed from their original context for safekeeping at Ellsworth Air Force Base. Resulting adverse impacts on museum objects from a lack of adequate curatorial space and appropriate environmental controls

at Ellsworth have ranged from negligible to minor and adverse.

A new collection storage structure, built near the Ben Reifel Visitor Center in Badlands National Park, would house the museum objects would have a beneficial long-term minor to moderate impacts on the museum objects associated with the national historic site and Badlands National Park.

The effects of the past, present, and reasonably foreseeable actions by others would be long term, minor to moderate beneficial. When these actions are combined with the actions of alternative 2, the overall cumulative effects would be minor, beneficial, and long term; however, this alternative's contribution to these cumulative effects would be sizeable.

**Conclusion.** The impacts on museum objects from implementing alternative 2 would be minor and beneficial.

The overall cumulative effects would be minor, beneficial, and long term; however, this alternative's contribution to these cumulative effects would be sizeable.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

## **IMPACTS ON NATURAL RESOURCES**

### **Air Quality**

**Analysis.** Minor changes in the national historic site's air quality would occur both due to increased visitation and construction. Under alternative 2 there would be short-

term, negligible, localized adverse impacts due to the construction of the new visitor/administrative facility. These impacts would be largely due to fumes (hydrocarbons, carbon monoxide, and nitrogen oxides) and particulates emitted from construction machinery, and increased dust due to the excavation of earth and in the immediate project areas. Air quality would be temporarily adversely affected in these areas.

Small increases in traffic would be expected due to the operation of the Delta facilities as NPS sites, which would add negligible additional emissions into the air.

**Cumulative Impacts.** As described for the no-action alternative, there are several actions in and outside the national historic site that would likely affect the national historic site's air quality and visibility. Proposed construction activities in Badlands National Park (e.g., the Lakota Heritage and Education Center) and prescribed burns would result in short-term, localized impacts on air quality; in some cases the impacts could be moderate to major. However, sources outside the national historic site add far more pollutants to the regional airshed. In particular, energy and industrial developments in the Powder River Basin in Wyoming could have a substantial impact on the national historic site's air quality (see the impacts for the no-action alternative). Other actions outside the national historic site that likely would affect the national historic site's air quality include prescribed fires and wild fires, construction and operation of the DM&E rail line, construction of the Mni Wiconi water project, and possibly designation of the Crazy Horse Scenic Byway.

When the impacts of the above actions are added to the impacts of actions in alternative 2, a major, long-term adverse, cumulative impact on the national historic site's air quality would be likely. However, the actions in alternative 2 would add a minimal increment to this cumulative impact because

the air quality impacts due to alternative 2 would be negligible, localized, and short term.

**Conclusion.** Alternative 2 would result in negligible, short-term, adverse impacts on air quality, primarily due to construction activities. A major, long-term, adverse, cumulative impact on regional air quality would be likely due to emissions from sources outside the national historic site, although the incremental contribution of alternative 2 to this impact would be negligible and short term. The level of impact that would result from alternative 2 would not be sufficient to constitute an impairment of the national historic site's resources or values.

### Vegetation

**Analysis.** Vegetation would be lost or altered in a localized area due to the construction of the visitor / administrative facility under alternative 2, which would result in loss of about 5 acres of vegetation within the parcel transferred from the U.S. Forest Service. The remaining lands in the parcel would be managed as grasslands.

The proposed location consists of lands that are currently grazed and managed under a U.S. Forest Service grazing permit. These lands are a mixture of native and nonnative plants. Given the disturbance to vegetation that has already occurred in most of this area, and the application of appropriate mitigative measures to minimize additional impacts (e.g., ensuring equipment stays within the project area boundaries, revegetating disturbed areas, using measures to avoid the spread of exotic species), these actions would have a long-term, minor, adverse impact on vegetation.

**Cumulative Impacts.** When impacts of other actions are added to the impacts of actions under alternative 2, there would be potential for cumulative adverse impacts. Under alternative 2 the construction of the visitor / administrative facility would result in the loss

of vegetation. The construction and operation of the DM&E rail line, designation of the Crazy Horse Scenic Byway, construction of the Heartland Expressway, and construction of primitive campgrounds and trails in the Buffalo Gap National Grassland also would result in the loss or alteration of native vegetation. When these actions are added to the construction of the visitor/ administrative facility under alternative 2, there would be potential for a long-term, minor to moderate, adverse cumulative impact on native vegetation in the region. However, the actions in alternative 2 would add a minimal increment to this cumulative impact because the vegetation impacts would be minor, localized, and short term.

**Conclusion.** This alternative would result in impacts on vegetation through the construction of the visitor / administrative facility, which would have minor, long-term, adverse impacts on vegetation in a localized area. Similarly, there would be adverse, minor to moderate, long-term cumulative impacts due largely to actions occurring outside the national historic site. These levels of impacts would not be sufficient to constitute an impairment of national historic site resources or values.

### Wildlife

**Analysis.** Wildlife populations and their habitats within the area have been altered by past human actions. The construction of the visitor / administrative facility would result in the disturbance of about 5 acres of grazed grassland, which provides habitat for species such as deer and small mammals. The disturbed areas would be very small relative to the suitable habitat found in the region. Thus, the adverse impact on wildlife of building the visitor/ administrative facility would be negligible to minor and long term.

**Cumulative Impacts.** Several actions within the region could impact wildlife. The con-



struction and operation of the DM&E rail line, and possibly increased traffic due to designation of the Crazy Horse Scenic Byway are anticipated to result in minor to moderate, adverse cumulative impacts on wildlife populations.

When these impacts are added to the negligible to minor long-term adverse impacts to wildlife from construction of a new visitor/administrative facility under alternative 2, minor, long-term, adverse cumulative impacts on wildlife are anticipated. However, the actions in alternative 2 would add only a slight increment to this cumulative impact because the impacts of the alternative would be negligible to minor, localized, and short term.

**Conclusion.** The alternative would have negligible to minor, long-term, adverse impacts on wildlife due to the construction of the new visitor / administrative facility. There would be potential for a minor, long-term, adverse cumulative impact on wildlife in the area due to increased habitat fragmentation and wildlife displacement; however, the actions in alternative 2 would add only a slight increment to these cumulative impacts. These impacts would not constitute an impairment of national historic site resources or values.

## **IMPACTS ON VISITOR USE AND EXPERIENCE**

### **General Quality of the Visitor Experience**

In this alternative, visitors would experience the military facilities at the historic site as close to their active duty (ready-alert) condition as possible, with many original objects in situ. This sense of seeing the site “as it really was” would appeal to most visitors and would be a major beneficial effect. While being on a guided tour could feel constraining to some visitors, others would value the presence and attention of an NPS interpreter. On balance, this would be considered a moderate beneficial effect because many visitors would enjoy and benefit from the tours.

Because of the limited size of the tours, and their length, many visitors might not be able to take a tour or might not be willing to make the necessary time commitment. For these visitors, this could be very frustrating. However, because of the quantity and quality of other interpretive opportunities at the visitor facility, such as movies, virtual film tours of the facilities, oral histories, reproductions and original items, small-scale models, and replicas, many visitors will have an excellent opportunity to “tour” the facilities and understand the national historic site. Because these opportunities would impact a large proportion of the national historic site’s visitors, this would constitute a moderate beneficial impact.

With the increase in staffing at the national historic site, the partnership agreement with the South Dakota Air and Space Museum would enhance interpretation of the missile field and the Cold War era as well as increase visitor understanding of missile operations.

### **Overall Range of Visitor Opportunities**

The only direct experience of site resources in this alternative would be taking a guided tour of the facilities. Many visitors would value these tours, but others, who would prefer to move at their own speed and have more individual, contemplative time on the site, would not be served. Many visitors would be unable to visit the facilities at all. Because of the distances between the Delta facilities, the capacity of the facilities, and tour capacity, about half the people on a tour would not be able to see the Delta One facility and go into the launch control center capsule and about half would not be able to see the Delta Nine facility.

During the heaviest visitation months, tours would be fully reserved, and thus many visitors would be unable to take a tour and would spend their time at the visitor facility. During the high visitation season, large tours

such as commercial and school groups might be unable to visit the facilities, although, under certain circumstances (for instance on a weekday when visitation might be lower) arrangements might be made for such tours.

Because this narrow range of opportunities would affect many visitors in some way, this would be a major adverse impact.

### **Comprehensiveness of Interpretive Opportunities**

The availability of an interpreter for a visitor's entire tour of site resources would provide the widest possible range of interpretive thematic opportunities and would allow for tailoring each tour to the interests of individual visitors and groups. This richness of interpretation would be a major beneficial impact for visitors on the tours. For visitors unable to take the tours, interpretation would be more limited, but because of the quantity, quality, and variety of exhibits, films, and "virtual" tours provided at the visitor facility and on the national historic site web site, the interpretive potential would still be high, and this would be a moderate beneficial effect on visitors.

### **Cumulative Impacts**

The South Dakota Air and Space Museum at Ellsworth Air Force Base exhibits and interprets a variety of bombers, fighters, utility aircraft, missiles, plus many indoor exhibits of aviation memorabilia. Among these are a Minuteman Missile II silo and a cutaway of the underground capsule. This is the only Minuteman Missile interpretive action that occurs outside the national historic site. When the impact of this action is added to the wide range and comprehensiveness of interpretive opportunities available at the national historic site under alternative 2, the result would be a long-term major and beneficial cumulative effect for visitors. The impacts of alternative 2

would comprise most of this beneficial cumulative effect.

### **Conclusion**

Restoring the historic Delta facilities to their active duty (ready-alert) condition and providing personal service interpretation for visitors would provide high-quality experiences and much interpretive depth. This would be a moderate to major beneficial effect for visitors. This would be counter-balanced if some visitors were unable or unwilling to participate on the guided tours or only experienced seeing one of the two Delta facilities on the tour. This would constitute a major adverse impact for some visitors, which would be mitigated by the quantity, quality, and variety of exhibits, films, and "virtual" tours provided at the visitor facility and on the national historic site web site.

There would be a long-term major and beneficial cumulative effect for visitors. The impacts of alternative 2 would comprise most of this beneficial cumulative effect.

## **IMPACTS ON THE SOCIOECONOMIC ENVIRONMENT**

### **Analysis**

The implementation of alternative 2 is expected to have a minor beneficial impact on the overall regional tourism and recreational economy. This alternative allows for the construction of a new visitor / administrative facility at exit 127. The new facility would be several miles away from the exit to a major attraction (Badlands National Park), which could result in half of the visitation expected in the other alternatives. Most visitors would be those with a particular interest in the national historic site.

Development expenditures of about \$9,011,372 would be needed to fully restore the Delta facilities and to build a primary

facility south of exit 127 on Interstate 90. These short-term expenditures would mostly be for construction labor and materials. Other costs related to development would occur over the lifetimes of the various development projects — thus moderating their effects on the local economy.

The expenditures of funds (such as maintenance of heating and cooling systems) would not occur all at one time but take place over the lifetimes of the various development projects and over the life of this plan ( 25 years) — thus spreading out their effect on the local economy.

The national historic site would need 19 full-time-equivalent positions to implement this alternative. Some of these positions would be seasonal or part time. A shuttle service would be provided using General Services Administration (GSA) leased vehicles. Some additional employment opportunities for drivers and other workers might occur.

The annual operating budget for the national historic site would be about \$1,118,020. This expenditure would be a long-term continuing commitment of support by the National Park Service. The total costs of alternative 2 would be approximately \$10,129,392.

### **Cumulative Impacts**

Visitors to the region would have another unit (the fifth) of the national park system competing for their limited visitation time in a region that has many noteworthy attractions and is already a focus of the tourism industry in South Dakota. However, this alternative would accommodate more visitors to the national historic site than alternative 1. Some tourists might stay longer in the region to visit all the “national parks” in southwestern South Dakota. Some beneficial, minor long-term cumulative impacts on the tourism industry would result because the resources and

features of Delta One and Delta Nine would be open to the public.

### **Conclusion**

Development of the national historic site would have some minor, long-term, beneficial impact on the touring public and the tourism industry because more people would have the opportunity to visit Delta One and Delta Nine than under the no-action alternative. A few individuals would benefit from the employment opportunities at the national historic site. The funds spent for construction of the visitor/ administrative facility and to develop, staff, operate, and maintain the national historic site would be \$10,129,392. Funds spent on development would be short-term expenditures; and money spent on labor and benefits would be long-term fiscal commitments by the National Park Service.

The financial impacts on the three-county regional economy would be beneficial but minor due to the size of the regional economy and the relatively low magnitude of expenditures and the small number of job opportunities resulting from developing the national historic site (\$2.4 billion in earnings and nearly 68,700 jobs in 2004). The national historic site would be expected to have only a minor beneficial impact (during both the short and long term) on the local economy and socioeconomic factors such as population, income, employment, and earnings.

Some beneficial, minor long-term cumulative impacts on the tourism industry would result because the resources and features of Delta One and Delta Nine would be open to the public.

### **IMPACTS ON NPS OPERATIONS**

#### **Overview**

There would be one new facility in this alternative — an 8,000-square-foot visitor /

administrative facility at exit 127. Visitation to the national historic site is projected at roughly 221,000 per year considering that exit 127 is not a major entrance to any other attraction.

### **Coordination and Staffing**

Staff would be located at the new visitor/administrative facility at exit 127. Shuttle bus tours would travel 1 mile to Delta One and 11 miles to Delta Nine.

Having staff in one location and on shuttle tours of the Delta facilities would have a moderate long-term beneficial impact on staff coordination and operations because adequate staff would be available.

Because shuttle tour reservations would continue to be required to access both Delta facilities, all visitors would stop at the visitor/administrative facility. There would be 19 employees.

Most staff and operational/maintenance requirements would be at the visitor facility because most visitors could not get on a tour. During the highest visitation season, the concentration of visitors at the visitor facility would result in a moderate long-term beneficial impact on providing adequate visitor services/amenities because sufficient staff and an adequate primary facility would be available to meet visitation demands.

### **Maintenance**

Three facilities would be maintained in this alternative — the visitor / administrative facility and Delta One and Delta Nine. Restoration treatment of the Delta facilities would require the highest level of maintenance to retain and preserve original features, including finishes, distinctive materials, and construction techniques; to repair original items; to replace features in kind using the gentlest means

possible; and to make the limited and sensitive upgrades to mechanical and electrical systems.

Providing sewer, water, and electricity to a primary facility at exit 127 would require extending a water line 4 miles from exit 131, extending electric lines 1 mile under Interstate 90, and providing a sewage lagoon. Underground water storage tanks would be used for domestic and fire suppression needs.

The original heating and air-conditioning systems at the Delta facilities would be brought back on-line and minimally upgraded. Because original museum objects would be in place, environmental needs to protect the resources would be closely monitored and original systems would be upgraded as needed.

Maintaining the grounds at the Delta facilities to military standards would include painting, replacing in kind, and restoring grounds elements. In addition, grounds maintenance would be to NPS standards at the primary visitor / administrative facility.

Security measures at the Delta facilities would include minimal upgrades to surveillance equipment, interpretive rangers on-site all day for shuttle tours, and being able to see Delta One facilities from the primary visitor facility at exit 127. In addition, the Delta facilities and primary visitor facility would be routinely patrolled by law enforcement staff.

Overall, alternative 2 would have the highest maintenance requirements in terms of the Delta facilities because of the specialized needs of maintaining a restored site, keeping outdated utility systems working, and maintaining the grounds to a military standard. Maintenance activities would also increase due to the size of the primary visitor/administrative facility and its accompanying infrastructure as well as the distance from electric and water sources. However, an adequate facility would be available, which would reduce maintenance compared to

alternative 1. Overall, implementing this alternative would result in a minor to moderate long-term adverse impact on maintenance.

### **Cumulative Impacts**

The continued population growth of the Rapid City area, the development of the Lakota Heritage and Education Center, and the designation of the Badlands Loop and the Crazy Horse scenic byways would be expected to attract visitors to the Black Hills region. A high percentage of these visitors are expected to use exit 131 of Interstate 90. Because the visitor facility would be 4 miles away, it is expected that only a small percentage of these visitors would stop at exit 127 and the national historic site visitor / administrative facility. Although this type of unscheduled visitation could cause a moderate long-term adverse cumulative impact on NPS operations and budget, the impact would be minor because staff and facilities would provide adequate visitor amenities and services to these visitors.

### **Conclusion**

The impacts of implementing this alternative on NPS operations would be moderate, long term and beneficial. The impact would only be moderate because it would require a high level of staff effort to maintain Delta One and Nine as restored sites, maintenance requirements for outdated utility systems, and high costs for obtaining electricity and water.

There would be a minor long-term adverse cumulative impact on NPS operations and budget.

### **EFFECTS ON ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL**

A shuttle system would be used to transport visitors (~35 miles round trip) from the visitor

center to both Delta facilities. Shuttle buses would be energy efficient, possibly hybrid, and/or use diesel fuel, and would be expected to slightly reduce the consumption of gasoline.

Additional energy requirements to manage the sites (gasoline consumption, and heat and electricity for the Delta facilities and the visitor / administrative facility) would be expected to slightly increase energy requirements.

Bringing the original Delta facilities' heating and electric system on-line would have a minor reduction in energy consumption.

The visitor /administrative facility would be constructed using energy-efficient technology, therefore reducing the energy requirements for heating and cooling.

Limited amounts of nonrenewable resources would be used for construction projects and restoration of the Delta facilities and landscape. This expenditure of energy would be short term and negligible and include fuel for construction vehicles and materials.

### **UNAVOIDABLE ADVERSE IMPACTS**

#### **Natural Resources**

As in alternative 1, unavoidable adverse impacts would be associated with vegetation loss caused by social trailing in the grassland surrounding Delta Nine. These impacts would be expected to be negligible because most visitors would be expected to spend their time inside the security fence.

#### **Cultural Resources**

As in alternative 1, unavoidable adverse impacts would be directly associated with increased visitation, such as wear from touching doors, floors, and walls. These impacts would be more than offset by

providing visitor access to the facilities. These impacts would be negligible because visitors would be with NPS staff at all times.

### **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

#### **Natural Resources**

Vegetation loss from developing facilities on the land transfers of up to 28.65 acres from the U.S. Forest Service would be irreversible and irretrievable as long as the buildings remain. However, the impacts would be negligible because the National Grassland contains 600,000 acres.

The additional energy requirements for visitor and administrative facilities would result in an irreversible commitment of resources. There would be no permanent effects on national historic site resources.

#### **Cultural Resources**

Irreversible and irretrievable losses of resources would result from unauthorized collection and vandalism of cultural resources. The possibility of this type of damage would be slight because visitors would be with NPS staff at all times.

The materials and energy used for restoration of the Delta facilities and visitor/administrative facility development and maintenance would be irreversibly and irretrievably committed. This commitment would be slight in this alternative.

#### **NPS Operations**

The additional energy requirements needed for the visitor/administrative facility would result in an irreversible commitment of resources. In addition there would be a commitment of materials for construction of the facility and parking areas.

### **THE RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

Developing and constructing facilities, improving roads, and restoring cultural resources would result in short-term socioeconomic benefits. After construction work was finished, long-term benefits would result from the improved facilities, access, and visitor programs.

## IMPACTS OF ALTERNATIVE 3: A STRATEGIC COMMITMENT

### IMPACTS ON CULTURAL RESOURCES

#### Historic Buildings and Structures Analysis

**Delta One.** Replacement of the heating and air-conditioning components would be necessary to handle increased visitation. Replacement could necessitate alteration of the historic configuration and appearance (e.g. duct work, electrical wiring, and alteration of original space configuration). Such changes would result in an adverse effect.

Because the original heating system in the garage has failed, it would be replaced with a similar capacity and system type. Replacement would be expected to have no adverse effect on the historic garage.

Belowground structures, including the capsule, coolers, and heating systems, would be retained in their current functioning condition. Occasional inspection would occur to maintain system integrity. Maintenance of this system would have no adverse effect because the original system would be kept in operational condition.

Increased visitation to the entire launch control facility support building, including hallways and day room, could result in substantial wear on the equipment and furnishings inside. However, ongoing maintenance would limit the effect of these impacts and so would result in no adverse effect.

Physical contact from visitors touching equipment, wall surfaces, doors, or other structural components would result in accelerated deterioration of surfaces. Protective techniques (such as signs, barriers, use of reproductions, microcrystalline coatings, isolation of museum objects, and maintenance activities) would be used to limit such impacts. Installing these protective devices would likely result in an adverse effect

on the buildings and structures and historic fabric; however, this effect would be minimized as much as possible by sensitive and careful installation.

Inside the launch support building repairs necessary to return the structure to its stand-down condition (such as replacing the carpet, laying new linoleum on the floor, installing floor tiles, replacing stained ceiling tiles, and repairing the shower floor in the women's bathroom) would be made. These repairs would help return the building to a condition more representative of its historic circumstance and would result in no adverse effect.

Evaluation would be necessary to determine if ultraviolet light filtration was needed on exterior windows. If such installation was shown to be necessary to protect museum objects, film or other protective measures might be required. Depending on the methods chosen, such changes could range from no adverse effect to an adverse effect on the integrity of the windows.

Repainting, striping, and maintaining the helicopter pad would have a beneficial impact because it would return that element to its stand-down appearance and would result in no adverse effect.

Vehicles would be displayed in the garage behind weatherproof barriers. Barriers sufficient to weatherproof the garage with the overhead doors remaining open would be expected to be substantial, and impact the structure in a significant fashion. As a result, impacts on the structure resulting from such use as a storage facility would have an adverse effect.

Increased visitation of the launch control facility support building interior would result in greater opportunities for vandalism and removal of items than in alternatives 1 or 2.

Protective techniques, such as barriers, isolation of museum objects, or transparent barrier materials such as Plexiglas, would be used. These barriers would be intrusive to the visual and physical integrity of the installation and/or would compromise historic fabric by necessitating modifications to the doors, doorjambes, or entryways as well as to carpets, walls, and other structural components. The result would be an adverse effect.

Easily damaged original structures such as the code burner, gas pump, and flagpole would be moved to the visitor facility and replaced with replicas or in-kind replacements. This action would maintain the historic character of the installation and result in a beneficial impact on the original structures resulting in no adverse effect.

Installing permanent ramps to improve access to the buildings for visitors with disabilities, would change the historic condition of the buildings by adding nonhistoric elements and would result in an adverse effect the buildings.

Changes to the security system would be limited electronic video surveillance. The need for the use of cameras in locations not historically present would impact the building fabric. However such impacts would be minor and would be expected to have no adverse effect on the historic structures.

**Delta-Nine.** Closure of the missile silo and support building to visitors would continue to limit environmental infiltration (e.g., heat, humidity) and would stabilize internal conditions. Operation of dehumidification equipment, environmental monitoring, and occasional maintenance activities designed to maintain the facilities in a stable state would continue. Impacts from these actions would be beneficial and have no adverse effect.

After-hours unregulated access to the azimuth markers and HICS markers outside the chain-link fence could result in damage from vandalism. However, depending on the type

and level of vandalism, the resulting impacts would be expected to range from adverse to no adverse effect.

Replacing the steel cover on top of the launch facility support building with a transparent viewing enclosure to allow visitors to see the machinery would alter the structure substantially and have an adverse effect on the structure.

Such a change would likely create different atmospheric conditions inside the building. Additional environmental control equipment would be installed to stabilize the environment and protect the machinery inside the building. These changes would likely have no adverse effect because they would be minimally intrusive.

Changes to the security system would be limited electronic video surveillance. The need for the use of cameras in locations not historically present would impact the building fabric. However such impacts would be minor and would be expected to have no adverse effect on the historic structures.

**Visitor / Administrative Facility, Contact Stations, and Parking Areas.** There would be no impacts on historic buildings or structures from constructing the visitor/administrative facility and parking area or contact stations and parking areas because none currently exist at the locations proposed for these facilities.

**Cumulative Impacts.** Within the national historic site, changes to historic buildings and structures have been ongoing since the construction of the installations in 1962 (e.g., installation of the ISST antenna system and television satellite dish). Nevertheless, most of the original design elements remain intact. Changes undertaken by the Air Force and National Park Service since deactivation, such as installation of a dry pipe sprinkler system in the support building at Delta One and increased fire protection and security



monitors at both installations, are both a visual intrusion into the historic condition as well as altering historic fabric yet constitute no adverse effect because effects would be unobtrusive and there would be minimal effect on the historic fabric.

Outside the national historic site and directly north of Badlands National Park is the Prairie Homestead, a privately owned dugout/sod house near the eastern entrance gate. The structure is listed in the National Register of Historic Places. The current owners are reluctant to continue ownership and its operation as a visitor site. If the structure is closed, the level of protection for the structure would be uncertain and could possibly be allowed to deteriorate. If this were to occur there would be an adverse effect on this historic property.

Construction of the proposed DM&E Railroad line near Delta One and Delta Nine would result in a considerable release of emissions of soot from the diesel locomotives. The number of coal train transits is expected to be high and could result in changes to the appearance and exterior condition of the buildings and structures. These impacts could result in an adverse effect on the historic buildings and structures.

Because the installation of the viewing enclosure over the silo created different environmental conditions (a sort of greenhouse effect), new equipment had to be installed to stabilize the environmental conditions. This caused an adverse impact on historic fabric; however this effect cannot be seen by visitors.

As described above, actions associated with implementing alternative 3 would contribute generally adverse effects to overall adverse cumulative effects on historic structures in the area, primarily from natural wear and environmental degradation. Implementation of the alternative would contribute a substantial portion of the overall adverse cumulative effects on the historic structures in the area.

**Conclusion.** Adverse effects on buildings and structures would be expected to result if installation of significant protective barriers at Delta One were to occur. The continued potential for a greater level of impacts on structures through touching, playing on structures, and other visitor contact would be expected compared to alternative 1. Impacts would be expected to result in adverse effects from the installation of ramps or other special alterations for access by visitors with disabilities.

Installing a viewing enclosure on the launch support building at Delta Nine would directly impact the historic conditions of the structure and result in adverse effects.

The impacts resulting from implementing this alternative would contribute a substantial portion of the overall adverse cumulative effects on the historic structures in the area.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

### **Cultural Landscape Analysis**

**Delta One.** Upgrading and replacing the heating/air-conditioning system would likely result in the addition of new exterior machinery necessary to cool the historic building. If such additions were required, it would be expected that they would result in an adverse effect to the cultural landscape; however, such effects would be minimized by painting the objects to blend in with the surrounding environment.

Although there would be short-term impacts on the cultural landscape during installation of the underground water storage tanks, these impacts would result in no adverse effect on the cultural landscape.

Removing structures added after deactivation, such as the propane tank, through burial or moving to a less noticeable location would be a beneficial impact on the cultural landscape. The result of these actions would be no adverse effect.

Painting, replacing in kind, or disabling objects to protect them from visitor contact would result in no adverse effects.

The helicopter pad stripping would be repainted and maintained in its historic condition and would have a beneficial impact on the cultural landscape and would result in no adverse effect.

This alternative would allow for the display of vehicles representative of the types historically used by the Minuteman Missile installations inside the garage for interpretive purposes. Protective barriers would be installed to allow visitors to see but not touch the vehicles. The cultural landscape would be altered from its historic condition. These actions would be beneficial and result in no adverse effect.

If installation of ultraviolet screening were determined necessary to protect museum objects and interior furnishings, changes to the windows would result in no adverse effect on the cultural landscape because mitigative techniques (like installing screening on the inside of the building) would minimize any impacts.

With the restoration of near-historic vegetation conditions, the grass within the chain-link fence would need mowing. In some areas it would be necessary to eliminate the overgrown vegetation. Overall, these actions

would be a beneficial impact on the cultural landscape and result in no adverse effect.

Accommodations for visitors with disabilities, such as permanent ramps to provide access for wheelchairs and amenities such as visitor benches would result in an adverse effect on the historic landscape.

Developing a pedestrian walkway across the county road and “hardening” it to accommodate wheelchairs and installing traffic safety signs could change the character of the road and the cultural landscape, resulting in adverse effects on the cultural landscape.

Use of interpretive wayside and directional/safety signs would compromise the integrity of the cultural landscape through the addition of nonhistoric features and would result in an adverse effect.

Constructing a visually compatible visitor contact station, a paved parking area, and picnic area (across the county road) would dramatically alter the historic condition of the cultural landscape from its historic condition of isolation. The resulting impacts on the cultural landscape would be adverse.

Adding 420 acres around Delta One into the national historic site boundary to develop easements with landowners to prevent inappropriate development within the viewshed of Delta One would protect the cultural landscape at Delta One and result in no adverse effect.

**Delta Nine.** Use of interpretive wayside and safety/directional signs inside and outside the chain-link fence would compromise the integrity of the installation through the addition of nonhistoric features and would result in adverse effects on the cultural landscape.

Replacing the steel roof on top of the launch facility support building with a transparent viewing cover, thus changing the original configuration and allowing visitors to see the

machinery inside, would be inconsistent with the historic condition of the launch facility support building. Impacts on the cultural landscape from this replacement would be adverse.

Modifications of the gravel service area (hardening through soils amendments or formal paved paths) to provide permanent access for visitors with disabilities inside the chain-link fence would result in no adverse effect on the cultural landscape because they would be minimal, unobtrusive, and blend with the surrounding environment.

Additional wear on ancillary structures and objects (such as antennas or missile jack pads) from increased visitation or painting, or disabling objects to protect them from visitor contact, would result in no adverse effect because effects would be minimal and would protect the objects and because objects proposed for painting would be returned to how they looked during the period of significance.

Eliminating the vegetation from the gravel service area and mowing the grass between the gravel service area and the fence would result in a beneficial impact on the cultural landscape by returning the landscape to a greater semblance of its historic condition and would result in no adverse effect.

Mowing the grass around the chain-link fence would return the site to a greater semblance of its historic conditions, would be beneficial, and would result in no adverse impact.

Developing a visitor contact station (requiring electricity and vault toilets) and parking area (accommodating buses, vans, and private vehicles) would dramatically alter the cultural landscape, which is predominately flat and open prairie. These actions would have an adverse effect on the cultural landscape of Delta Nine.

Social trails created by visitors wanting to examine the azimuth or HICS markers could

be seen from the road but would have no adverse effects on the cultural landscape because they would not be permanent and measures to eliminate such trails would be undertaken.

Although HICS posts and azimuth markers would be vulnerable to unregulated visitation, no adverse impacts would be expected because any damage would be minimal and would be repaired.

This alternative would allow for the display of vehicles historically used at Delta Nine but were not stored at the site. The impact of this action would result in no adverse effect on the cultural landscape because such vehicles were occasionally present at the site.

Implementing a boundary adjustment to transfer up to 5 acres at Delta Nine from the U.S. Forest Service to the National Park Service would result in a negligible beneficial impact because the cultural landscape is already protected from development by being in federal ownership.

**Visitor / Administrative Facility.** There would be no effects on the cultural landscape from the development of a visitor/ administrative facility at exit 131 because this exit is several miles from the Delta facilities.

**Cumulative Impacts.** The recent (2000) introduction of a cellular telephone tower north-northeast of Delta One has altered the landscape from its historic condition. Because of its location, the tower forms a backdrop and can be misinterpreted as part of Delta One facilities. The tower is outside the national historic site boundary and has no association with it. Although the integrity of the remaining surrounding cultural landscape elements remains remarkably intact, this visual intrusion would continue to have an adverse effect.

Within the national historic site, changes to historic buildings and structures have been

ongoing since the construction of the installations in 1962 (e.g., installation of the ISST antenna system and television satellite dish and construction of the garage). Nevertheless, most of the original design elements remain intact. Changes undertaken by the Air Force and National Park Service since deactivation, such as installation of a dry pipe sprinkler system in the support building at Delta One and increased fire protection and security monitors at both installations, intrude into the historic condition as well as alter historic fabric yet constitute no adverse effect on the cultural landscapes of Delta One and Delta Nine because effects would be unobtrusive and there would be minimal effect on the historic fabric.

Outside the national historic site and directly north of Badlands National Park is the Prairie Homestead, a privately owned dugout/sod house near the eastern entrance gate. The structure is listed in the National Register of Historic Places. The current owners have built a wooden visitor center and store at the base of the slope upon which the dugout sits. Also a paved highway leading from Interstate 90 to Badlands National Park is in front of the visitor center. Trails have also been constructed. Overall, these actions have altered the original setting of the house but are limited and have no adverse effect on the cultural landscape.

Private individuals have purchased land adjacent to Delta Nine. It is unknown if there are plans to construct residences or other structures. If that should occur, the presence of such structures could have an adverse effect on the cultural landscape.

Since its original construction, a glass viewing enclosure over the missile silo at Delta Nine has been added due to the implementation of the START Treaty. This change has resulted in an adverse effect on the cultural landscape at Delta Nine.

Construction of the proposed DM&E Railroad line north of the Delta installations

could result in an increase of low-frequency noise resulting from the passage of coal trains as well as whistles and track noises, which could impact the quiet of the historic cultural landscape on a regular and frequent basis. This would be expected to result in an adverse impact on the cultural landscape.

The county could alter the road at Delta One for a pedestrian crossing from the parking area to the facility. The addition of a pedestrian crossing/hardened path would result in an adverse effect on the cultural landscape because this road would be paved, stripped, signed, and highly visible, thus changing the historic character of the road.

The county could alter the road at Delta-nine to provide access to the parking area. This would require improving the 300–400 feet of the gravel county road from Interstate 90 (south of the site entrance road). This improvement on that part of the road would change the road's historic character and would have an adverse effect on the cultural landscape.

As described above, implementation of alternative 3 would primarily result in adverse effects on cultural landscapes. The adverse effects of alternative 3 in conjunction with the adverse impacts of other past, present, or reasonably foreseeable actions would result in an adverse cumulative impact. The adverse impacts of alternative 3 would contribute substantially to the adverse cumulative impact.

**Conclusion.** Altering the cultural landscape from its historic condition, for example by adding parking areas, visitor contact stations, interpretive signs, and permanent ramps for visitors with disabilities, would adversely affect the integrity of the cultural landscapes. Overall the impacts to the two Delta facilities from implementing this alternative would be adverse.

Overall the cumulative adverse impacts would be expected to be slightly greater than the no

adverse effects; alternative 3 would contribute substantially to these adverse cumulative effects.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

### **Ethnographic Resources Analysis**

Based on the development of a Scope of Collections statement, implementation of this alternative would result in accepting and actively collecting ethnographic materials such as oral histories and remembrances of those missileers and workers directly associated with maintaining the alert status of the Minuteman Missile system throughout the United States. As a result there would be a long-term moderate beneficial impact on ethnographic resources.

**Cumulative Impacts.** Other past, present, and reasonably foreseeable future actions, as described in the methodology section of this chapter, would have no effect on ethnographic resources. Therefore, there would be no cumulative impacts on ethnographic resources under alternative 3.

**Conclusion.** Because oral histories and remembrances of those who worked and served at the Delta facilities would be actively collected, impacts on ethnographic resources resulting from implementation of this alternative would be expected to be long term and moderately beneficial.

There would be no cumulative impacts resulting from the implementation of this alternative.

Because there would be no major, adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

### **Museum Objects/Collection Analysis**

Based on a Scope of Collections statement, there would be active collection acquisition under this alternative, which would be focused on the American Minuteman Missile system and related items. This collection approach would have a minor to moderate beneficial effect on the museum collection because it would be fairly broad in scope.

The material culture and archival items returned from Ellsworth Air Force Base are currently stored in an off-site facility (Badlands National Park) that meets NPS museum standards. Continuing storage at this facility would have a long-term moderate beneficial impact on the collections.

Use of replicas in the day room and its use as a staging area for tours to the launch control center (capsule) would permit increased potential for removal and physical contact by visitors. Some of the original museum objects would remain in their historic locations at the Delta facilities, and would be protected by various techniques. Replacement of environmental control systems (heating and air-conditioning) would control temperature, humidity, light, and pests. These actions could result in long-term minor to moderate beneficial impacts on the museum objects.

Evaluation of the harmful effects of ultraviolet light, such as fading and degradation of fabric, posed by exposure to both artificial and sunlight would be undertaken. Limiting the impacts of harmful light rays on carpeting wood, and other degradable materials, if needed, would result in a moderate long-term beneficial impact on museum objects.

Changes to the environmental conditions resulting from replacing the heating/air-conditioning system and installation of barriers on the interior and exterior doors would reduce and stabilize fluctuations in humidity, dust infiltration, and air temperature. This would optimize atmospheric conditions for preservation of museum objects and the structure. Instituting a museum level environmental control system, in a substantial portion of the building would be a moderate long-term beneficial impact on the museum objects.

Visitors could see historic or in-kind vehicles parked in the garage from outside the building through a protective barrier. Minor vehicles or tools such as a lawn mower or snow blower would also be displayed. Displaying these vehicles and machinery in the garage would have negligible long-term beneficial impact because they would be displayed in a climate-controlled condition.

With security for museum objects being provided by close supervision of the ranger guides and by electronic security systems, there would be little, if any theft of these items — resulting in a long-term negligible adverse impact.

**Delta Nine.** Closure of the missile silo to visitation and monitoring would stabilize the humidity and air temperature fluctuations as well as limiting dust infiltration, which would have a moderate long-term beneficial impact on the museum objects.

Placing a viewing enclosure over the launch facility support building would likely alter the

environment in the building. Use of ultraviolet protection would be incorporated into the glass which would reduce radiant heat. Monitoring would be undertaken and necessary action would be undertaken to stabilize the humidity and air temperature fluctuations as well as limiting dust infiltration, and would result in a moderate long-term beneficial impact on the mechanical components.

**Visitor / Administrative Facility and Badlands Facility.** Implementation of this alternative would result in most museum objects being curated or exhibited in the visitor facility. Any remaining objects would be stored at the Badlands curatorial facility. As a result, there would be long-term major beneficial impacts on museum objects because they would be secured and curated in facilities that meet NPS curatorial standards.

**Cumulative Impacts.** Many of the museum objects were removed from their original context for safekeeping at Ellsworth Air Force Base. Resulting adverse impacts on museum objects from a lack of adequate curatorial space and appropriate environmental controls at Ellsworth have ranged from negligible to minor and adverse.

A new collection storage structure, built near the Ben Reifel Visitor Center in Badlands National Park, would house the museum objects would have a beneficial long-term minor to moderate impacts on the museum objects associated with the national historic site and Badlands National Park.

The effects of the past, present, and reasonably foreseeable actions by others would be long term, minor to moderate and beneficial. Implementation of alternative 3 would have substantial long-term minor to moderate beneficial effects on museum objects primarily due to secured storage and curation. This alternative's contribution to these cumulative effects would be substantial.

**Conclusion.** Implementation of alternative 3 would have substantial long-term minor to moderate beneficial effects on museum objects primarily due to secured storage and curation.

The cumulative effects would be long term, minor to moderate, and beneficial. This alternative's contribution to these cumulative effects would be substantial.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

## IMPACTS ON NATURAL RESOURCES

### Air Quality

**Analysis.** Minor changes in the national historic site's air quality would occur both due to increased visitation and the construction of facilities. Under alternative 3 there would be short-term, negligible, localized adverse impacts due to the construction of the new visitor / administrative facility and two visitor contact stations. These impacts would be largely due to fumes (hydrocarbons, carbon monoxide, and nitrogen oxides) and particulates emitted from construction machinery, and increased dust due to the excavation of earth in the immediate project areas. Air quality would be temporarily affected in these areas.

Small increases in traffic would be expected due to the operation of the national historic site, which would add negligible additional emissions into the air.

**Cumulative Impacts.** As described for the no-action alternative, there are several actions in and outside the national historic site that would likely affect the national historic site's air quality and visibility. Proposed construction activities in Badlands National Park (e.g., the Lakota Heritage and Education Center) and prescribed burns would result in short-term, localized impacts on air quality; in some cases the impacts could be moderate to major. However, sources outside the national historic site add far more pollutants to the regional airshed. In particular, energy and industrial developments in the Powder River Basin in Wyoming could have a substantial impact on the national historic site's air quality (see the impacts of the no-action alternative). Other actions outside the national historic site that likely would affect the national historic site's air quality include prescribed fires and wild fires, construction and operation of the DM&E rail line, construction of the Mni Wiconi rural water project in Kadoka, and possibly designation of the Crazy Horse Scenic Byway.

When the impacts of the above actions are added to the actions in alternative 3, a major, long-term adverse, cumulative impact on the national historic site's air quality would be likely. However, the actions in alternative 3 would add a minimal increment to this cumulative impact because the air quality impacts due to alternative 3 would be negligible, localized, and short term.

**Conclusion.** Alternative 3 would result in negligible, short-term, adverse impacts on air quality, primarily due to construction activities. A major, long-term, adverse, cumulative impact on regional air quality would be likely due to emissions from sources outside the national historic site, although the incremental contribution of alternative 3 to this impact would be negligible and short term. The level of impact that would result from alternative 3 would not be sufficient to constitute an impairment of the national historic site's resources or values.

## Vegetation

**Analysis.** Under this alternative, vegetation would be lost or altered in a localized area due to the construction of the visitor/administrative facility and parking at exit 131 and small visitor contact stations and parking areas at Delta One and Delta Nine. The construction of these facilities would result in the loss of about 7 acres of vegetation. As in alternative 2, the visitor / administrative facility would impact about 5 acres in the total parcel. The remaining lands in this parcel would be managed as grasslands. The parking area and visitor contact station at Delta One would impact about 1 acre of the total parcel across the county road. The construction of the visitor contact station and parking area at Delta Nine would result in the disturbance of about 1 acre of the total parcel.

The proposed location of the visitor/administrative facility consists of lands that are currently grazed and managed under a U.S. Forest Service grazing permit. These lands are a mixture of native and nonnative plants. Given the disturbance to vegetation that has already occurred in most of this area, and the application of appropriate mitigative measures to minimize additional impacts (e.g., ensuring equipment stays within the project area boundaries, revegetating disturbed areas, using measures to avoid the spread of exotic species), these actions would have a long-term, minor, adverse impact on vegetation.

**Cumulative Impacts.** When impacts of other actions are added to the impacts of actions under alternative 3, there would be the potential for cumulative adverse impacts. Under alternative 3, the construction of the visitor / administrative facility, visitor contact stations, and parking would result in the loss of vegetation. The construction and operation of the DM&E rail line, designation of the Crazy Horse Scenic Byway, construction of the Heartland Expressway, and the construction of primitive campgrounds and trails in the Buffalo Gap National Grassland

also would result in the loss or alteration of native vegetation. When these actions are added to the development of the visitor facilities and parking areas under alternative 3, there could be long-term, minor to moderate, adverse cumulative impact on native vegetation in the region. However, the actions in alternative 3 would add a minimal increment to this cumulative impact because the vegetation impacts would be minor, localized, and short term.

**Conclusion.** This alternative would result in impacts on vegetation through the construction of the visitor / administrative facility and parking area and two visitor contact stations and parking areas, which would have minor, long-term, adverse impacts on vegetation in a localized area. Similarly, there would be adverse minor to moderate, long-term cumulative impacts due largely to actions occurring outside the national historic site. These levels of impacts would not be sufficient to constitute an impairment of national historic site resources or values.

## Wildlife

**Analysis.** Wildlife populations and their habitats in the area have been altered by past human actions. The construction of the visitor facilities and parking areas would result in the loss of about 7 acres of grazed grassland, which provides habitat for species such as deer and small mammals. The disturbed areas are very small relative to the suitable habitat found in the region. Thus, the adverse impact on wildlife due to building the visitor facilities and parking areas would be minor and long term.

**Cumulative Impacts.** Several actions in the region could impact wildlife. The construction and operation of the DM&E rail line, and possibly increased traffic due to designation of the Crazy Horse Scenic Byway, are anticipated to result in minor to moderate,



adverse cumulative impacts on wildlife populations.

When these impacts are added to the minor long-term adverse impacts on wildlife from construction of new visitor facilities and parking areas under alternative 3, minor, long-term, adverse cumulative impacts on wildlife would be anticipated. However, the actions in alternative 3 would add only a slight increment to this cumulative impact because the impacts of the alternative 3 would be negligible to minor, localized, and short term.

**Conclusion.** The alternative would have minor, long-term, adverse impacts on wildlife due to the construction of new visitor facilities and parking areas. The alternative would have the potential for a minor, long-term, adverse cumulative impact on wildlife in the area due to increased habitat fragmentation and wildlife displacement. These impacts would not constitute an impairment of national historic site resources or values.

#### **IMPACTS ON VISITOR USE AND EXPERIENCE**

At Delta One, rehabilitating facilities to maintain its historic character, including repairing damage that occurred during deactivation and mothballing (such as replacing the carpet, laying new linoleum on the floor, installing floor tiles, replacing stained ceiling tiles, and repairing the shower floor in the women's bathroom) would bring the building to its stand-down appearance.

Protective barriers to the interior and exterior rooms in the launch control facility support building and garage (Delta One) would allow visitors to see into but not enter these rooms and would provide visitors with a view of the internal machinery and museum objects present historically in the rooms. These actions would result in a moderate beneficial long-term impact on the visitor experience at Delta One.

At Delta Nine, visitors would see original structures with few protective techniques. A second viewing dome would be added to allow visitors to see the inner workings of the underground support building. These actions would result in a long-term moderate effect on the visitor experience at Delta Nine.

With the increase in staffing at the national historic site, the partnership agreement with the South Dakota Air and Space Museum would enhance interpretation of the missile field and the Cold War era as well as increase visitor understanding of missile operations.

#### **General Quality of the Visitor Experience**

In this alternative, visitors would experience national historic site resources close to their stand-down condition, but without many of the original objects in place, and with limited opportunities to enter rooms and other interior spaces. Although most visitors would likely not know what they were missing, the compromised authenticity in this alternative would be a minor adverse impact on visitor experience.

Visitors would be able to tour the sites at their own pace and within their own time constraints, which would be a moderate beneficial effect for most visitors. However, tour reservations would be required for the launch control capsule at Delta One. Because only six visitors can go on these tours to the underground capsule, many visitors would not have this opportunity, which would be a long-term moderate adverse impact. Self-directed tours would be available at both Delta facilities and would be a major beneficial long-term impact.

Because there would be parking available at both Delta One and Delta Nine, most visitors could get onto these sites. However, some type of controls could be implemented when carrying capacity was exceeded, which would most likely be during the highest visitation season.

### **Overall Range of Visitor Opportunities**

A relatively wide range of opportunities would be available to visitors in this alternative. Most of the national historic site would be available to visitors by car and self-guided tour. Some visitors would also have the opportunity of a guided tour into the Delta One control center capsule. There would be a wide range of interpretive programs/visitor opportunities at the visitor facility. Likely, one or more of these opportunities would appeal to most visitors and would be a major beneficial effect.

### **Comprehensiveness of Interpretive Opportunities**

A variety of interpretive media and programs would be provided in this alternative, including static on-site media such as brochures and wayside exhibits, rangers at the visitor contact stations, and a range of opportunities and options at the visitor facility. The possible range and depth of interpretation would be fairly rich, making this an overall moderate beneficial impact for visitors.

### **Cumulative Impacts**

The South Dakota Air and Space Museum at Ellsworth Air Force Base exhibits and interprets a variety of bombers, fighters, utility aircraft, missiles, plus many indoor exhibits of aviation memorabilia. Among these are a Minuteman Missile II silo and a cutaway of the underground capsule. This is the only Minuteman Missile interpretive action that occurs outside the national historic site. When the impact of this action is added to the moderate range and comprehensiveness of interpretive opportunities available at the national historic site under alternative 3, the result would be a long-term, moderate and beneficial cumulative effect for visitors. The impacts of alternative 2 would comprise most of this beneficial cumulative effect.

### **Conclusion**

The compromised authenticity of the historic facilities in this alternative would be a minor adverse impact on visitor experience. Otherwise, major beneficial effects would result because visitors would be able to tour both facilities at their own pace and within their own time constraints, or with reservations go on a guided tour of the control center capsule at Delta One, or see the displays and information at the visitor facility. There would be a wide range of interpretive and experience opportunities that would appeal to most visitors and would be a moderate to major beneficial effect.

There would be a long-term, moderate and beneficial cumulative effect for visitors. The impacts of alternative 2 would comprise most of this beneficial cumulative effect.

## **IMPACTS ON THE SOCIOECONOMIC ENVIRONMENT**

### **Analysis**

The implementation of alternative 3 would be expected to have a minor beneficial impact on the overall regional tourism and recreational economy. This alternative allows for the highest number of newly constructed facilities including a visitor / administrative facility at exit 131. As in alternative 1, it is expected that a primary facility at this location (along the major access route to Badlands National Park) would attract a high level of unscheduled visitation plus those with a particular interest in the national historic site.

Development expenditures of about \$10,754,054 would be needed to rehabilitate the Delta facilities and add parking areas and visitor contact stations, as well as build a primary visitor facility north of exit 131 on Interstate 90. These expenditures would mainly be for construction labor and materials. Other costs related to development would occur over the lifetimes of the various

development projects — thus moderating their effects on the local economy.

The expenditures of funds (such as maintenance of heating and cooling systems) would not occur all at one time but take place over the lifetimes of the various development projects and over the life of this plan ( 25 years) — thus spreading out their effect on the local economy.

The national historic site would need 20 full-time-equivalent positions to implement this alternative. Some of these positions would be seasonal or part time.

The annual operating budget for the national historic site would be about \$1,134,782. These expenditures would be a long-term continuing commitment of support by the National Park Service. The total costs of alternative 3 would be approximately \$11,888,836.

### **Cumulative Effects**

Visitors to the region would have another unit (the fifth) of the national park system competing for their limited visitation time in a region that has many noteworthy attractions and is already a focus of the tourism industry in South Dakota. However, this alternative would accommodate many more visitors than alternative 1. Some tourists might stay longer in the region to visit all the “national parks” in southwestern South Dakota. Some minor long-term beneficial impacts on the tourism industry would result because the national historic site would be open to the public.

### **Conclusion**

Development of the national historic site would have some minor long-term beneficial impacts on the touring public and the tourism industry because more people than under the no-action alternative would have the

opportunity to visit Delta One and Delta Nine. The funds spent for construction of facilities and to develop, staff, operate, and maintain the national historic site would be about \$11,888,836.

The financial impacts on the three-county regional economy would be beneficial but minor due to the size of the regional economy (\$2.4 billion in earnings and nearly 68,700 jobs in 2004) and the relatively low magnitude of expenditures and few job opportunities resulting from developing the national historic site. This minor long-term beneficial impact on the local economy would contribute relatively little to improve the regional socioeconomic factors such as population, income, employment, and earnings.

Some minor long-term beneficial impacts on the tourism industry would result because the national historic site would be open to the public.

### **IMPACTS ON NPS OPERATIONS**

#### **Overview**

There would be three new facilities in this alternative — a 10,000 square-foot visitor/administrative facility at exit 131 and two visitor contact stations with vault toilets and parking areas at the Delta facilities. Visitation to the national historic site is projected at about 450,000 per year considering that exit 131 is the major entrance into Badlands National Park (which has 1.2 million visitors annually).

#### **Coordination and Staffing**

Staff would be located in three areas — the new visitor / administrative facility at exit 131, and the new visitor contact stations at Delta One and Delta Nine.

Having staff located in three locations would have a minor to moderate long-term adverse

impact on staff coordination and operations because staff at Deltas One and Nine would function as two additional satellite offices.

Because reservations would not be required to access the Delta facilities (except for the underground capsule), and parking and staff would be on-site at both Delta facilities, many visitors might not stop at the visitor/administrative facility. There would be 20 employees.

Many visitors could have their primary experience at the Delta facilities. During the highest visitation season, the concentration of visitors at the Delta facilities would result in a minor to moderate long-term adverse impact on providing adequate visitor services/amenities and protecting resources because on-site staff and satellite visitor contact stations would be insufficient to provide adequate visitor services.

### **Maintenance**

Five facilities would be maintained in this alternative — Deltas One and Nine, the visitor/administrative facility, and two visitor contact stations with parking lots. Rehabilitation treatment of the Delta facilities to accommodate the highest number of visitors on-site for a self-guided experience while protecting resources would require extensive maintenance. The facilities would contain newly introduced elements such as walkways, protective barriers, permanent accessibility ramps, traffic controls, and interpretive and safety signs.

Providing sewer, water, and electricity to a primary facility at exit 131 would require hooking up to existing water and electric lines and providing a sewage lagoon. Underground water storage tanks would be used for domestic and fire suppression needs.

Electricity is available at both Delta facilities. Underground water storage tanks would be

used for domestic and fire suppression at Delta One and Delta Nine.

The original heating and air-conditioning systems at the Delta facilities would be brought back on-line and extensively upgraded. A new heating/air-conditioning system would be placed in the garage. System upgrades would be essential because many doors at the Delta One launch control facility and garage would remain open and visitation would be unrestricted —therefore original systems would be upgraded as necessary to respond to these types of environmental needs. Placing a viewing enclosure over the Delta Nine underground launch support building would require the installation of environmental controls.

Grounds maintenance for five facilities would be on a cyclic, scheduled basis to NPS standards.

Security measures at the Delta facilities would include interpretive rangers and major upgrades and additions to surveillance equipment because of the number of unescorted visitors. In addition, the Delta facilities and their parking areas/contact stations and the primary visitor facility would be routinely patrolled by law enforcement staff.

Overall, alternative 3 would have a high maintenance requirement in terms of the Delta facilities because many new visitor safety and resource protection elements would be introduced. In addition, this alternative would have the highest number of new facilities with accompanying infrastructure and utility needs. However, introducing modern utility systems, and maintaining grounds to NPS standards would reduce these needs compared to alternative 1 but not to a noticeable level. These actions would result in a moderate to major long-term adverse impact on maintenance.

## **Cumulative Impacts**

The continued population growth of the Rapid City area, the development of the Lakota Heritage and Education Center, and the designation of the Badlands Loop and the Crazy Horse scenic byways would be expected to attract visitors to the Black Hills region. A high percentage of these visitors would be expected to use exit 131 of Interstate 90 and consequently stop at the visitor facility of Minuteman Missile National Historic Site even though it would not be their primary destination. Although this type of unscheduled visitation could cause a moderate long-term adverse cumulative impact on NPS operations and budget, the impact would be minor because staff and facilities would provide adequate visitor amenities and services to these visitors.

## **Conclusion**

The impacts of implementing this alternative on NPS operations would be minor to moderate, long term, and adverse. The impact would be minor to moderate because this alternative would require maintaining the highest number of dispersed facilities, which would incur more communication and logistic problems; increases in maintenance at the Delta facilities because of the number of new elements introduced for visitor and resource protection; and it would require support of the most unescorted visitors at the Delta facilities.

There would be a minor long-term adverse cumulative impact on NPS operations and budget.

## **EFFECTS ON ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL**

As in alternative 1, private vehicles would be the primary means of transportation to and from the Delta facilities and would be expected to have no effect on conserving gasoline.

Additional energy requirements to manage the sites (gasoline consumption and heat and electricity for the Delta facilities, the visitor/administration building, and two visitor contact stations) would be expected to moderately increase energy requirements.

As in alternative 2, bringing the original Delta facilities' heating and electric system on-line would have a minor reduction in energy consumption.

As in alternative 2, the visitor / administrative facility and two visitor contact stations would be constructed using energy-efficient technology, thus reducing the energy requirements for heating and cooling.

As in alternative 2, limited amounts of nonrenewable resources would be used for construction projects and restoration of the Delta facilities and landscape. This expenditure of energy would be short term and negligible and include fuel for construction vehicles and materials.

## **UNAVOIDABLE ADVERSE IMPACTS**

### **Natural Resources**

As in alternative 1, unavoidable adverse impacts would be associated with vegetation loss caused by social trailing in the grassland surrounding Delta Nine. These impacts would be expected to be negligible because most visitors would be expected to spend their time inside the security fence.

### **Cultural Resources**

Unavoidable adverse impacts would be associated with providing protective barriers on doorways, walls, and floors, and installing permanent features (ramps and hardened surfaces) for handicap accessibility. These impacts would be more than offset because their installation would ensure protection of cultural resources.

Unavoidable adverse impacts would be associated with installing a viewing enclosure over the launch support building. Mitigative actions would ensure that this installation was reversible with negligible loss of historic fabric.

## **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

### **Natural Resources**

As in alternative 2, vegetation loss from developing facilities and parking on the land transfers of up to 33.65 acres from the U.S. Forest Service would be irreversible and irretrievable as long as the buildings remained. However, the impacts would be negligible because the National Grassland contains 600,000 acres.

### **Cultural Resources**

Irreversible and irretrievable losses of resources would result from unauthorized collection and vandalism of cultural resources. The possibility of this type of damage would be slight because most original resources would have been removed and placed in appropriate locations and the on-site resources would have extensive protection techniques applied.

The materials and energy used for rehabilitation of the Delta facilities and visitor/

administrative facility developments and maintenance would be irreversibly and irretrievably committed. This commitment would be moderate in this alternative.

### **NPS Operations**

The additional energy requirements needed for the visitor / administrative facility would result in an irreversible commitment of resources. In addition there would be a commitment of materials for construction of the facility, and two visitor contact stations and parking areas.

## **THE RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

As in alternative 2, developing and constructing facilities, improving roads, and restoring cultural resources would result in short-term socioeconomic benefits. After construction work was finished, long-term benefits would result from the improved facilities, access, and visitor programs.

Locating the visitor and administrative facility at exit 131 would eventually have some effect on the growth of private development from commercial facilities, thus resulting in long-term benefits to the surrounding area.

## IMPACTS OF ALTERNATIVE 4: COLD WAR SYMBOLS, PREFERRED ALTERNATIVE

### IMPACTS ON CULTURAL RESOURCES

#### Historic Buildings and Structures Analysis

**Delta One.** Basic utilities such as heating and air-conditioning would remain at current capacities using the original equipment in the launch control facility. These systems would be expected to be sufficient. When these systems fail they would be replaced with similar capacity and system types. Current use would have no adverse effects on the historic building. System replacement would not be expected to have an adverse effect

Because the original heating system in the garage has failed, it would be replaced with a similar capacity and system type. Replacement would be expected to have no adverse effect on the historic garage.

Belowground structures, including the capsule, coolers, and heating systems, would be retained in their current functioning condition. Occasional inspection would occur to maintain system integrity. Maintenance of this system would have no adverse effect because the original system would be kept in operational condition.

Although staff and visitor use is limited in this alternative, some ongoing level of wear to the facades and surfaces of the historic buildings and structures resulting from mechanical wear and touching/rubbing and deposition of natural oils and dirt by visitors would continue to occur. However, ongoing maintenance would limit the effect of these impacts and so would result in no adverse effect.

Inside the launch support building repairs necessary to return the structure to its active duty (ready-alert) condition (such as replacing the carpet, laying new linoleum on the floor, installing floor tiles, replacing stained ceiling

tiles, and repairing the shower floor in the women's bathroom) would be made. These repairs would help to return the building to a condition more representative of its historic circumstance and would result in no adverse effect.

Evaluation would be necessary to determine if ultraviolet light filtration was needed on exterior windows. If such installation was shown to be necessary to protect museum objects, film or other protective measures might be required. Depending on the methods chosen, such changes could range from no adverse effect to an adverse effect on the integrity of the windows.

Repainting, striping, and maintaining the helicopter pad would have a beneficial impact because it would return that element to its active duty (ready-alert) condition and would result in no adverse effect.

Under this alternative historic or in-kind vehicles associated with the national historic site could be displayed inside the garage. Impacts on the structure resulting from such use would have no adverse effect.

Maintaining the original flag pole and basketball hoop and replacing its pole padding as well as the reinstallation of the original code-burning drum and gasoline pump outside the support building in their original locations would have no adverse effect.

Tour operations, (e.g., passenger drop-off/pick-up, maintenance, and informal occasional staff/visitor parking on the asphalt entry road) would increase wear, degrade the surface, but would be mitigated by routine maintenance and therefore result in no adverse effect on the pavement.

Modifications for visitors with disabilities, such as temporary and removable ramps, would result in no adverse effect on historic buildings and structures because placement of such constructions would not directly impact the historic buildings.

Security system upgrades would be limited to minor upgrades to existing equipment. This action would have no adverse effect on the historic structures.

**Delta-Nine.** Closure (to the public) of the missile silo and launch facility support building and continued environmental stabilization and monitoring and maintenance activities would limit degradation due to changes in heat, humidity, and infiltration of dust. These procedures would be beneficial and result in no adverse effect on the structures.

After-hours unregulated access to the azimuth markers and HICS markers outside the chain-link fence could result in damage from vandalism. However, depending on the type and level of vandalism, the resulting impacts would be expected to range from adverse to no adverse effect.

If undertaken, replacing the steel cover on top of the launch facility support building with a transparent viewing enclosure to allow visitors to see the machinery would alter the structure substantially and have an adverse effect on the structure.

Such a change would likely create different atmospheric conditions inside the building. Additional environmental control equipment would be installed to stabilize the environment and protect the machinery inside the building. These changes would likely have no adverse effect because they would be minimally intrusive.

**Visitor / Administrative Facility, Kiosk, and Parking Areas.** There would be no impacts on historic buildings or structures from constructing the visitor / administrative

facility or the parking areas at Delta One and Delta Nine, or the kiosk at Delta Nine. No historic structures exist at the locations for these developments, and there would be no effect from their construction.

**Cumulative Impacts.** Within the national historic site, changes to historic buildings and structures have been ongoing since the construction of the installations in 1962 (e.g., installation of the ISST antenna system and television satellite dish). Nevertheless, most of the original design elements remain intact. Changes undertaken by the Air Force and National Park Service since deactivation, such as installation of a dry pipe sprinkler system in the support building at Delta One and increased fire protection and security monitors at both installations, are both a visual intrusion into the historic condition as well as altering historic fabric yet constitute no adverse effect because effects would be unobtrusive and there would be minimal effect on the historic fabric.

Outside the national historic site and directly north of Badlands National Park is the Prairie Homestead, a privately owned dugout/sod house near the eastern entrance gate. The structure is listed in the National Register of Historic Places. The current owners are reluctant to continue ownership and its operation as a visitor site. If the structure is closed, the level of protection for the structure would be uncertain and could possibly be allowed to deteriorate. If this were to occur there would be an adverse effect on this historic property.

Construction of the proposed DM&E Railroad line near Delta One and Delta Nine would result in a considerable release of emissions of soot from the diesel locomotives. The number of coal train transits is expected to be high and could result in changes to the appearance and exterior condition of the buildings and structures. These impacts could result in an adverse effect on the historic buildings and structures.



Because the installation of the viewing enclosure over the silo created different environmental conditions (a sort of greenhouse effect), new equipment had to be installed to stabilize the environmental conditions. This caused an adverse impact on historic fabric; however this effect cannot be seen by visitors.

As described above, implementation of alternative 4 would result primarily in no adverse effects on historic buildings and structures. Yet, due to the adverse impacts of other past, present, or reasonably foreseeable actions the cumulative impact would be adverse. Alternative 4, however, would contribute minimally to the adverse cumulative impacts.

**Conclusion.** Alternative 4 visitation levels would be expected to substantially increase over current levels. In addition, construction alterations resulting from changes to environmental control systems at Delta One to accommodate the increased visitor level associated with this alternative would result in no adverse impacts.

Guided tours at Delta One would provide a high level of control of visitor movement. However, continuing visitation would be expected to increase the impacts on floor coverings and walls. These impacts would be mitigated by ranger supervision, information at the visitor facility, and maintenance activities, and would thus have no adverse effect.

Although the cumulative impacts would be adverse, alternative 4's contribution to these impacts would be minimal.

There would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents.

Therefore, there would be no impairment of national historic site resources or values.

### **Cultural Landscape Analysis**

**Delta One.** This alternative would use the existing heating and air-conditioning components and would not expect any exterior additions such as condensers to the cultural landscape. As a result no adverse effects on the cultural landscape would be expected.

When the heating and air-conditioning system eventually fails, it may be necessary to install additional exterior mechanical components (AC condenser) to adequately service the requirements of the alternative. If such exterior improvements are made there would be an adverse impact on the cultural landscape; however, such effects would be minimized by painting the objects to blend in with the surrounding environment.

Although there would be short-term impacts on the cultural landscape during installation of the underground water storage tanks, these impacts would result in no adverse effect on the cultural landscape.

Removing structures added after deactivation, such as the propane tank, through burial or moving to a less noticeable location would be a beneficial impact on the cultural landscape. The result of these actions would be no adverse effect.

Painting, replacing in kind, or disabling objects to protect them from visitor contact would result in no adverse effects.

The helicopter pad stripping would be repainted and maintained in its historic condition and would have a beneficial impact on the cultural landscape and would result in no adverse effect.

This alternative would allow for the display of original or in-kind vehicles inside the garage.

Although some of the displayed vehicles were not often stored at Delta One, their interpretive value would be high. The resulting impacts of their display would be beneficial and would have no adverse effect on the cultural landscape.

If installation of ultraviolet screening were determined necessary to protect museum objects and interior furnishings, changes to the windows would result in no adverse effect on the cultural landscape because mitigative techniques (like installing screening on the inside of the building) would minimize any impacts.

Returning the vegetation to its historic condition through elimination of the grass surrounding the asphalt drives and walkways would help return the installation to a greater semblance of its historic appearance. Similarly, removal of grass from the volleyball and horseshoe pits would return these objects to their historic condition. In addition reinstatement of grass mowing in the chain-link fence and for a 6- to 10-foot area outside the chain-link fence would occur under this alternative. Such changes would be beneficial to the cultural landscape and would be no adverse effect on the cultural landscape.

To accommodate visitors with disabilities, access to the facility would be provided using temporary and removable structures such as ramps. Such changes to Delta One would result in no adverse effect on the appearance and integrity of the cultural landscape.

Developing a pedestrian walkway across the county road and “hardening” it to accommodate wheelchairs and installing traffic safety signs could change the character of the road and the cultural landscape, resulting in adverse effects on the cultural landscape.

The use of minimal interpretive waysides and safety/directional signs outside the chain-link fence on the asphalt entrance road would reduce the visual integrity of the installation

through the addition of nonhistoric features. Addition of such signs would be an adverse effect.

Construction of a gravel parking area across the county road from Delta One would impose a new structure into a landscape in which it did not previously exist and which would be seen from the facility. The result would be an adverse effect on the historic view from the Delta One control room as well as on the overall cultural landscape.

Scheduled shuttle bus drop-offs, turn-arounds, and visitor parking would alter the cultural landscape from its historic condition of isolation and would be expected to have an adverse effect on the cultural landscape.

Adding 420 acres around Delta One into the national historic site boundary to develop easements with landowners to prevent inappropriate development within the viewshed of Delta One would protect the cultural landscape at Delta One and result in no adverse effect.

**Delta Nine.** If undertaken, replacing the steel roof on top of the launch facility support building with a glass viewing enclosure, thus changing the original configuration and allowing visitors to see the machinery inside, would be inconsistent with the historic condition of the launch facility support building. If replacement occurred, impacts on the cultural landscape would be an adverse effect.

Modifications of the gravel service area (hardening through soils amendments or formal paved paths) to provide permanent access for visitors with disabilities inside the chain-link fence would result in no adverse effect on the cultural landscape.

Additional wear on ancillary structures and objects (such as antennas or missile jack pads) from increased visitation or painting, or disabling objects to protect them from visitor contact would result in no adverse effect.

Eliminating the vegetation from the gravel service area and mowing the grass between the gravel service area and the fence would result in a beneficial impact on the cultural landscape by returning the landscape to a greater semblance of its historic condition. There would be no adverse effect as a result.

Mowing the grass around the chain-link fence would return the site to a greater semblance of its historic conditions, would be beneficial, and would result in no adverse impact.

Construction of an interpretive kiosk and gravel parking area would create new structures that did not previously exist in the landscape and would be an adverse effect on the cultural landscape.

Use of extensive interpretive wayside and safety/directional signs outside the chain-link fence on the gravel entrance road would compromise the integrity of the installation through the addition of nonhistoric features and would result in adverse effects on the cultural landscape.

Although there would be no formal trails to the azimuth markers and HICS markers outside the chain-link fence, social trails could be created as a result of public inspection. Without a ranger presence, wear, damage, or vandalism could occur resulting in no adverse effect on the cultural landscape because they would not be permanent and measures to eliminate such trails would be undertaken.

Although HICS posts and azimuth markers would be vulnerable to unregulated visitation, no adverse impacts would be expected because any damage would be minimal and would be repaired.

This alternative would allow for the display of vehicles historically used at Delta Nine but were not stored at the site. The impact of this action would result in no adverse effect on the cultural landscape because such vehicles were occasionally present at the site.

**Visitor / Administrative Facility.** There would be no effects on the cultural landscape from the development of a visitor / administrative facility at exit 131 because this exit is several miles from the Delta facilities.

**Cumulative Impacts.** The recent (2000) introduction of a cellular telephone tower north-northeast of Delta One has altered the landscape from its historic condition. However, because of its location, the tower forms a backdrop and can be misinterpreted as part of Delta One facilities. The tower is outside the national historic site boundary and has no association with it. Although the integrity of the remaining surrounding cultural landscape elements remains remarkably intact, this visual intrusion would continue to have an adverse effect.

Within the national historic site, changes to historic buildings and structures have been ongoing since the construction of the installations in 1962 (e.g., installation of the ISST antenna system and television satellite dish and construction of the garage). Nevertheless, most of the original design elements remain intact. Changes undertaken by the Air Force and National Park Service since deactivation, such as installation of a dry pipe sprinkler system in the support building at Delta One and increased fire protection and security monitors at both installations, intrude into the historic condition as well as altering historic fabric yet constitute no adverse effect on the cultural landscapes of both Delta One and Delta Nine because effects would be unobtrusive and there would be minimal effect on the historic fabric.

Outside the national historic site and directly north of Badlands National Park is the Prairie Homestead, a privately owned dugout/sod house near the eastern entrance gate that is listed in the National Register of Historic Places. The current owners have built a wooden visitor center and store at the base of the slope upon which the dugout sits. Also a paved highway leading from Interstate 90 to

Badlands National Park is in front of the visitor center. Trails have also been constructed. Overall, these actions have altered the original setting of the house but are limited and have no adverse effect on the cultural landscape.

Private individuals have purchased land adjacent to Delta Nine. It is unknown if there are plans to construct residences or other structures. If that should occur, the presence of such structures could have an adverse effect on the cultural landscape.

Since its original construction, a glass viewing enclosure over the missile silo at Delta Nine has been added due to the implementation of the START Treaty. This change has resulted in an adverse effect on the cultural landscape at Delta Nine.

Construction of the proposed DM&E Railroad line north of the Delta installations could result in an increase of low-frequency noise resulting from passage of coal trains as well as whistles and track noises which could impact the quiet of the historic cultural landscape on a regular and frequent basis. This would be expected to result in an adverse impact on the cultural landscape.

The county could alter the road at Delta One for a pedestrian crossing from the parking area to the facility. The addition of a pedestrian crossing/hardened path would result in no adverse effect on the cultural landscape because this action would be unobtrusive and blend with the historic character.

The county could alter the road at Delta Nine to provide access to the parking area. This would require improving the 300–400 feet of the gravel county road from Interstate 90 (south of the site entrance road). This improvement on that part of the road would change the road's historic character and would have an adverse effect on the cultural landscape.

As described above, implementation of alternative 4 would result primarily in no adverse effects on cultural landscapes. Yet, due to the adverse impacts of other past, present, or reasonably foreseeable actions the cumulative impact would be adverse. Alternative 4, however, would contribute minimally to the adverse cumulative impact.

**Conclusion.** Changes occurring to the cultural landscapes in the region would have some adverse effects, while the changes resulting from NPS actions would also have a generally adverse effect on the cultural landscape. Cumulatively these sets of impacts would have an adverse effect.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic site resources or values.

### **Ethnographic Resources Analysis**

Based on the development of a Scope of Collections statement, implementation of this alternative would result in accepting and actively collecting ethnographic materials such as oral histories and remembrances of those missileers and workers directly associated with the activities historically related to the Cold War as it affected the United States, the Soviet Union, and the rest of the world. As a result there would be a long-term moderate beneficial impact on ethnographic resources.

**Cumulative Impacts.** Other past, present, and reasonably foreseeable future actions, as described in the methodology section of this chapter, would have no effect on ethnographic resources. Therefore, there would be

no cumulative impacts on ethnographic resources under alternative 4.

**Conclusion.** Because oral histories and remembrances of those who worked and served at the Delta facilities would be actively collected, impacts on ethnographic resources resulting from implementation of this alternative would be expected to be long term and moderately beneficial.

There would be no cumulative impacts resulting from the implementation of this alternative.

Because there would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of national historic sites resources or values.

### **Museum Objects/Collection Analysis**

Based on a Scope of Collections statement, there would be active collection acquisition under this alternative, which would focus on the ready-alert status of the facilities and items related to Delta One and Delta Nine, the American Minuteman Missile system, and the Soviet Union's involvement in the Cold War. This collection approach would have a moderate beneficial effect on the museum collection because it would be the broadest of any of the alternatives in scope.

The material culture and archival items returned from Ellsworth Air Force Base are currently stored in an off-site facility (Badlands National Park), which meets NPS museum standards. Continuing storage at this facility would have a long-term moderate beneficial impact on the collections.

Many of the original museum objects would remain in their historic locations at the Delta facilities. In this alternative the historic environmental systems would be used to control temperature, humidity, light, and pests. These actions could result in long-term negligible to minor beneficial impacts on the museum objects.

Remaining objects that have been stored off-site would be returned to the installation and to their historic locations. These artifacts would be preserved and curated in place, which would result in long-term moderate beneficial impacts.

Evaluation of the harmful effects of ultraviolet light, such as fading and degradation of fabric, posed by exposure to both artificial and sunlight, would be undertaken. Limiting the impacts of harmful light rays on carpeting wood, and other degradable materials, if needed, would result in a moderate long-term beneficial impact on museum objects.

Environmental controls would remain at a level designed for human occupancy. Opening the structures to ranger-led tours would allow airborne and human-transported dust and dirt to be brought into the structures at a rate greater than historical norms. As a result it is expected that increased cleaning requirements of the structure and furnishings would cause an increased level of wear to the surfaces of the objects. Carrying out this alternative would result in minor long-term adverse impacts on the museum objects.

Under this alternative historic or in-kind vehicles associated with the national historic site could be displayed inside the garage. Opening the garage doors during tours to display the vehicles could expose the vehicles to weather-related impacts. These impacts would be expected to range from negligible to minor and would be long term and adverse.

With security for museum objects being provided by close supervision of the ranger

guides and by electronic security systems, there would be little, if any theft of these items — resulting in a long-term negligible adverse impact.

**Delta Nine.** Closure of the missile silo to visitation and monitoring would stabilize the humidity and air temperature fluctuations as well as limit dust infiltration would have a moderate long-term beneficial impact on the museum objects.

If a viewing enclosure is placed over the launch facility support building, it would likely alter the environment in the building. Use of ultraviolet protection would be incorporated into the glass which would reduce radiant heat. Monitoring and necessary actions would be undertaken to stabilize the humidity and air temperature fluctuations as well as limit dust infiltration, and would result in a moderate long-term beneficial impact on the mechanical components.

**Visitor / Administrative Facility.** Implementation of this alternative would result in many of the museum objects requiring storage at the Badlands facility or exhibition in the visitor / administrative facility because of security and preservation concerns. As a result long-term moderate beneficial impacts on museum objects stored in the visitor / administrative or Badlands facilities would be expected.

**Cumulative Impacts.** Many of the museum objects were removed from their original context for safekeeping at Ellsworth Air Force Base. Resulting adverse impacts on museum objects from a lack of adequate curatorial space and appropriate environmental controls at Ellsworth have ranged from negligible to minor and adverse.

A new collection storage structure, built near the Ben Reifel Visitor Center in Badlands National Park, used to house the museum objects would have a beneficial long-term minor to moderate impacts on the museum

objects associated with the national historic site and Badlands National Park.

The effects of the past, present, and reasonably foreseeable actions by others would be long term, minor to moderate, and beneficial. Implementation of alternative 3 would have substantial long-term minor to moderate beneficial effects on museum objects, primarily due to secured storage and curation. This alternative's contribution to these cumulative effects would be substantial.

**Conclusion.** Implementation of alternative 4 would have substantial long-term minor to moderate beneficial effects on museum objects, primarily due to secured storage and curation.

The effects of the past, present, and reasonably foreseeable actions by others would be long term, minor to moderate, and beneficial. This alternative's contribution to these cumulative effects would be substantial.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of Minuteman Missile National Historic Site; (2) key to the natural or cultural integrity of the national historic site; or (3) identified as a goal in relevant NPS planning documents, there would be no impairment of the national historic site's museum objects.

## IMPACTS ON NATURAL RESOURCES

### Air Quality

**Analysis.** Minor changes in the national historic site's air quality would occur both due to increased visitation and the construction of facilities. Under alternative 4 there would be short-term, negligible, localized adverse impacts due to the construction of the new visitor / administrative facility and parking area and the small visitor kiosk at Delta One and parking areas at both Delta facilities.

These impacts would be largely due to fumes (hydrocarbons, carbon monoxide, and nitrogen oxides) and particulates emitted from construction machinery, and increased dust due to the excavation of earth and in the immediate project areas. Air quality would be temporarily affected in these areas.

Small increases in traffic would be expected due to the operation of the sites as national historic site, which would add negligible additional emissions into the air.

**Cumulative Impacts.** As described for the no-action alternative, there are several actions in and outside the national historic site that would likely affect the national historic site's air quality and visibility. Proposed construction activities in Badlands National Park (e.g., the Lakota Heritage and Education Center) and prescribed burns would result in short-term, localized impacts on air quality; in some cases the impacts could be moderate to major. However, sources outside the national historic site add far more pollutants to the regional airshed. In particular, energy and industrial developments in the Powder River Basin in Wyoming could have a substantial impact on the national historic site's air quality (see the impacts of the no-action alternative). Other actions outside the national historic site that likely would affect the national historic site's air quality include prescribed fires and wild fires, construction and operation of the DM&E rail line, construction of the Mni Wiconi water project, and possibly designation of the Crazy Horse Scenic Byway.

When the impacts of the above actions are added to the impacts of actions in alternative 4, a major, long-term adverse, cumulative impact on the national historic site's air quality would be likely. However, the actions in alternative 4 would add a minimal increment to this cumulative impact because the air quality impacts due to alternative 4 would be negligible, localized, and short term.

**Conclusion.** Alternative 4 would result in negligible, short-term, adverse impacts on air quality, primarily due to construction activities. A major, long-term, adverse, cumulative impact on regional air quality would be likely due to emissions from sources outside the national historic site, although the incremental contribution of alternative 4 to this impact would be negligible and short term. The level of impact that would result from alternative 4 would not be sufficient to constitute an impairment of the national historic site's resources or values.

### **Vegetation**

**Analysis.** Under this alternative, vegetation would be lost or altered in a localized area due to the construction of the visitor / administrative facility at exit 131 and parking, the small visitor kiosk at Delta Nine, and parking areas at Delta One and Delta Nine. The construction of these facilities would result in the loss of about 7 acres of vegetation. As in alternative 2, the visitor / administrative facility would impact about 5 acres in the total parcel. The remaining lands within this parcel would be managed as grasslands. The parking area at Delta One would impact about 1 acre of the total parcel on the east side of the county road. The construction of the parking area at Delta Nine would result in the disturbance of about 1 acre.

The proposed location for the visitor / administrative facility consists of lands that are grazed and managed under a U.S. Forest Service grazing permit. These lands are a mixture of native and nonnative plants. Given the disturbance to vegetation that has already occurred in most of this area, and the application of appropriate mitigative measures to minimize additional impacts (e.g., ensuring equipment stays within the project area boundaries, revegetating disturbed areas, using measures to avoid the spread of exotic species), these actions would have a long-term, minor, adverse impact on vegetation.

**Cumulative Impacts.** When impacts of other actions are added to the impacts of actions proposed under alternative 4, there could be cumulative adverse impacts. The construction of the visitor facilities and parking areas would result in the loss of vegetation. The construction and operation of the DM&E rail line, designation of the Crazy Horse Scenic Byway, construction of the Heartland Expressway, and the construction of primitive campgrounds and trails in the Buffalo Gap National Grassland also would result in the loss or alteration of native vegetation. When these actions are added to the construction of the visitor facilities and parking areas under alternative 4, there could be a long-term, minor to moderate, adverse cumulative impact on native vegetation in the region. However, the actions in alternative 4 would add a minimal increment to this cumulative impact because the vegetation impacts would be minor, localized, and short term.

**Conclusion.** This alternative would result in impacts on vegetation due to the construction of visitor facilities and parking areas, which would have minor, long-term, adverse impacts on vegetation in a localized area. Similarly, there would be adverse minor to moderate, long-term cumulative impacts due largely to actions occurring outside the national historic site. These levels of impacts would not be sufficient to constitute an impairment of national historic site resources or values.

## Wildlife

**Analysis.** Wildlife populations and their habitats in the area have been altered by past human actions. The construction of the visitor facilities and parking areas would result in the loss of about 7 acres of grazed grassland, which provides habitat for species such as deer and small mammals. The area that would be disturbed would be very small relative to the suitable habitat found in the region. Thus, the adverse impact on wildlife of building the

visitor facilities and parking areas would be minor and long term.

**Cumulative Impacts.** Several actions in the region could impact wildlife. The construction and operation of the DM&E rail line, and possibly increased traffic due to designation of the Crazy Horse Scenic Byway, would likely result in minor to moderate, adverse cumulative impacts on wildlife populations.

When these impacts are added to the minor long-term adverse impacts on wildlife from construction of a new visitor facilities and parking areas under alternative 4, minor, long-term, adverse cumulative impacts on wildlife would be anticipated. However, the actions in alternative 4 would add only a slight increment to this cumulative impact because the impacts of the alternative would be negligible to minor, localized, and short term.

**Conclusion.** The alternative would have minor, long-term, adverse impacts on wildlife due to the construction of the new visitor facilities and parking areas. The alternative could have a minor, long-term, adverse cumulative impact on wildlife in the area due to increased habitat fragmentation and wildlife displacement. These impacts would not constitute an impairment of national historic site resources or values.

## IMPACTS ON VISITOR USE AND EXPERIENCE

### General Quality of the Visitor Experience

In alternative 4, visitors would experience the Delta One facility as close to its ready-alert status as possible, with many original objects in situ. This sense of seeing the site “as it really was” would appeal to most visitors and would be a major beneficial effect. Most visitors would take a guided tour of the Delta One facility and would benefit from the attention of an NPS interpreter. This would be a major beneficial impact for those visitors.



Some visitors might not be able to take a tour or might be unwilling to make the necessary time commitment. Alternative interpretation at the visitor / administrative facility and open access to the exterior spaces at Delta One would offset the negative effects for these visitors, and so this would constitute only a minor negative impact.

During the high visitation months it is expected that visitation to the visitor facility would be considerably higher than the tour capacity.

When tours were fully booked for the day, management would have the option of allowing visitors to park at Delta One and take an interpretive-led tour of the grounds. This would be a long-term moderate beneficial impact on those visitors. Allowing large groups with reservations, such as commercial and school groups, to go through the support building would be a long-term moderate beneficial impact on those visitors.

With the increase in staffing at the national historic site, the partnership agreement with the South Dakota Air and Space Museum would enhance interpretation of the missile field and the Cold War era as well as increase visitor understanding of missile operations.

### **Overall Range of Visitor Opportunities**

A relatively wide range of opportunities would be available to visitors in this alternative. At Delta One visitors could have a guided tour (potentially via a shuttle). Delta Nine would be available to visitors by car and self-guided tour on request. A range of interpretive programs would be available at the visitor / administrative facility. Likely one or more of these opportunities would appeal to most visitors and would be a major beneficial effect.

### **Comprehensiveness of Interpretive Opportunities**

The availability of an NPS interpreter for tours of Delta One would provide the widest possible range of interpretive thematic opportunities and would allow for tailoring each tour to the interests of individual visitors and groups. This richness of interpretation would be a major beneficial impact for visitors on the tours.

For visitors unable to take the tours, interpretation would be more limited, but because of the interpretive media and interpretive programs at the visitor/ administrative facility, the interpretive potential would still be high, and this would be a moderate beneficial effect for visitors.

### **Cumulative Impacts**

The South Dakota Air and Space Museum at Ellsworth Air Force Base exhibits and interprets a variety of bombers, fighters, utility aircraft, missiles, plus many indoor exhibits of aviation memorabilia. Among these are a Minuteman Missile II silo and a cutaway of the underground capsule. This is the only Minuteman Missile interpretive action that occurs outside the national historic site. When the impact of this action is added to the wide range and comprehensiveness of interpretive opportunities available at the national historic site under alternative 4, the result would be a long-term, major, and beneficial cumulative effect for visitors. The impacts of alternative 2 would comprise most of this beneficial cumulative effect.

### **Conclusion**

This sense of seeing Delta One “as it really was” would appeal to most visitors, and those who take a guided tour of the Delta One site would benefit from the attention of an NPS interpreter. This would be a major beneficial

impact for most visitors. The wide range of options for visiting and learning about the sites would appeal to most visitors and would be a major beneficial effect. The richness of interpretation in this alternative would be a major beneficial impact for visitors on the tours, and on-site interpretive media and interpretive programs at the visitor/administrative facility would be a moderate beneficial effect on visitors.

There would be a long-term, major, and beneficial cumulative effect for visitors. The impacts of alternative 2 would comprise most of this beneficial cumulative effect.

## IMPACTS ON THE SOCIOECONOMIC ENVIRONMENT

### Analysis

The implementation of alternative 4 is expected to have a minor beneficial impact on the overall regional tourism and recreational economy. This alternative allows for a modest number of newly constructed facilities including a new visitor / administrative facility at exit 131. As in alternatives 1 and 3, it is expected that a primary facility at this location (along the major access route to Badlands National Park) would attract a high level of unscheduled visitation plus those with a particular interest in the national historic site.

Development expenditures of about \$8,895,818 would be needed to restore Delta One and add an informal parking area; rehabilitate Delta Nine and add a formal parking area with a kiosk and vault toilet; and build a primary facility north of exit 131 on Interstate 90. Expenditures would mainly be for construction labor and materials. Other costs related to development would occur over the lifetimes of the various development projects — thus moderating their effects on the local economy.

The expenditures of funds (such as maintenance of heating and cooling systems)

would not occur all at one time but take place over the lifetimes of the various development projects and over the life of this plan (25 years) — thus spreading out their effect on the local economy.

The national historic site would need 14.75 full-time-equivalent positions to implement this alternative. Some of these positions would be seasonal or part time. A shuttle service could (if implemented) be provided using General Services Administration (GSA) leased vehicles. Some additional employment opportunities for drivers and other workers might occur.

The annual operating budget for the national historic site would be about \$982,246. These expenditures would be a long-term continuing commitment of support by the National Park Service. The total costs of alternative 4 would be approximately \$9,878,066.

### Cumulative Effects

Visitors to the region would have another unit (the fifth) of the national park system competing for their limited visitation time in a region that has many noteworthy attractions and is already a focus of the tourism industry in South Dakota. This alternative would also accommodate the many more visitors than the no-action alternative. Some tourists might stay longer in the region to visit all the “national parks” in southwestern South Dakota. Some minor, long-term, beneficial cumulative impacts on the tourism industry would result because the national historic site would be open to the public.

### Conclusion

Development of the national historic site would have some minor long-term beneficial impacts on the touring public and the tourism industry because a larger number of people

than under the no-action alternative would have the opportunity to visit the sites. The funds spent to construct the visitor/administrative facility and staff and operate the national historic site would be about \$9,878,066.

The financial impacts on the three-county regional economy would be beneficial but minor due to the size of the regional economy (\$2.4 billion in earnings and nearly 68,700 jobs in 2004) and the relatively low magnitude of expenditures and few job opportunities resulting from developing the national historic site. The funds spent to construct facilities and operate and staff the national historic site would have only a minor impact on the local economy and provide a minor long-term beneficial effect on socioeconomic factors such as population, income, employment, and earnings.

Some minor, long-term, beneficial cumulative impacts on the tourism industry would result because the national historic site would be open to the public.

## **IMPACTS ON NPS OPERATIONS**

### **Overview**

There would be three new areas/facilities in this alternative — a 7,700 square foot visitor / administrative facility at exit 131; an informal parking area at Delta One, and an interpretive kiosk / vault toilet and formal parking area at Delta Nine. Visitation to the national historic site is projected at about 450,000 per year considering that exit 131 is the major entrance into Badlands National Park (which has 1.2 million visitors annually).

### **Coordination and Staffing**

Staff would be located in one area — at the visitor / administrative facility at exit 131. Having staff in this location and on shuttle tours would have a moderate to major long-

term beneficial impact on staff coordination and operations because tours would only be to Delta One.

Because shuttle tour reservations would be required to access Delta One, most visitors would be expected to stop at the visitor/administrative facility. However, because a parking area would be available at Delta Nine, some visitors might choose to drive directly there. There would be 14.75 full-time equivalent employees.

This alternative allows aboveground tours of Delta One when all shuttle tours are fully booked. There would be no limits on visitation at Delta Nine. These conditions would result in fewer people concentrated at the visitor facility than under alternatives 1 and 2. Therefore, this alternative would result in a moderate to major long-term beneficial impact on providing adequate visitor services/amenities because staffing and the primary visitor facility would be better able meet visitation demands and provide the greatest flexibility for coordinating visitor activities.

### **Maintenance**

Five structures/facilities would be maintained in this alternative— the visitor / administrative facility; Delta One and Delta Nine; the Delta One parking area; and the Delta Nine kiosk, vault toilet, and parking area.

As in alternative 2, restoration treatment of Delta One would require the highest level of maintenance to retain and preserve original features, including finishes, distinctive materials, and construction techniques; to repair original items; to replace features in kind using the gentlest means possible; and to make the limited and sensitive upgrades of mechanical and electrical systems. Delta Nine would contain newly introduced elements such as walkways, protective barriers,

permanent accessibility ramps, traffic controls, and interpretive and safety signs. As in alternative 3, providing utilities to a primary facility at exit 131 would require hooking up to existing water and electric lines, and providing a sewage lagoon. Underground water storage tanks would be used for domestic and fire suppression needs. Electricity is available.

The original heating and air-conditioning systems at Delta One would be brought back on-line and monitored. It is expected these systems would be replaced with modern equipment. Because original museum objects would be in place, environmental needs to protect the resources would be closely monitored and original systems would be replaced if needed. As in alternative 3, placing a viewing enclosure over the Delta Nine underground launch support building would require the installation of environmental controls.

Maintaining the grounds and vegetation at Delta One to military standards would include painting, replacing in kind, and restoring grounds elements. In addition, the primary visitor facility, Delta Nine grounds and parking area, and Delta One informal parking area would be maintained to NPS standards.

Security measures at Delta One would include on-site interpretive rangers during shuttle tours and minimal upgrades to surveillance equipment. In addition, Delta One and its informal parking area, Delta Nine and its parking area, and the primary visitor facility would be routinely patrolled by law enforcement staff.

Delta One would require a high level of maintenance because of the specialized needs of maintaining a restored site and the grounds to a military standard. A parking area with safety elements for crossing the county road at Delta One would also increase maintenance. Maintenance activities would increase due to the size of the primary visitor / administrative

facility and its accompanying infrastructure. However, an adequate facility would be available, thus reducing maintenance over alternative 2. Overall, this would result in a moderate long-term adverse impact on maintenance.

### **Cumulative Impacts**

The continued population growth of the Rapid City area, the development of the Lakota Heritage and Education Center, and the designation of the Badlands Loop and the Crazy Horse scenic byways would be expected to attract visitors to the Black Hills region. A high percentage of these visitors would be expected to use exit 131 of Interstate 90 and consequently stop at the visitor facility of Minuteman Missile National Historic Site even though it would not be their primary destination. As in alternative 3, although this type of unscheduled visitation could cause a moderate long-term adverse cumulative impact on NPS operations and budget, the impact would be minor because staff and facilities would provide adequate visitor amenities and services to these visitors.

### **Conclusion**

The overall impacts of implementing this alternative would be moderate to major, long term, and beneficial because staff would only be making a shorter (8-mile) round trip shuttle tour than in alternative 2 and would be providing a high level of on-site visitor support and resource protection at Delta One. Visitors on-site at the Delta One facility would be accompanied by a ranger, which would reduce operation needs. Installing modern utility systems would improve efficiency and reduce maintenance. Not having a staffed facility at either Delta facility would reduce maintenance and operations compared to alternatives 2 and 3.

There would be a minor long-term adverse cumulative impact on NPS operations and budget.

## **EFFECTS ON ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL**

A shuttle system would be used to transport visitors (about 9 miles round-trip) from the visitor center to the Delta One facility. Shuttle buses would be energy efficient, possibly hybrid, and/or use diesel fuel and would be expected to moderately reduce the consumption of gasoline.

Private vehicles would be the primary means of transportation to the Delta Nine facility and would be expected to have no effect on conserving gasoline.

Additional energy requirements to manage the sites (gasoline consumption, and heat and electricity for the Delta facilities, the visitor/administration building, and one visitor contact station) would be expected to moderately increase energy requirements.

Installation of modern heating and electric systems in the Delta facilities would be more energy efficient and moderately reduce energy consumption.

As in alternatives 2 and 3, the visitor/administrative facility and two visitor contact stations would be constructed using energy-efficient technology that reduces the energy requirements for heating and cooling.

As in alternatives 2 and 3, limited amounts of non renewable resources would be used for construction projects and restoration of the Delta facilities and landscape. This expenditure of energy would be short term and negligible and include fuel for construction vehicles and materials.

## **UNAVOIDABLE ADVERSE IMPACTS**

### **Natural Resources**

As in alternative 1, unavoidable adverse impacts would be associated with vegetation loss caused by social trailing in the grassland surrounding Delta Nine. These impacts would be expected to be negligible because most visitors would be expected to spend their time inside the security fence.

### **Cultural Resources**

As in alternative 1, unavoidable adverse impacts would be directly associated with increased visitation — such as wear from touching doors, floors, and walls. These impacts would be more than offset by providing visitor access to the facilities. These impacts would be negligible because visitors would be with NPS staff at all times.

If a viewing enclosure was placed over the launch support building at Delta Nine, unavoidable adverse impacts would occur. However, mitigative actions would ensure that this installation was reversible with negligible loss of historic fabric.

## **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

### **Natural Resources**

As in alternatives 2 and 3, vegetation loss from developing facilities on the land transfers of up to 28.65 acres from the U.S. Forest Service would be irreversible and irretrievable as long as the buildings remained. However, the impacts would be negligible because the National Grassland contains 600,000 acres.

### **Cultural Resources**

Irreversible and irretrievable losses of resources would result from unauthorized collection and vandalism of cultural resources. At Delta One, the possibility of this type of damage would be slight because visitors would be with NPS staff at all times. At

Delta Nine, the possibility of this type of damage would be slight because most original resources would have been removed and placed in appropriate locations and the on-site resources would have extensive protection techniques applied.

The materials and energy used for restoration and facility development and maintenance would be irreversibly and irretrievably committed. This commitment would be slight in this alternative.

### **NPS Operations**

The additional energy requirements needed for the visitor /administrative facility would result in an irreversible commitment of resources. In addition there would be a commitment of materials for construction of the facility and parking areas.

### **THE RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

As in alternative 2 and 3, developing and constructing facilities, improving roads, and restoring cultural resources would result in short-term socioeconomic benefits. After construction work was finished, long-term benefits would result from the improved facilities, access, and visitor programs.

Locating the visitor and administrative facility at exit 131 would eventually have some effect on the growth of private development from commercial facilities resulting in long-term benefits to the surrounding area.



DELTA FLIGHT PEACEKEEPER VEHICLE  
USED BY SECURITY PERSONNEL



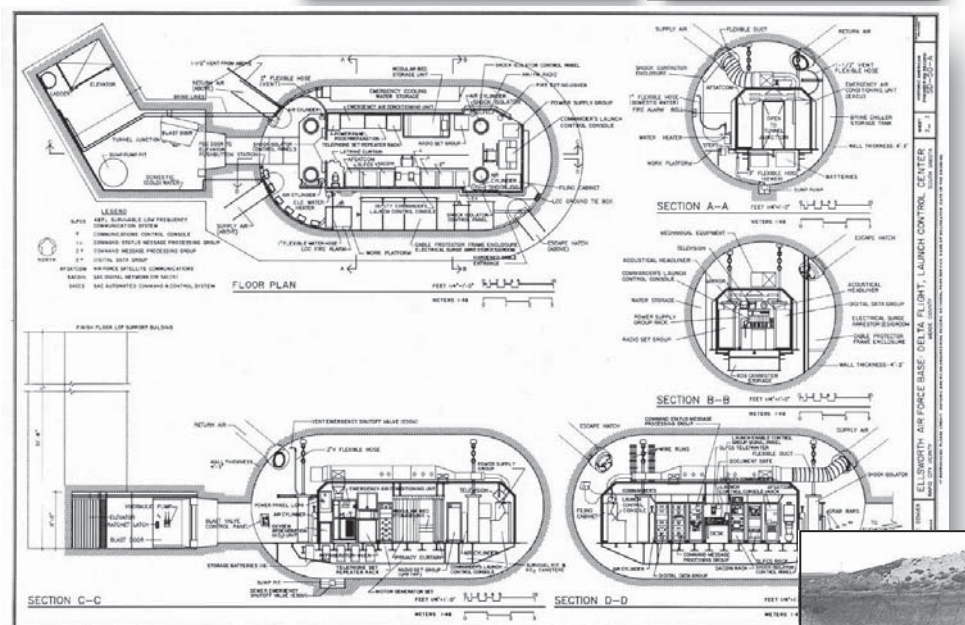
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PRIDE HANGAR  
AT ELLSWORTH AIR FORCE BASE

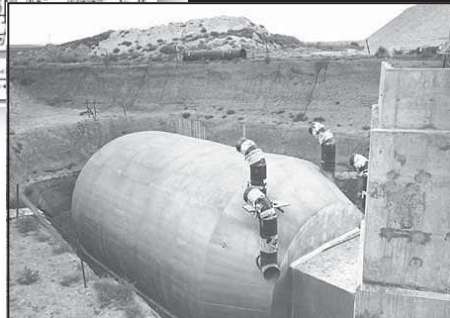


**CHAPTER 5:  
CONSULTATION  
AND  
COORDINATION**



LINE DRAWINGS OF INTERIOR  
OF DELTA ONE LAUNCH  
CONTROL CENTER

LAUNCH CONTROL  
CENTER NEARING  
COMPLETION  
IN SOUTH DAKOTA







## PUBLIC INVOLVEMENT

The notice of intent to prepare an environmental impact statement was published in the *Federal Register* on March 26, 2001.

This *Draft General Management Plan/ Environmental Impact Statement* for Minuteman Missile National Historic Site represents thoughts presented by the National Park Service, Native American groups, and the public. Consultation and coordination among the agencies and the public were vitally important throughout the planning process.

### PUBLIC MEETINGS AND NEWSLETTERS

The public had numerous avenues to participate in the development of this general management plan. They could attend public meetings, respond to newsletters, or contact the superintendent of Badlands National Park. A mailing list was compiled that consisted of members of governmental agencies, nongovernmental groups, businesses, legislators, local governments, and interested citizens.

#### *Newsletter 1 and Public Meetings*

*Newsletter 1*, issued in spring 2001, described the planning effort and process, included draft purpose and significance statements, and solicited comments about what should be addressed in the general management plan. About 350 copies of the newsletter were mailed/distributed, and copies were also made available at the public meetings and in the visitor center at Badlands National Park. Less than 10 people attended the public meetings in Wall and Rapid City, South Dakota, on June 18–19, 2001.

**Comments on *Newsletter 1*.** Eleven written comments were received in response to *Newsletter 1*. Approximately 10 people attended the public meetings. The following summarizes these written and verbal comments.

Most commenters felt that the national historic site would be a tribute to those who served and sacrificed; one wanted the site to be dedicated to those who served. Two commented that the construction of the sites should be a part of the story that is told. Some suggested the history of the Titan missile (pre Minuteman) be included, as well as feeling that the history of the upgrades and technology over the 30 years of the program would be interesting. Providing context for why our nation was developing a missile defense (how life was different then) was another commenter's suggestion. Another wanted to know if Russia was doing anything similar and suggested efforts to find out. One person wrote that the National Park Service should incorporate thoughts and ideas from people who worked at the sites in the planning process and perhaps site interpretation.

A Cactus Flats business and the South Dakota Department of Transportation favor exit 131 for the visitor facility location. (The Department of Transportation noted the exit at 131 is engineered to a higher traffic volume than exit 127.) One comment was to consider a multiagency regional visitor center. The city of Wall wants opportunities to benefit from the tourists that will come to the national historic site. Interpretation at the site should be well rounded and show the history of missile evolution. Missileers said that they were willing to donate personal items for exhibits.

## **Newsletter 2 and Public Meetings**

*Newsletter 2*, which described issues and concerns, management zones, and preliminary conceptual alternatives, was issued in March 2002. About 300 copies of the newsletter were mailed, and copies were also made available at the public meetings and in the visitor center at Badlands National Park. This newsletter solicited comments on the above topics as well as the location of the visitor facility.

Public meetings were held on March 12-13, 2002. About 31 people attended the public meetings in Wall and Rapid City, South Dakota.

**Written Comments on *Newsletter 2*.** There were many thoughts expressed in the 66 written comments received on *Newsletter 2*. One comment seems to sum up many of the other comments: “The only way the public will appreciate the purpose and commitment of those who served is by seeing what they saw, being where they were, and feeling what they felt.” The other idea that came through was protecting the resources.

One person suggested operating the sites similar to how Old Williamsburg is operated. Several wanted it presented the way it was during alert conditions. Another suggested a reenactment of a possible launch. Several people thought that park personnel in USAF/SAC missile crew uniforms and background recordings of the sounds of the time would be a good idea, and many agreed that former military personnel stationed there could/should be tour guides. Videotapes made of the experiences of those who served there (especially when they were on a nuclear alert) were also a suggestion. In general, people wanted the structures to be presented in the context of the Cold War, so that “new generations would understand the terrors,” and they wanted new generations to understand the military events that spurred the nuclear race, with English, Russian, and German views presented. Many also felt that it

was important to preserve the structures “just the way they have always looked from the interstate.” One person felt that the sites should be minimally interpreted and should not be celebrated or honored because nuclear weapons almost annihilated humanity.

There were varying opinions about interpretive media —

- from wanting maps of all launch control facilities in North and South Dakota to wanting maps of all Minuteman Missile wing locations;
- from wanting a target/calibration van, , service helicopter (with appropriately dressed mannequins inside), missile transporter-erector (one side removed to see missile close up), missile crew vehicle, maintenance and security vehicles to wanting a full-scale Minuteman II missile;
- from wanting a SAC Civil Engineering Manual to wanting comprehensive written materials and drawings/photos to take home.

One person suggested that programmatic interpretation could be as effective and wanted to minimize the use of waysides at Delta Nine to preserve the cultural landscape there. Several commented that seeing the sites through the fence was not a good option because there is not much to see that way and it would “turn people off.” Some suggested a glass roof for the launch facility support building at Delta Nine, while others suggested interpreting this facility through pictures to retain its integrity. Some felt that the public would have more interest in the launch control center at Delta One than in the launch facility.

Shuttles, tours, and access to the structures were other topics with varied opinions. Some felt that the more access for visitors, the better. Some felt that all access should be limited to ranger-led tours to prevent vandalism and give the feelings of this being a secured area. Several felt that all tours should

be guided by knowledgeable persons. Some suggested signing up at the visitor facility and then being taken to both sites. Some noted that people do not like to ride buses. Some said tours could be fully self-directed except in the capsule; others felt that the only way to preserve Delta One is through ranger-led tours via shuttles from the visitor center. Some felt that capsule and silo access (on a tour) was “a must.” Some did not want to be “trapped” into a schedule, wanting time to “take it all in.” Security checks, similar to what Air Force personnel go through at active sites, might be an interesting addition to a visitor tour was another suggestion. Some felt the buildings and grounds should not be shabby but kept to USAF specifications (no weeds, nothing broken, and buildings, pads, and doors painted).

Opinions about the story to be told were abundant. One person said that the whole project should be dedicated to the Cold War — the old SAC motto "War is our Profession, Peace is our Product" said it best. Others also liked the broader focus on the Cold War. You will tell the “important story to people who have no idea how significant missiles were to free world.” This individual favored a story that focuses on the role of the Minuteman missiles in the national defense policy. Many agreed that people who tell the story must be knowledgeable. That the site had three sources of electric power (commercial, preheated diesel generator, and motor generator) was one person’s idea of an interesting story, and someone else suggested the motors used to open the silo doors would be interesting because they work differently.

One person suggested remembering that Delta Nine launch facility represents 1,000 Minuteman launch facilities, that the Delta One launch control facility represents 100 launch control facilities and people who served topside, and that the Delta One launch control center represents 100 launch control centers and all the missile combat crews who have pulled alerts in them starting in 1962.

Another wanted people to know that the launch control facilities were “home” for all on-duty personnel. Several people wanted to have all the people who supported the “capsule jocks” remembered — the people who built the facilities, facility managers, maintenance people, people in the electronics lab, cooks, food deliverers, cops, submariners, bombers, and others. Others wanted to ensure that visitors know that the mission continues through the ICBM program.

Not unexpectedly, there were diverse opinions about favored alternatives. Alternatives 3 and 4 were about equally favored, followed by alternative 2, a blend of alternatives 3 and 4, and a blend of alternatives 4 and 2. Several people suggested a blending of the concepts of alternatives 2, 3 and 4. One person pointed out that alternative 2 could be done with guides on-site and “self-driven” visitors and not just shuttles and guided tours. Some felt that alternative 2 did not need to require that all mechanical systems were fully maintained; they wanted the money not used there to go to preservation. Alternative 3 could be accomplished as well (or better), noted one person, with shuttle bus and dedicated guides. One person wanted the additional acreage for preservation of alternative 3 and the preservation zone in alternative 4. Another person suggested the visitor, interpretive, and staff support facilities in alternative 3 and the access to Delta One and Delta Nine in alternative 4. One person said that the vehicles and other surface displays at Delta Nine conflict with the commemorative theme of alternative 4, and that the displays should be limited to the visitor facility. One person felt that the displays should be linked to the Air and Space Museum at Ellsworth Air Force Base.

At about four to one, the preferred location for the visitor facility was exit 127. Some preferred having the visitor facility at Delta One, not just nearby, and some said that no visitor facility was needed because the existing launch control building (less cost) or the

visitor contact stations at both Delta facilities that would be in alternative 3 could be used. A few said build some visitor/education facility at both Delta One and Delta Nine. One person suggested the visitor facility being in Rapid City.

Reasons for preferring exit 127 included it being the most logical for one-stop-only visitors, being the closest to the primary attraction, giving the feeling of what is was like to be stationed there, and requiring less shuttle time and costs. Among the reasons for preferring exit 131 were that the sites would remain blended in a nonintrusive manner, it was a logical place for a tour to start, and it would give visitors a choice of routes.

**Comments at Public Meetings.** Attendees to the public meetings in response to *Newsletter 2* provided additional verbal comments. These verbal comments varied widely. Of those expressing an opinion about the location of the visitor facility, 10 preferred exit 131, 11 preferred exit 127, one preferred the USFS center at exit 110 for east-west traffic, and one preferred the Badlands visitor center at Cedar Pass.

There were many comments at the public meetings about interpretation at the site — from put a sign on the gate “This is one of 150 sites” and then lock it up and send everyone to the Ellsworth museum — to put a mock-up of the capsule or a full-size cutaway of the launch control center and elevator in the visitor facility. Another suggestion was letting visitors look into the launch facility support building from the top. Another commenter wanted audio tours with comments and stories from USAF personnel, and another person suggested a video about the daily activities of personnel (e.g., show how personnel got on site and personnel going over checklists). Many were concerned about what the story of the national historic site should include — Minuteman I from the early days, the Titan I sites of early 1960s (there is such a site just down the road), the Soviet perspective of the

U.S. nuclear deterrent force, and telling the entire Cold War story, including protest movement and impacts on society. One person wanted the story to be accurate.

Tours were another topic of discussion, from those who did not want to be locked into taking a tour, to those who thought a three-hour tour might be too much, although those who wanted a tour would go even if it was three hours. Another wondered if there was another option. Someone suggested doing a 1 ½-hour tour to Delta One and then letting people drive themselves to Delta Nine (as in alternative 4). One person liked alternative 4 because it did not commit visitors to a three-hour tour.

Transportation was another topic of interest. Some only wanted to drive their cars, some would be happy with a shuttle that ran frequently, some suggested short shuttle trips, and some suggested no shuttle to Delta Nine (just have parking available). Also suggested was a combination — tours for the really interested and parking for the “look-see-go” tourist.

Then there were some miscellaneous comments —

- Delta Nine needs staff on-site or very good security system to stop vandalism.
- Concern that today’s 40 acres (donated by U.S. Forest Service) will become 80 acres in the future, and ranchers will begin to lose their grazing land.
- Barriers should not be installed in historic structures (as in alternative 3).

## CONSULTATION

### Section 106 Consultation

Agencies that have direct or indirect jurisdiction over historic properties are required by Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 270, et seq.) to take into account the effect of

any undertaking on properties eligible for the National Register of Historic Places. To meet the requirements of 36 CFR 800, the National Park Service sent letters to the South Dakota historic preservation office and the Advisory Council on Historic Preservation on April 4, 2002, inviting their participation in the planning process. Both offices were sent all the newsletters with a request for comments.

Under the terms of stipulation VI.E of the 1995 programmatic agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, the National Park Service,

in consultation with the SHPO [state historic preservation office], will make a determination about which are programmatic exclusions under IV.A and B, and all other undertakings, potential effects on those resources to seek review and comment under 36 CFR 800.4-6 during the plan review process.

In the table below the specific undertakings of the preferred alternative are listed, along with the NPS determination of how those individual undertakings relate to the 1995 programmatic agreement.

### Consultation with Native Americans

Letters were sent to the following Native American groups, identified as affiliated with

the national historic site, on January 10, 2002, to invite their participation in the planning process:

Cheyenne River Sioux Tribe  
Crow Creek Sioux Tribe  
Flandreau Santee Sioux Tribe  
Lower Brule Sioux Tribe  
Oglala Sioux Tribe  
Sisseton-Wahpeton Sioux Tribe  
Rosebud Sioux Tribe  
Yankton Sioux Tribe  
Standing Rock Nation  
Ponca Tribe  
Omaha Tribe  
Santee Sioux Tribe  
Winnebago Tribe  
Spirit Lake Nation  
Three Affiliated Tribes  
Turtle Mountain Band of Chippewa  
Trenton Indian Service Area

The tribes were briefed on the scope of the planning project and the preliminary alternatives by newsletter and follow-up telephone calls soliciting comments. No tribes commented at this time.

Conversations have been ongoing throughout the planning process to inform the tribes about the progress of the plan and identify how and to what extent they would like to be involved. The tribes will have an opportunity to review and comment on this draft plan.

**TABLE 21 ACTIONS THAT MAY AFFECT CULTURAL RESOURCES AND ASSOCIATED COMPLIANCE REQUIREMENTS FOR THE PREFERRED ALTERNATIVE**

(Requirements of the state historic preservation office and/or the Advisory Council on Historic Preservation)

Action	Compliance Requirement
Potential upgrading of the HVAC system to provide for visitor comfort and climate-controlled environment for museum objects	Further SHPO review may be necessary at the scoping, conceptual, and possible at the design stage of the project.
Repair damage that occurred during deactivation and mothballing to return the facilities consistent with their condition during active status	Further SHPO review may be necessary at the scoping, conceptual, and possible at the design stage of the project.
Alterations necessary for ultraviolet protection to interior furnishings and museum objects	Further SHPO review may be necessary at the scoping, conceptual, and possible at the design stage of the project.
In-kind replacement of flagpole and other minor structures to return facilities closer to their historic condition.	Further SHPO review may be necessary at the scoping, conceptual, and possible at the design stage of the project.
Increased visitation from the use of shuttle tours to provide visitor access	Further SHPO review may be necessary at the scoping, conceptual, and possible at the design stage of the project.
Natural wear from visitor touching walls, furnishings, and other building components	No further SHPO review necessary
Installation of environmental monitoring systems within all national historic site structures	Further SHPO review may be necessary at the scoping, conceptual, and possible at the design stage of the project.
Use of temporary ramps to allow universal accessibility	No further SHPO review necessary
Replacing the original steel cover with a clear one on the launch facility support building at Delta Nine	Further SHPO review may be necessary at the scoping, conceptual, and possible at the design stage of the project.
The missile silo and launch facility support building and other subterranean antenna facilities would be closed to visitor access.	No further SHPO review necessary
Public visitation	No further SHPO review necessary.
On-going facility maintenance	No further SHPO review necessary.
Conduct cultural resources survey at location of new visitor center	Further SHPO consultation will be necessary

**MEETINGS WITH OTHER AGENCY OFFICIALS, BUSINESSES, AND ORGANIZATIONS**

The superintendent at Minuteman Missile has had meetings with or talked with various entities regarding the general management plan, as follows:

- Ann's Motel (Wall, South Dakota)
- Black Hills, Badlands, and Lakes Association
- City of Wall

- Circle 10 Campground (Philip, South Dakota)
- Crew Cattle Company
- Ellsworth Air Force Base Civil Engineering Office
- Golden West Telephone Company
- Haugen, Mark (Senator Thune's office)
- Kadoka Community Development Association
- Philip Chamber of Commerce

Shoemaker, Darrell (Senator Johnson's  
office)  
South Dakota Congressional Delegations  
(Rapid City Offices)  
South Dakota Department of Tourism  
South Dakota Department of  
Transportation  
South Dakota District 26 Representatives  
Cooper Garnos and Barry Jensen  
South Dakota District 26 Senator (John  
Koskan)  
South Dakota State Historic Preservation  
Office

Super 8 Motel (Wall, South Dakota)  
Taken Alive, Ira (Representative Herseth's  
office)  
U.S. Forest Service,  
Wall Drug  
Wall Chamber of Commerce  
West Central Electric Cooperative, Inc.  
West River/Lyman Jones Rural Water  
District  
West River Electric Cooperative

## AGENCIES AND ORGANIZATIONS RECEIVING A COPY OF THIS DOCUMENT

### FEDERAL AGENCIES

Advisory Council on Historic Preservation  
U.S. Department of Agriculture  
    U.S. Forest Service, Buffalo National  
        Grassland, Wall, SD  
    U.S. Forest Service, Buffalo National  
        Grassland, Chadron, NE  
    Natural Resources Conservation Service  
U.S. Department of State, Bureau of Public  
    Affairs  
U.S. Department of the Interior  
    Bureau of Indian Affairs  
    National Park Service,  
        Agate Fossil Beds National Monument  
        Badlands National Park  
        Devils Tower National Monument  
        Denver Service Center  
        Fort Union Trading Post National  
            Historic Site  
        Harpers Ferry Service Center  
        Jewel Cave National Monument  
        Midwest Regional Office  
        Mt. Rushmore National Memorial  
        Niobrara National Scenic  
            River/Missouri National  
            Recreational River  
        Northern Great Plains I&M Network  
        Scotts Bluff National Monument  
        Theodore Roosevelt National Park  
        Wind Cave National Park  
U.S. Fish and Wildlife Service  
U.S. Environmental Protection Agency  
U.S. Air Force  
    Andrews Air Force Base, Historical  
        Foundation  
    Ellsworth Air Force Base  
    Grand Forks Air Force Base  
    Hill Air Force Base  
    Malmstrom Air Force Base  
    Maxwell Air Force Base  
    Minot Air Force Base  
    Patrick Air Force Base  
    Vandenberg Air Force Base  
    Warren Air Force Base

Whiteman Air Force Base  
Wright-Patterson Air Force Base  
U.S. Air Force Academy

### U.S. SENATORS AND REPRESENTATIVES

Honorable Tim Johnson, U.S. Senator  
Honorable John Thune, U.S. Senator  
Honorable Stephanie Herseth Sandlin, U.S.  
    House of Representatives

### STATE AGENCIES

South Dakota Department of Agriculture  
South Dakota Department of Environment  
    and Natural Resources  
South Dakota Department of Game, Fish, and  
    Parks  
South Dakota Department of Transportation  
South Dakota Department of Tourism and  
    State Development  
    Office of Economic Development  
    Office of Tourism  
South Dakota State Department of Military  
    and Veterans Affairs  
South Dakota State Historic Preservation  
    Office

### STATE OFFICIALS

Jim Bradford, State Representative  
Michael Buckingham, State Representative  
Mark DeVries, State Representative  
Don Van Etten, State Representative  
Gordon Howie, State Representative  
Jim Lintz, State Senator  
Gordon Pedersen, State Representative  
Mike Rounds, Governor  
Dennis Schmidt, State Senator  
Theresa TwoBull, State Senator



**AMERICAN INDIAN TRIBES  
TRADITIONALLY ASSOCIATED WITH  
NATIONAL HISTORIC SITE LANDS**

Cheyenne River Sioux Tribe  
Crow Creek Sioux Tribe  
Flandreau Santee Sioux Tribe  
Lower Brule Sioux Tribe  
Oglala Sioux Tribe  
Rosebud Sioux Tribe  
Santee Sioux Tribe  
Sisseton-Wahpeton Sioux Tribe  
Yankton Sioux Tribe  
Standing Rock Sioux Tribe  
Ponca Tribe  
Omaha Tribe  
Winnebago Tribe  
Spirit Lake Nation  
Three Affiliated Tribes  
Turtle Mountain Band of Chippewa  
Trenton Indian Service Area

**CITY AND COUNTY GOVERNMENTS**

City of Interior  
City of Kadoka  
City of Philip  
City of Wall  
Bennett County  
Jackson County  
Haakon County  
Pennington County  
Shannon County

**ORGANIZATIONS AND BUSINESSES**

Air Force Historical Foundation  
Alliance for Nuclear Accountability  
Association of Air Force Missileers  
Badlands Natural History Association  
Badlands National Park Concessions: Forever  
Resorts LLC  
Badlands Trading Post LLC  
Badlands Weed Management Area  
Black Hills, Badlands & Lakes Association of  
South Dakota  
Black Hills Central Reservations

Center for Western Studies, Augustana  
College  
Circle 10 Campground  
Circle View Guest Ranch  
Cold War International History Project  
Cultural Heritage Center, Pierre, SD  
Custer Chamber of Commerce  
Deadwood Chamber of Commerce  
Faith Chamber of Commerce  
Golden West Telephone Company  
Hill City Chamber of Commerce  
Hot Springs Area Chamber of Commerce  
Kadoka Chamber of Commerce  
Kadoka School District  
Keystone Chamber of Commerce  
Land Recyclers, Inc.  
Mead and Hunt Inc/Peter Kiewit Company  
Mt. Rushmore History Association  
Murdo Chamber of Commerce  
National Atomic Museum  
National Parks and Conservation Association  
NGO Committee on Disarmament  
Nukewatch the Progressive Foundation  
Old Fort Meade Museum  
Performance Development Group  
Philip Chamber of Commerce  
Philip School District  
Pine Ridge Chamber of Commerce  
Prairie Homestead Museum  
Rapid City Chamber of Commerce  
Rapid City Historic Preservation Committee  
Rushmore Photos and Gifts Inc.  
Sierra Club, South Dakota Chapter  
South Dakota Air and Space Museum  
South Dakota School of Mines and  
Technology  
South Dakota State, Brookings  
South Dakota University, Vermillion  
Sturgis Chamber of Commerce  
The Boeing Company  
The Cold War Museum, Fairfax, VA  
The Journey Museum  
The Ranch Store  
Thikol Corporation, UT  
Titan Missile Museum, Green Valley, AZ  
Wall-Badlands Area Chamber of Commerce  
Wall Drug  
West River Central Electric Co-op  
West River Electric

West River Lyman Jones  
West River Museum Society  
U.S. National Council on Public History  
Wall School District

## MEDIA

*Bennett County Booster, SD*  
*Black Hills Bandit*  
*Kadoka Press*  
KBHE News, Rapid City, SD  
KELO, Rapid City, SD  
KEVN, Fox 7, Rapid City  
KILI, Porcupine, SD  
KOTA, Rapid City, SD  
*Mitchell Republic*  
*Murdo Coyote*  
*Pennington County Courant*  
*Philip Pioneer Review*  
*Pierre Capitol Journal*  
*Rapid City Journal*  
*Rapid City Lakota Journal*  
*Sioux Falls Argus Leader*  
*South Dakota Public Broadcast News*  
*Sturgis Black Hills Press – Lawrence Centennial*  
*White River Millette News*

## INDIVIDUALS

Allen, Peter  
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Crankshaw, Henry III  
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Davis, Jay  
Dedy, Vern  
Dillon, William,  
Doll, James F.

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Gordon, Roy  
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Huey, William B.  
Hutchinson, Sayre  
Jarvis, Lyle  
Johnson, Rick  
Kammen, Marvin  
Kelchner, CMS Robert H. (Ret.)  
Knight, Andy  
Kruse, Kevin  
Kruse, Philip  
Larson, Lt. Col. George A. (Ret.)  
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McJunkin, Noel  
Merfeld, Homer,  
Morgan, Mark L.  
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Pavek, Tim  
Pfeiffer, Col. Thomas J. (Ret.)  
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Sewell, Stan  
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Ulvog, James  
West, William  
Williams, Gene  
Wilson, Tom  
Wilson, Robert  
Zaccagnino, Tony (Anthony)



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**APPENDIXES,  
REFERENCES,  
PREPARERS  
AND  
CONSULTANTS  
AND INDEX**



SHIELD OF THE 44TH  
STRATEGIC MISSILE WING  
AT ELLSWORTH AIR FORCE BASE



APPENDIX A: LEGISLATION

113 STAT. 1540

PUBLIC LAW 106-115—NOV. 29, 1999

Public Law 106-115  
106th Congress

An Act

Nov. 29, 1999  
[S. 382]

To establish the Minuteman Missile National Historic Site in the State of South Dakota, and for other purposes.

Minuteman  
Missile National  
Historic Site  
Establishment  
Act of 1999.  
16 USC 461 note.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

SECTION 1. SHORT TITLE.

This Act may be cited as the “Minuteman Missile National Historic Site Establishment Act of 1999”.

SEC. 2. FINDINGS AND PURPOSES.

(a) FINDINGS.—Congress finds that—

(1) the Minuteman II intercontinental ballistic missile (referred to in this Act as “ICBM”) launch control facility and launch facility known as “Delta 1” and “Delta 9”, respectively, have national significance as the best preserved examples of the operational character of American history during the Cold War;

(2) the facilities are symbolic of the dedication and preparedness exhibited by the missileers of the Air Force stationed throughout the upper Great Plains in remote and forbidding locations during the Cold War;

(3) the facilities provide a unique opportunity to illustrate the history and significance of the Cold War, the arms race, and ICBM development; and

(4) the National Park System does not contain a unit that specifically commemorates or interprets the Cold War.

(b) PURPOSES.—The purposes of this Act are—

(1) to preserve, protect, and interpret for the benefit and enjoyment of present and future generations the structures associated with the Minuteman II missile defense system;

(2) to interpret the historical role of the Minuteman II missile defense system—

(A) as a key component of America’s strategic commitment to preserve world peace; and

(B) in the broader context of the Cold War; and

(3) to complement the interpretive programs relating to the Minuteman II missile defense system offered by the South Dakota Air and Space Museum at Ellsworth Air Force Base.

**SEC. 3. MINUTEMAN MISSILE NATIONAL HISTORIC SITE.**

**(a) ESTABLISHMENT.—**

**(1) IN GENERAL.—**The Minuteman Missile National Historic Site in the State of South Dakota (referred to in this Act as the “historic site”) is established as a unit of the National Park System.

**(2) COMPONENTS OF SITE.—**The historic site shall consist of the land and interests in land comprising the Minuteman II ICBM launch control facilities, as generally depicted on the map referred to as “Minuteman Missile National Historic Site”, numbered 406/80,008 and dated September, 1998, including—

**(A)** the area surrounding the Minuteman II ICBM launch control facility depicted as “Delta 1 Launch Control Facility”; and

**(B)** the area surrounding the Minuteman II ICBM launch control facility depicted as “Delta 9 Launch Facility”.

**(3) AVAILABILITY OF MAP.—**The map described in paragraph (2) shall be on file and available for public inspection in the appropriate offices of the National Park Service.

**(4) ADJUSTMENTS TO BOUNDARY.—**The Secretary of the Interior (referred to in this Act as the “Secretary”) is authorized to make minor adjustments to the boundary of the historic site.

**(b) ADMINISTRATION OF HISTORIC SITE.—**The Secretary shall administer the historic site in accordance with this Act and laws generally applicable to units of the National Park System, including—

**(1)** the Act entitled “An Act to establish a National Park Service, and for other purposes”, approved August 25, 1916 (16 U.S.C. 1 et seq.); and

**(2)** the Act entitled “An Act to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance, and for other purposes”, approved August 21, 1935 (16 U.S.C. 461 et seq.).

**(c) COORDINATION WITH HEADS OF OTHER AGENCIES.—**The Secretary shall consult with the Secretary of Defense and the Secretary of State, as appropriate, to ensure that the administration of the historic site is in compliance with applicable treaties.

**(d) COOPERATIVE AGREEMENTS.—**The Secretary may enter into cooperative agreements with appropriate public and private entities and individuals to carry out this Act.

**(e) LAND ACQUISITION.—**

**(1) IN GENERAL.—**Except as provided in paragraph (2), the Secretary may acquire land and interests in land within the boundaries of the historic site by—

**(A)** donation;

**(B)** purchase with donated or appropriated funds; or

**(C)** exchange or transfer from another Federal agency.

113 STAT. 1542

PUBLIC LAW 106-115—NOV. 29, 1999

**(2) PROHIBITED ACQUISITIONS.—**

**(A) CONTAMINATED LAND.—**The Secretary shall not acquire any land under this Act if the Secretary determines that the land to be acquired, or any portion of the land, is contaminated with hazardous substances (as defined in section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601)), unless, with respect to the land, all remedial action necessary to protect human health and the environment has been taken under that Act.

**(B) SOUTH DAKOTA LAND.—**The Secretary may acquire land or an interest in land owned by the State of South Dakota only by donation or exchange.

**(f) GENERAL MANAGEMENT PLAN.—**

Deadline.

**(1) IN GENERAL.—**Not later than 3 years after the date funds are made available to carry out this Act, the Secretary shall prepare a general management plan for the historic site.

**(2) CONTENTS OF PLAN.—**

**(A) NEW SITE LOCATION.—**The plan shall include an evaluation of appropriate locations for a visitor facility and administrative site within the areas depicted on the map described in subsection (a)(2) as—

(i) “Support Facility Study Area—Alternative A”;

or

(ii) “Support Facility Study Area—Alternative B”.

**(B) NEW SITE BOUNDARY MODIFICATION.—**On a determination by the Secretary of the appropriate location for a visitor facility and administrative site, the boundary of the historic site shall be modified to include the selected site.

**(3) COORDINATION WITH BADLANDS NATIONAL PARK.—**In developing the plan, the Secretary shall consider coordinating or consolidating appropriate administrative, management, and personnel functions of the historic site and the Badlands National Park.

**SEC. 4. AUTHORIZATION OF APPROPRIATIONS.**

**(a) IN GENERAL.—**There are authorized to be appropriated such sums as are necessary to carry out this Act.

**(b) AIR FORCE FUNDS.—**

**(1) TRANSFER.—**The Secretary of the Air Force shall transfer to the Secretary any funds specifically appropriated to the Air Force in fiscal year 1999 for the maintenance, protection, or preservation of the land or interests in land described in section 3.

**(2) USE OF AIR FORCE FUNDS.—**Funds transferred under paragraph (1) shall be used by the Secretary for establishing, operating, and maintaining the historic site.

PUBLIC LAW 106-115—NOV. 29, 1999

113 STAT. 1543

(c) LEGACY RESOURCE MANAGEMENT PROGRAM.—Nothing in this Act affects the use of any funds available for the Legacy Resource Management Program being carried out by the Air Force that, before the date of enactment of this Act, were directed to be used for resource preservation and treaty compliance.

Approved November 29, 1999.

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**LEGISLATIVE HISTORY—S. 382:**

HOUSE REPORTS: No. 106-391 (Comm. on Resources).

SENATE REPORTS: No. 106-23 (Comm. on Energy and Natural Resources).

CONGRESSIONAL RECORD, Vol. 145 (1999):

Mar. 25, considered and passed Senate.

Nov. 17, considered and passed House.





## APPENDIX B: NPS MANDATES AND POLICIES

As summarized in the “NPS Mandates and Policies” discussion, the alternatives considered in this document incorporate and comply with the provisions of the following mandates and policies as funding and staffing allow. Conditions prescribed by NPS mandates and policies that are particularly important to this document are summarized below. These mandates and policies illustrate

that a general management plan is not needed to decide, for instance, that it is appropriate to protect endangered species, control exotics species, protect archeological sites, provide for handicapped access, and conserve artifacts. Those and other things are already laws, mandates, or policies.

**Cultural Resource Management Requirements**

Current laws and policies require that the following conditions be achieved for historic properties (e.g., buildings, structures, and cultural landscapes) at the site, as well as for

protecting and preserving site collections (museum objects and archive collections) and ethnographic resources.

<b>HISTORIC STRUCTURES</b>	
Current laws and policies require that the following conditions be achieved for historic structures (e.g., buildings, structures, roads, and trails):	
<b>Desired Condition</b>	<b>Source</b>
Historic structures are inventoried and their significance and integrity are evaluated under National Register of Historic Places criteria. The qualities that contribute to the listing or eligibility for listing of historic structures on the national register are protected in accordance with the <i>Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> (unless it is determined through a formal process that disturbance or natural deterioration is unavoidable).	National Historic Preservation Act; Archeological and Historic Preservation Act; the <i>Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> ; <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i> ; Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (1995); NPS <i>Management Policies 2006</i> , DO 28 "Cultural Resource Management Guideline."
<b>Actions</b>	
The National Park Service will take the following kinds of actions to meet legal and policy requirements related to historic structures:	
<ul style="list-style-type: none"> <li>• Determine the appropriate level of preservation for each historic structure formally determined to be eligible for listing or listed on the National Register of Historic Places (subject to the <i>Secretary of the Interior's Standards</i>).</li> <li>• Implement and maintain the appropriate level of preservation for such properties.</li> <li>• Analyze the design elements (e.g., materials, colors, shape, massing, scale, architectural details, and site details) of historic structures at the National Historic Site (e.g., intersections, curbing, signs, and roads and trails) to guide the rehabilitation and maintenance of sites and structures.</li> <li>• Before modifying any historic structure on the National Register of Historic Places, the Park Service will consult with the state historic preservation officer and the Advisory Council for Historic Preservation, as appropriate.</li> <li>• Implement and maintain the appropriate level of preservation for such structures.</li> </ul>	

**CULTURAL LANDSCAPES**

According to the National Park Service’s *Cultural Resource Management Guideline* (DO-28), a cultural landscape is

a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions.

Current laws and policies require that the following conditions be achieved for cultural landscapes.

<b>Desired Condition</b>	<b>Source</b>
<p>Cultural landscape inventories are conducted to identify landscapes potentially eligible for listing in the national register and to assist in future management decisions for landscapes and associated resources, both cultural and natural.</p> <p>The management of cultural landscapes focuses on preserving the landscape’s physical attributes, biotic systems, and use when those uses contribute to its historical significance.</p> <p>Treatments are based on sound preservation practices for the preservation, rehabilitation, restoration, or reconstruction of cultural landscapes is undertaken in accordance with the <i>Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guideline’s for the Treatment of Cultural Landscapes</i>.</p>	<p>National Historic Preservation Act of 1966, as amended (16 USC 470); Advisory Council on Historic Preservation’s implementing regulations regarding the “Protection of Historic Properties” (36 CFR 800); <i>Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes</i> (1996); National Park Service’s <i>Management Policies</i> (2006); National Park Service’s <i>Cultural Resources Management Guideline</i> (DO-28, 1996)</p>

**Actions**

To accomplish the above goals, the National Park Service will do the following:

- Complete a survey, inventory, and evaluation of cultural landscapes under national register criteria.
- Submit the inventory and evaluation results to the state or tribal historic preservation officer for review and comment; forward final nomination form to the Keeper of the national register with recommendations for eligibility to the national register.
- Determine the appropriate level of preservation for each landscape formally determined to be eligible for listing or actually listed on the national register, subject to the *Secretary of the Interior’s Standards*.
- Implement and maintain the appropriate level of preservation for such resources.

<b>MUSEUM COLLECTIONS</b>	
Current laws and policies require that the following conditions be achieved in the park for museum collections:	
<b>Desired Condition</b>	<b>Source</b>
<p>All museum collections (objects, specimens, and manuscript collections) are identified and inventoried, catalogued, documented, preserved, and protected, and provision is made for their access to and use for exhibits, research, and interpretation in consultation with traditionally associated groups.</p> <p>The qualities that contribute to the significance of collections are protected in accordance with established standards.</p>	<p>National Historic Preservation Act; American Religious Freedom Act; Archeological and Historic Preservation Act; Archeological Resources Protection Act; Native American Graves Protection and Repatriation Act; NPS <i>Management Policies 2006</i>, DO 28 "Cultural Resource Management Guideline"; NPS <i>Museum Handbook</i>, Management of Museum Properties Act of 1955 (commonly known as the Museum Act), 16 USC 18f; Historic Sites Act of 1935, 16, USC 461-467</p>
<b>Actions</b>	
The national historic site's museum collections are housed at the Badlands National Park curatorial facility in museum quality conditions. Notable portions of the collections are not catalogued. To accomplish the above goals, the National Park Service will do the following:	
<ul style="list-style-type: none"> <li>• Inventory and catalog all national historic site museum collections in accordance with standards in the NPS <i>Museum Handbook</i>.</li> <li>• Develop and implement a collection management program according to NPS standards to guide the protection, conservation, and use of museum objects.</li> </ul>	

<b>ETHNOGRAPHIC RESOURCES</b>	
<p>Certain contemporary American Indian and other communities are permitted by law, regulation, or policy to pursue customary religious, subsistence, and other cultural uses of NPS resources with which they are traditionally associated. Recognizing that its resource protection mandate affects this human use and cultural context of national historic site resources, the National Park Service plans and executes programs in ways to safeguard cultural and natural resources while reflecting informed concern for contemporary peoples and cultures traditionally associated with them. Consultation with traditionally associated peoples or groups would occur before any NPS proposals are acted upon. Consultations would identify and address any concerns the peoples or groups might have regarding potential impacts on resources in the NPS unit related to a people's or group's cultural heritage or social identity.</p>	
<b>Desired Condition</b>	<b>Source</b>
<p>Appropriate cultural anthropological research is conducted in cooperation with groups associated with the park.</p>	<p>National Historic Preservation Act; Advisory Council for Historic Preservation implementing regulations; NPS <i>Management Policies 2006</i>, DO 28 "Cultural Resource Management Guideline"</p>
<p>To the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, the National Park Service accommodates access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of these sacred sites."</p>	<p>EO 13007 on American Indian Sacred Sites; American Indian Religious Freedom Act</p>
<p>NPS general regulations on access to and use of natural and cultural resources in the national park are applied in an informed and balanced manner that is consistent with national park purposes and does not unreasonably interfere with American Indian use of traditional areas or sacred resources and does not result in the degradation of national park resources.</p>	<p>EO 13007 on American Indian Sacred Sites; NPS <i>Management Policies 2006</i></p>
<p>American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony, and associated funerary objects are consulted when such items may be disturbed or are encountered on park lands.</p> <p>Access to sacred sites and park resources by American Indians continues to be provided when the use is consistent with park purposes and the protection of resources.</p> <p>All ethnographic resources determined eligible for listing or listed on the national register are protected. If disturbance of such resources is unavoidable, formal consultation with the state historic preservation officer and the Advisory Council on Historic Preservation, and with American Indian tribes as appropriate, is conducted.</p>	<p>NPS <i>Management Policies 2006</i>; Native American Graves Protection and Repatriation Act, American Indian Religious Freedom Act</p>

<p>All executive agencies are required to consult, to the greatest extent practicable and to the extent permitted by law, with tribal governments before taking actions that affect federally recognized tribal governments. These consultations are to be open and candid, and confidential as needed, so that all interested parties may evaluate for themselves the potential impact of relevant proposals.</p>	<p>Presidential memorandum of April 29, 1994, on government-to-government relations with tribal governments; National Historic Preservation Act; Advisory Council for Historic Preservation implementing regulations</p>
<p>In addition to the inadvertent discoveries of cultural resource, <i>NPS Management Policies 2006</i> states in part that a park unit's "traditionally associated peoples should be consulted about . . . other proposed NPS actions that may affect the treatment of, use of, and access to park resources with cultural meaning to a group."</p>	<p><i>NPS Management Policies 2006</i></p>
<p><b>Actions</b></p>	
<p>To accomplish the above goals, the National Park Service will do the following:</p>	
<ul style="list-style-type: none"> <li>• Prepare a cultural affiliation study to determine which groups should be consulted for actions at the National Historic Site.</li> <li>• Prepare an ethnographic overview and assessment.</li> <li>• Survey and inventory ethnographic resources and document their significance.</li> <li>• Treat all ethnographic resources as eligible for listing on the National Register of Historic Places pending a formal determination by the National historic site Service and the state historic preservation officer as to their significance.</li> <li>• Conduct regular consultations with affiliated tribes to continue to improve communications and resolve any problems or misunderstandings that occur.</li> <li>• Continue to provide access to sacred sites and national historic site resources by American Indians when the use is consistent with national historic site purposes and the protection of resources.</li> <li>• Provide for access to and use of natural and cultural resources in the national historic site and collections by American Indians that are consistent with national historic site purposes; do not reasonably interfere with American Indian use of traditional areas or sacred resources, and do not degrade national historic site resources.</li> <li>• Protect all ethnographic resources determined eligible for listing or listed on the national register; if disturbance to such resources is unavoidable, conduct formal consultation with associated tribes and the state historic preservation officer, and, as appropriate, the Advisory Council on Historic Preservation, in accordance with the National Historic Preservation Act.</li> <li>• Have tribes identify resources important to Indian tribes during the scoping process, and carefully incorporate this information into the design of all the alternatives so that these resources are protected under any alternative considered.</li> </ul>	

**Natural Resource Management Requirements**

Because the Delta facilities are on ground that has been highly disturbed, other natural resources would be unaffected by actions proposed in this management plan.

<b>AIR QUALITY</b>	
The national historic site is a class II air quality area. Current laws and policies require that the following conditions be achieved in the national historic site.	
<b>Desired Condition</b>	<b>Source</b>
Air quality in the park meets national ambient air quality standards for specified pollutants. The park’s air quality is maintained or enhanced with no significant deterioration.	Clean Air Act, NPS <i>Management Policies 2006</i> ; NPS-77, “Natural Resources Management Guidelines,” NPS Organic Act
Nearly unimpaired views of the landscape both within and outside the park are present. Scenic views are substantially unimpaired.	
<b>Actions</b>	
The National Park Service will take the following kinds of actions to meet legal and policy requirements related to air quality.	
Although the National Park Service has very little direct control over air quality in the air shed encompassing the national historic site, national historic site managers will continue to cooperate with the Department of Environment and Natural Resources and the U.S. Environmental Protection Agency to monitor air quality and ensure that air quality is not impaired.	
<ul style="list-style-type: none"> <li>• Inventory the air quality-related values associated with each park unit.</li> <li>• Monitor and document the condition of air quality and related values.</li> <li>• Evaluate air pollution impacts and identify causes.</li> <li>• Minimize air quality pollution emissions associated with NPS operations, including visitor use activities.</li> <li>• Conduct air quality monitoring in conjunction with other government agencies.</li> <li>• Conduct national historic site operations in compliance with federal, state, and local air quality regulations.</li> <li>• Ensure healthful indoor air quality at NPS facilities.</li> <li>• Participate in federal, regional, and local air pollution control plans and drafting of regulations and review permit applications for major new air pollution sources</li> <li>• Maintain constant dialogue with the Department of Environment and Natural Resources regarding visibility conditions at the national historic site.</li> <li>• Coordinate with the NPS-WASO Air Resources Division on regional air quality issues.</li> <li>• Reduce emissions associated with administrative and recreational uses.</li> <li>• Develop educational programs to inform visitors and regional residents about the threats of air pollution.</li> <li>• Form regional partnerships to develop alternative transportation systems and promote clean fuels.</li> <li>• Participate in research on air quality and effects of air pollution. Determine changes in ecosystem function caused by atmospheric deposition and assess the resistance and resilience of native ecosystems in the face of these external perturbations.</li> <li>• Research effects of atmospheric deposition on plants, soils, and wetlands in the national historic site.</li> </ul>	



<b>NATIVE VEGETATION AND ANIMALS</b>	
Current laws and policies require that the following conditions be achieved in the national historic site.	
<b>Desired Condition</b>	<b>Source</b>
The National Park Service will maintain as parts of the natural ecosystem, all native plants and animals in the national historic site.	NPS <i>Management Policies 2006</i> ; NPS-77 "Natural Resources Management Guideline"
<b>Actions</b>	
The National Park Service will take the following kinds of actions to meet legal and policy requirements related to native wildlife and vegetation:	
<ul style="list-style-type: none"> <li>• Complete inventory of the plants and animals in the national historic site and regularly monitor the distribution and condition of selected species that are indicators of ecosystem condition and diversity.</li> <li>• Develop methods to restore native biological communities.</li> <li>• Minimize human impacts on native plants, animals, populations, communities and ecosystems and the processes that sustain them.</li> <li>• Whenever possible, natural processes will be relied upon to maintain native plant and animal species, and to influence natural fluctuations in populations of these species.</li> <li>• Protect a full range of genetic types (genotypes) of native plant and animals populations in the national historic site by perpetuating natural evolutionary processes and minimizing human interference with evolving genetic diversity.</li> <li>• Nonnative plants will be eradicated.</li> </ul>	

**Visitor Use and Experience**

<b>VISITOR USE AND EXPERIENCE AND NATIONAL HISTORIC SITE USE REQUIREMENTS</b>	
<p>Current laws, regulations, and policies leave considerable room for judgment about the best mix of types and levels of visitor use activities, programs, and facilities. For this reason, most decisions related to visitor experience and use are addressed in the alternatives. However, all visitor use of national park system units must be consistent with the following guidelines.</p>	
<b>Desired Condition</b>	<b>Source</b>
<p>National historic site resources are conserved “unimpaired” for the enjoyment of future generations. Visitors have opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the national historic site. No activities occur that would cause derogation of the values and purposes for which the national historic site has been established.</p>	<p>NPS Organic Act, National Park System General Authorities Act, <i>NPS Management Policies 2006</i>; Title 36 <i>Code of Federal Regulations</i></p>
<p>For all zones, districts, or other logical management divisions within a national park system unit, the types and levels of visitor use are consistent with the desired resource and visitor experience conditions prescribed for those areas consistent with the unit’s purpose.</p>	<p>National Park System General Authorities Act, <i>NPS Management Policies 2006</i></p>
<p>National historic site visitors will have opportunities to understand and appreciate the significance of the national historic site and its resources, and to develop a personal stewardship ethic by directly relating to the resources.</p>	<p><i>NPS Management Policies 2006</i></p>
<p>To the extent feasible, programs, services, and facilities in the national historic site are accessible to and usable by all people, including those with disabilities within an inviting atmosphere accessible to every segment of American society.</p>	<p>Architectural Barriers Act of 1968; Americans with Disabilities Act of 1990; 28CFR36, “Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities” (ADAABAAG); U.S. Access Board Draft Accessibility Guidelines for Outdoor Developed Areas of 1999; <i>NPS Management Policies 2006</i>; DO-42, <i>Accessibility for Visitors with Disabilities in NPS Programs, Facilities, and Services</i>; Rehabilitation Act of 1973; Secretary of the Interior’s regulation 43CFR17, <i>Enforcement on the Basis of Disability in Interior Programs</i>;</p>
<b>Actions</b>	
<p>The National Park Service will take the following kinds of actions to meet legal and policy requirements related to visitor understanding and use of the national historic site:</p>	
<ul style="list-style-type: none"> <li>• National historic site staff will continue to monitor visitor comments on issues such as crowding, encounters with other visitors at busy times of the year, and availability of parking.</li> </ul>	

<b>COMMERCIAL SERVICES</b>	
<p>Commercial services are another way of providing for the visitor use and experience and national historic site use requirements already described. Commercial operators are “partners” with the National Park Service to provide goods and services to visitors that are necessary and appropriate but not provided by NPS personnel. The Park Service manages commercial service levels and types to achieve the same resource protection and visitor experience conditions required by the NPS Organic Act, General Authorities Act, management policies, and other regulations and policies. In addition, commercial services must comply with the provisions of the NPS Concessions Management Improvement Act of 1998. By law, all commercial activities in national park system units must be authorized in writing by the superintendent. A commercial activity is defined as any activity for which compensation is exchanged. It includes activities by for-profit and nonprofit operators. Commercial services are more than just concessions. They include concession contracts, commercial use authorizations, leases, cooperative agreements, rights of way, and special use permits. All commercial services must be managed. All commercial services must be necessary and/or appropriate by achieving the resource protection and visitor use goals for the park unit.</p>	
<b>Desired Condition</b>	<b>Source</b>
Same as Visitor Use and Experience and Park Use Requirements (above)	Same as Visitor Use and Experience and Park Use Requirements
All commercial services must be authorized, must be necessary and/or appropriate, and must be economically feasible. Appropriate planning must be done to support commercial services authorization.	NPS Concessions Management Improvement Act of 1998, NPS <i>Management Policies 2006</i>
<b>Actions</b>	
<p>The National Park Service will take the following kinds of actions to meet legal and policy requirements related to commercial services:</p>	
<ul style="list-style-type: none"> <li>• Establish and document that all commercial services in the national historic site are necessary and/or appropriate before they are proposed or reauthorized.</li> <li>• Ensure that all necessary and/or appropriate commercial activities in the national historic site are authorized in writing by the superintendent.</li> <li>• Stop all unauthorized commercial activities in the national historic site.</li> <li>• Use the most appropriate authorization tool (concession contracts, commercial use authorizations, leases, cooperative agreements, rights of way, and special use permits) to manage the commercial services program effectively and efficiently.</li> <li>• Ensure that all commercial activities in the national historic site provide high-quality visitor experiences while protecting important natural, cultural, and scenic resources.</li> <li>• Ensure that new or modified concessions are economically feasible and that the operator has a reasonable opportunity to make a profit before they are proposed in a planning document.</li> <li>• Establish levels of commercial use that are consistent with resource protection and visitor experience goals for the national historic site and do not unduly interfere with the independent visitor’s ability to participate in the same activity.</li> <li>• Ensure that all commercial services are safe and sustainable.</li> <li>• Authorize only those commercial services that are not or cannot be made available within a reasonable distance outside the national historic site.</li> <li>• Prepare a commercial services plan if necessary to describe in detail the actions required to achieve commercial services and related visitor experience goals.</li> </ul>	

<b>PUBLIC HEALTH AND SAFETY</b>	
<p>NPS <i>Management Policies 2006</i> state that the saving of human life will take precedence over all other management actions as the Park Service strives to protect human life and provide for injury-free visits. Current laws and policies require that the following conditions be achieved in the national historic site:</p>	
<b>Desired Condition</b>	<b>Source</b>
<p>While recognizing that there are limitations on its capability and constraints imposed by the Organic Act to not impair resources, the service and its concessioners, contractors, and cooperators seek to provide a safe and healthful environment for visitors and employees.</p> <p>The national historic site staff strives to identify recognizable threats to safety and health and protect property by applying nationally accepted standards. Consistent with mandates and nonimpairment, the staff reduce or remove known hazards and/or apply appropriate mitigative measures, such as closures, guarding, gating, education, and other actions.</p>	<p>NPS <i>Management Policies 2006</i>, DO-50 and RM-50 "Safety and Health"; DO-58 and RM-58 "Structural Fire Management"; DO-83 and RM-83 "Public Health"; DO-51 and RM-51 "Emergency Medical Services"; DO-30 and RM-30 "Hazard and Solid Waste Management; OSHA 29CFR.</p>
<b>Actions</b>	
<p>The National Park Service will take the following kinds of actions to meet legal and policy requirements related to public health and safety:</p>	
<ul style="list-style-type: none"> <li>• Establish a documented Safety Program in the park to address health and safety concerns and identify appropriate levels of action and activities.</li> <li>• Ensure that all potable water systems and wastewater systems in the national historic site meet state and federal requirements.</li> <li>• Provide for interpretive signs and materials to notify visitors of potential safety concerns, hazards and procedures to help provide for a safe visit to the park and to ensure that visitors are aware of possible risks of certain activities.</li> <li>• Establish a Structural Fire Program and Maintain a Structural Fire Brigade to provide prevention programs and protection of life and property.</li> <li>• Develop an emergency preparedness program to maximize visitor and employee safety and protection of resources and property.</li> <li>• Develop an emergency operations plan including a hazardous spill response plan to plan for and respond to spills.</li> <li>• Provide an emergency medical services program to provide for the care of the ill and injured, including emergency pre-hospital care and the emergency medical transport of sick and injured by hospital from the park's remote setting to medical help.</li> </ul>	

<b>TRANSPORTATION TO THE NATIONAL HISTORIC SITE</b>	
Current laws and policies require that the following conditions be achieved in the national historic site:	
<b>Desired Condition</b>	<b>Source</b>
<p>Visitors have reasonable access to the national historic site, and signs along the interstate adequately direct people to the sites. Transportation facilities in the national historic site provide access for the protection, use, and enjoyment of site resources. They preserve the integrity of the surroundings, respect ecological processes, protect site resources, and provide the highest visual quality and a rewarding visitor experience.</p> <p>The National Park Service participates in all transportation planning forums that may result in links to the national historic site or impact site resources. Working with federal, tribal, state, and local agencies on transportation issues, the National Park Service seeks reasonable access to the national historic site and connections to external and alternative transportation systems.</p>	<p>“NPS Transportation Planning Guidebook,” p.1.</p> <p><i>NPS Management Policies 2006</i></p>
<b>Actions</b>	
The National Park Service will take the following kinds of actions to meet legal and policy requirements related to transportation to and in the national historic site:	
<ul style="list-style-type: none"> <li>• In general, the preferred modes of transportation will be those that contribute to maximum visitor enjoyment of, and minimum adverse impacts to, national historic site resources and values.</li> <li>• The Park Service will work cooperatively with other federal agencies to design and promote alternative transportation systems for national historic site access and circulation. On-site transportation systems should be linked to public transportation whenever feasible, through cooperation with public transportation agencies and gateway communities.</li> <li>• A decision to provide visitor transportation systems will be based on a finding that the system:             <ul style="list-style-type: none"> <li>○ Is a cost-effective alternative to the construction, operation, and maintenance of additional roads, parking areas, and support facilities;</li> <li>○ Will reduce traffic congestion, noise, air pollution, and adverse effects on national historic site resources and values;</li> <li>○ Will enhance the visitor experience by offering new or improved interpretive or recreational opportunities; by simplifying travel within the national historic site; or by making it easier or safer to see national historic site features; and</li> <li>○ Will conserve energy and utilize alternative fueled vehicles whenever practicable.</li> </ul> </li> </ul>	

**National Historic Site Operations and Administration**

<b>SUSTAINABLE DESIGN/DEVELOPMENT</b>	
<p>Sustainability can be described as the result achieved by managing units of the national park system in ways that do not compromise the environment or its capacity to provide for present and future generations. Sustainable practices minimize the short- and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy-efficient and ecologically responsible materials and techniques.</p>	
<b>Desired Condition</b>	<b>Source</b>
<p>NPS and concessioner visitor management facilities are harmonious with national historic site resources, compatible with natural processes, aesthetically pleasing, functional, as accessible as possible to all segments of the population, energy-efficient, and cost-effective.</p>	<p>NPS <i>Management Policies 2006</i>; EO 13123, "Greening the Government through Efficient Energy Management"; EO 13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition"; NPS <i>Guiding Principles of Sustainable Design</i>; DO 13, "Environmental Leadership"; DO 90, "Value Analysis."</p>
<p>All decisions regarding national historic site operations, facilities management, and development in the national historic site — from the initial concept through design and construction — reflect principles of resource conservation. Thus, all national historic site developments and operations are sustainable to the maximum degree possible and practical. New developments and existing facilities are located, built, and modified according to the <i>Guiding Principles of Sustainable Design</i> (NPS 1993) or other similar guidelines.</p>	<p>"Greening Federal Facilities: An Energy, Environmental, and Economic Resource Guide for Federal Facility Managers and Designers," 2<sup>nd</sup> ed.</p>
<p>Management decision-making and activities throughout the national park system should use value analysis, which is mandatory for all Department of the Interior bureaus, to help achieve this goal. Value planning, which may be used interchangeably with value analysis/value engineering/value management, is most often used when value methods are applied on general management or similar planning activities.</p>	<p>Director's Order #90 "Value Analysis"</p>
<b>Actions</b>	
<b>(Sustainable Design Development cont.)</b>	
<p>The NPS <i>Guiding Principles of Sustainable Design</i> (1993b) directs NPS management philosophy. It provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of biodiversity, and encourages responsible decisions. The guidebook articulates principles to be used in the design and management of tourist facilities that emphasize environmental sensitivity in construction, the use of nontoxic materials, resource conservation, recycling, and integrating visitors with natural and cultural settings. Sustainability principles have been developed and are followed for interpretation, natural resources, cultural resources, site design, building design, energy management, water supply, waste prevention, and facility maintenance and operations. The Park Service also reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems emphasizing the use of renewable energy sources.</p> <p>In addition to following these principles, the following also will be accomplished:</p> <ul style="list-style-type: none"> <li>• Have NPS staff work with appropriate experts to make national historic site facilities and programs sustainable. Perform value analysis and value engineering, including life cycle cost analysis, to examine the energy, environmental, and economic implications of proposed developments.</li> <li>• Support and encourage suppliers, permittees, and contractors to follow sustainable practices.</li> <li>• Address sustainable practices within and outside the national historic site in interpretive programs.</li> </ul>	

- Promote the reduction, reuse, and recycling of materials; support the rehabilitation (recycling) of existing buildings and facilities over new construction; require new developments or modifications of existing facilities to be built using NPS sustainability guidelines.
- The national historic site has state-of-the-art water systems for conserving water, and energy conservation technologies and renewable energy sources whenever possible. Biodegradable, nontoxic, and durable materials are used in the national historic site whenever possible. National historic site personnel promote the reduction, use, and recycling of materials and avoid as much as possible materials that are nondurable or environmentally detrimental or that require transportation from great distances.
- Promote and encourage modes of transportation other than the single-occupancy vehicle.
- Promote land use planning for transportation that can efficiently meet human needs and can be responsibly planned to conserve the finite resources.

<b>UTILITIES AND COMMUNICATION FACILITIES</b>	
Current laws and policies require that the following conditions be achieved in the national park:	
<b>Desired Condition</b>	<b>Source</b>
National historic site resources or public enjoyment of the national historic site are not denigrated by nonconforming uses. Telecommunication structures are permitted in the national historic site to the extent that they do not jeopardize the national historic site’s mission and resources. No new nonconforming use or rights-of-way are permitted through the national historic site without specific statutory authority and approval by the director of the National Park Service or his representative, and are permitted only if there is no practicable alternative to such use of NPS lands.	Telecommunications Act; 16 USC 79; 23 USC 317; 36 CFR 14; NPS <i>Management Policies 2006</i> ; DO 53A, “Wireless Telecommunications”; Reference Manual 53, “Special Park Uses.”
<b>Actions</b>	
<p>The Telecommunications Act of 1996 directs all federal agencies to assist in the national goal of achieving a seamless telecommunications system throughout the United States by accommodating requests by telecommunication companies for the use of property, rights-of-way, and easements to the extent allowable under each agency’s mission. The National Park Service is legally obligated to permit telecommunication infrastructure in the parks if such facilities can be structured to avoid interference with national historic site purposes.</p> <ul style="list-style-type: none"> <li>• Locate new or reconstructed utilities and communications infrastructures in association with existing structures and along roadways or other established corridors in developed areas. For reconstruction or extension into undisturbed areas, select routes that will minimize impacts on the national historic site’s natural, cultural, and visual resources.</li> <li>• Place utility lines underground to the maximum extent possible.</li> <li>• Work with service companies, local communities, and the public to locate new utility lines so that there is minimal effect on national historic site resources.</li> <li>• Follow NPS policies in processing applications for commercial telecommunications applications.</li> </ul>	



## Relations with Private and Public Organizations, Owners of Adjacent Land, and Governmental Agencies

<b>RELATIONS WITH PRIVATE AND PUBLIC ORGANIZATIONS, OWNERS OF ADJACENT LAND, AND GOVERNMENTAL AGENCIES</b>	
Current laws and policies require that the following conditions be achieved in the national historic site.	
Desired Condition	Source
<p>The national historic site is managed as part of a greater ecological, social, economic, and cultural system.</p> <p>Good relations are maintained with adjacent landowners, surrounding communities, and private and public groups that affect, and are affected by, the national historic site. The national historic site is managed proactively to resolve external issues and concerns and ensure that park values are not compromised.</p> <p>Because the national historic site is an integral part of larger regional environment, the National Park Service works cooperatively with others to anticipate, avoid, and resolve potential conflicts, protect national historic site resources, and address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, Indian tribes, neighboring landowners, and all other concerned parties.</p>	<p>NPS <i>Management Policies 2006</i></p>
<b>Actions</b>	
The National Park Service will take the following kinds of actions to meet legal and policy requirements related to national historic site neighbors and other agencies:	
<ul style="list-style-type: none"> <li>• Continue to establish and foster partnerships with public and private organizations to achieve the mission and purposes of the national historic site. Partnerships will be sought for resource protection, research, education, and visitor enjoyment.</li> <li>• NPS staff will keep landowners, land managers, local governments, and the general public informed about national historic site management activities. Periodic consultations will occur with landowners and communities affected by national historic site visitors and management actions. The National Park Service will work closely with local, state, and federal agencies and tribal governments whose programs affect or are affected by activities in the national historic site. NPS staff will continue their regular consultations with such entities as the South Dakota state historic preservation office, the Department of Natural Resources, American Indian tribes, Jackson and Pennington Counties, the U.S. Forest Service, the city of Wall, the Jackson and Pennington County sheriff's departments, Ellsworth Air Force Base, and the South Dakota Air and Space Museum.</li> <li>• Continue to establish and foster partnerships with public and private organizations to achieve the purposes and mission of the national historic site. Partnerships will be sought for resource protection, research, education, and visitor enjoyment purposes.</li> <li>• To foster a spirit of cooperation with neighbors and encourage compatible adjacent land uses, national historic site staff will keep landowners, land managers, local governments, and the public informed about national historic site management activities. Periodic consultations will occur with landowners and communities who are affected by, or potentially affected by national historic site visitors and management actions. National historic site staff will respond promptly to conflicts that arise over their activities, visitor access, and proposed activities and developments on adjacent lands that may affect the national historic site.</li> <li>• National historic site managers will seek agreements with landowners to encourage their lands to be managed in a manner compatible with national historic site purposes. National historic site staff also will seek ways to provide landowners with technical and management assistance to address issues of mutual interest.</li> <li>• Work closely with local, state, and federal agencies and tribal governments whose programs affect, or are affected by, activities in the national historic site. The National Park Service will continue to coordinate with local, state, and federal agencies. In particular, national historic site managers will maintain a close working relationship with the U.S. Forest Service, whose lands abut much of the national historic site, to meet mutual management needs. National historic site managers also will pursue cooperative regional planning whenever possible to integrate the national historic site into issues of regional concern.</li> </ul>	

## APPENDIX C: LAWS AND EXECUTIVE ORDERS

### LEGAL CITATIONS

#### NATIONAL PARK SERVICE ENABLING LEGISLATION

Act of June 30, 1864, 13 Stat. 325, 16 U.S.C. §48  
Act of March 1, 1872, 17 Stat. 32, 16 U.S.C. §21 *et seq.*  
Lacey Act of 1900, as amended by P.L. 97-79, 18 U.S.C. §§42-44, Title 50 CFR  
Act of August 25, 1916 (National Park Service Organic Act), P.L. 64-235, 16 U.S.C. §1 *et seq.* as amended  
Act of June 5, 1920, 41 Stat. 917, 16 U.S.C. §6  
Act of February 21, 1925, 43 Stat. 958, (temporary act, not classified)  
Act of May 26, 1930, 16 U.S.C. §17-17j  
Act of March 3, 1933, 47 Stat. 1517  
Parks, Parkways, and Recreational Programs Act, June 23, 1936, 49 Stat. 1894, 16 U.S.C. §§17k-n  
Act of August 8, 1953, 16 U.S.C. §1b-1c  
Act to Improve the Administration of the National Park System, August 18, 1970; P.L. 91-383, 84 Stat. 825, as amended by P.L. 94-458, P.L. 95-250, and P.L. 95-625; 16 U.S.C. § 1a1 *et seq.*  
General Authorities Act, October 7, 1976, P.L. 94-458, 90 Stat. 1939, 16 U.S.C. §1a-1 *et seq.*  
Act amending the Act of October 2, 1968 (commonly called Redwoods Act), March 27, 1978, P.L. 95-250, 92 Stat. 163, 16 U.S.C. §§1a-1, 79a-q  
National Parks and Recreation Act, November 10, 1978, P.L. 95-625, 92 Stat. 3467; 16 U.S.C. §1 *et seq.*  
NPS resources, improve ability to manage, P.L. 101-337, 16 U.S.C. §19jj  
National Parks Omnibus Management Act of 1998, P.L. 105-391, Title IV, National Park Service Concessions Management Improvement Act of 1998

#### OTHER LAWS AFFECTING NATIONAL PARK SERVICE

##### Accessibility

Americans with Disabilities Act, P.L. 101-336, 104 Stat. 327, 42 U.S.C. §12101  
Architectural Barriers Act of 1968, P.L. 90-480, 82 Stat. 718, 42 U.S.C. §4151 *et seq.*  
Rehabilitation Act of 1973, P.L. 93-112, 87 Stat. 357, 29 U.S.C. §701 *et seq.* as amended by the Rehabilitation Act Amendments of 1974, 88 Stat. 1617

##### Cultural Resources

Abandoned Shipwreck Act of 1987, P.L. 100-298, 102 Stat. 432, 42 U.S.C. §2101-6  
American Folklife Preservation Act of 1976, P.L. 94-201, 89 Stat. 1130, 20 U.S.C. §§2101-2107  
American Indian Religious Freedom Act, P.L. 95-341, 92 Stat. 469, 42 U.S.C. §1996  
Antiquities Act of 1906, P.L. 59-209, 34 Stat. 225, 16 U.S.C. §432 and 43 CFR 3  
Archaeological and Historic Preservation Act of 1974, P.L. 93-291, 88 Stat. 174, 16 U.S.C. §469  
Archaeological Resources Protection Act of 1979, P.L. 96-95, 93 Stat. 712, 16 U.S.C. §470aa *et seq.* and 43 CFR 7, subparts A and B, 36 CFR 79  
Executive Order 13007: Indian Sacred Sites, May 24, 1996  
Historic Sites Act, P.L. 74-292, 49 Stat. 666, 16 U.S.C. §§ 461-467 and 36 CFR 65

Historic Preservation Certifications Pursuant to the Tax Reform Act of 1976, the Revenue act of 1978, the Tax Treatment Extension Act of 1980, and the Economic Recovery Tax Act of 1981, 36 CFR 67

Management of Museum Properties Act of 1955, P.L. 84-127, 69 Stat. 242, 16 U.S.C. §18f

National Historic Preservation Act as amended, P.L. 89-665, 80 Stat. 915, 16 U.S.C. §470 *et seq.* and 36 CFR 18, 60, 61, 63, 68, 79, 800

National Trust Act of 1949, P.L. 81-408, 63 Stat. 927, 16 U.S.C. §§468c-e

Native American Grave Protection and Repatriation Act, P.L. 101-601, 104 Stat. 3049, 25 U.S.C. §§3001-3013

Presidential Memorandum of April 29, 1994 “Government-to-Government Relations with Native American Tribal Governments” 59 FR 85

Public Buildings Cooperative Use Act of 1976, P.L. 94-541, 90 Stat. 2505, 42 U.S.C. §4151-4156

Reservoir Salvage Act of 1960, P.L. 86-523, 70 Stat. 220, 16 U.S.C. §§469-469c

Tax Reform Act of 1976, P.L. 94-455, 90 Stat. 1916,

World Heritage Convention, 1980, P.L. 96-515, 94 Stat. 3000

## Natural Resources

Acid Precipitation Act of 1980, P.L. 96-294, 94 Stat. 770, 42 U.S.C. §8901 *et seq.*

Bald and Golden Eagles Protection Act as amended, P.L. Chapter 28, 54 Stat 250, 16 U.S.C. §§668-668d

Clean Air Act as amended, P.L. Chapter 360, 69 Stat. 322, 42 U.S.C. §7401 *et seq.*

Coastal Barrier Resources Act of 1982, P.L. 97-348, 96 Stat. 1653, 16 U.S.C. §3501 *et seq.*

Coastal Zone Management Act of 1972 as amended, P.L. 92-583, 86 Stat. 1280, 16 U.S.C. §1451 *et seq.*

Comprehensive Environmental Response Compensation and Liability Act (commonly referred to as CERCLA or Superfund), P.L. 96-510, 94 Stat.2767, 42 U.S.C. §9601 *et seq.*

Emergency Planning and Community Right-to-Know Act, P.L. 99-499, 100 Stat. 1725, 42 U.S.C. §1101

Endangered Species Act of 1973, as amended, P.L. 93-205, 87 Stat. 884, 16 U.S.C. §1531 *et seq.*

Endangered Species Conservation Act of 1969,

Estuary Protection Act, P.L. 90-454, 82 Stat. 625, 16 U.S.C. §1221

Executive Order 11988: Floodplain Management, 42 FR 26951, 3 C.F.R. 121 (Supp 177)

Executive Order 11990: Protection of Wetlands, 42 FR 26961, 3 C.F.R. 121 (Supp 177)

Executive Order 11991: Protection and Enhancement of Environmental Quality

Farmland Protection Policy Act of 1982, P.L. 97-98

Federal Cave Resources Protection Act of 1988, P.L. 94-377, 102 Stat. 4546, 16 U.S.C. §4301

Federal Advisory Committee Act of 1972, P.L. 92-463, 86 Stat.770

Federal Insecticide, Fungicide, and Rodenticide Act, P.L. 92-516, 86 Stat. 973, 7 U.S.C. §136 *et seq.*

Federal Water Pollution Control Act (commonly referred to as Clean Water Act), P.L. 92-500, 33 U.S.C. §1251 *et seq.* as amended by the Clean Water Act, P.L. 95-217

Fish and Wildlife Coordination Act of 1958 as amended, P.L. 85-624, 72 Stat. 563, 16 U.S.C. §661 *et seq.*

Flood Disaster Protection Act of 1973, P.L. 93-234, 87 Stat. 975, 12 U.S.C. §24, §1709-1

Geothermal Steam Act of 1970, as amended, 84 Stat. 1566, 30 U.S.C. §§1001-1027

Geothermal Steam Act Amendments, P.L. 100-443, 30 U.S.C. §§1001, 1105, 1026, 1027

Manguson Fishery Conservation and Management Act of 1976, P.L. 94-625, 90 Stat. 331m 16 U.S.C. §1801 *et seq.*

Marine Mammal Protection Act, P.L. 92-552, 86 Stat. 1027, 16 U.S.C. §1361 *et seq.*

## APPENDIXES

Marine Protection, Research, and Sanctuaries Act of 1972 (commonly known as Ocean Dumping Act), P.L. 92-532, 86 Stat. 1052, 16 U.S.C. §1361 *et seq.*  
Migratory Bird Conservation Act, P.L. Chapter 257, 45 Stat. 1222, 16 U.S.C. §715 *et seq.*  
Migratory Bird Treaty Act of 1918, P.L. 186, 40 Stat. 755  
National Environmental Policy Act of 1969, P.L. 91-190, 83 Stat. 852, 42 U.S.C. §4321 *et seq.*  
National Flood Insurance Act of 1968, P.L. 90-448, 82 Stat. 572, 42 U.S.C. §4001 *et seq.*, as amended  
National Park System Final Procedures for Implementing E.O. 11988 and 11990 (45 FR 35916 as revised by 47 FR 36718)  
Protection and Enhancement of Environmental Quality, E.O. 11514 as amended, 1970, E.O. 11991, 35 *Federal Register* 4247; 1977, 42 *Federal Register* 26967)  
Resource Conservation and Recovery Act, P.L. 94-580, 30 Stat. 1148, 42 U.S.C. §6901 *et seq.*  
Rivers and Harbors Act of 1899, 33 U.S.C. Chapter 425, as amended by P.L. 97-332, October 15, 1982 and P.L. 97-449, 33 U.S.C. §§401-403  
Safe Drinking Water Act, P.L. 93-523, 88 Stat. 1660, 42 U.S.C. §300f *et seq.*, 42 U.S.C. §201 and 21 U.S.C. §349  
Soil and Water Resources Conservation Act of 1977  
Water Resources Planning Act of 1965 (P.L. 89-80, 42 U.S.C. § 1962 *et seq.*) and Water Resource Council's Principles and Standards, 44 FR 723977  
Watershed Protection and Flood Prevention Act, P.L. 92-419, 68 Stat. 666, 16 U.S.C. §100186

## Other

Administrative Procedures Act, 5 U.S.C. § 551-559, §§701-706  
Aircraft Overflights Study Act of 1987, P.L. 101-91, 101 Stat. 674  
Airport and Airway Development Act of 1970, P.L. 91-258, 84 Stat. 226, 49 U.S.C. § 2208  
Airports In or Near National Parks Act, 64 Stat. 27, 16 U.S.C. §§ 7a-e  
Arizona Desert Wilderness Act (contains NPS boundary study provisions), P.L. 101-628, 16 U.S.C. §§1a-5, 460ddd, 460fff, and many more  
Concessions Policy Act of 1965, P.L. 89-249, 79 Stat. 969, 16 U.S.C. § 20 *et seq.*  
Department of Transportation Act of 1966, P.L. 89-670, 80 Stat. 931, 49 U.S.C. § 303  
Disposal of Materials on Public Lands (Material Act of 1947), 30 U.S.C. §§601-604  
Energy Supply and Environmental Coordination Act of 1974  
Executive Order 11987: Exotic Organisms, 42 FR 26407  
Executive Order 11989 (42 FR 26959) and 11644: Offroad Vehicles on Public Lands  
Executive Order 12003: Energy Policy and Conservation, 3 C.F.R. 134 (Supp. 1977), 42 U.S.C. § 2601  
Executive Order 12008: Federal Compliance with Pollution Control Standards  
Executive Order 12372: Intergovernmental Review of Federal Programs, 47 FR 30959  
Federal Coal Leasing Amendments Act of 1976, P.L. 94-377, 90 Stat. 1083, 30 U.S.C. §201  
Federal Land Policy and Management Act, P.L. 94-579, 90 Stat. 199, 43 U.S.C. §1714 *et seq.*  
Federal Power Act of 1920, P.L. Chapter 285, 41 Stat. 106, 16 U.S.C. §791a *et seq.*  
Federal Water Power Act, P.L. Chapter 285, 41 D 1063, 16 U.S.C. §823a, as amended 16 U.S.C. §797  
Federal Water Project Recreation Act, 79 Stat. 213, P.L. 89-72, 16 U.S.C. §§ 460l-12 to 460l-21  
Forest and Rangeland Renewable Resources Planning Act, P.L. 95-307, 92 Stat. 353, 16 U.S.C. §1600 *et seq.*  
Freedom of Information Act, P.L. 93-502, 5 U.S.C. §552 *et seq.*

Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory, 45 FR 59189, 08/15/80, ES 80-2

Intergovernmental Cooperation Act of 1968, P.L. 90-577, 40 U.S.C. §§ 531-535 and 31 U.S.C. §§6501-6508

Intergovernmental Coordination Act of 1969, 42 U.S.C. §§4101, 4231, 4233

Land and Water Conservation Fund Act of 1965 as amended, P.L. 88-578, 78 Stat. 897, 16 U.S.C. §§460l-4 to 460l-11

Mineral Leasing Act for Acquired Lands of 1947, P.L. Chapter 681, 61 Stat. 681, 30 U.S.C. §351 *et seq.*

Mineral Leasing Act of 1920, 30 U.S.C. §181 *et seq.*, as amended

Mineral Materials Disposal Act of 1947, 30 U.S.C. §601 *et seq.*

Mining Law of 1872, 30 U.S.C. §22 *et seq.*

Mining Activity within National Park Service Areas, P.L. 94-429, 90 Stat. 1342 16 U.S.C. §1901 *et seq.*

National Trails System Act, P.L. 90-543, 82 Stat. 919, 16 U.S.C. §§1241-1251

National Wildlife Refuge System Administration Act, P.L. 93-509, 88 Stat. 1603, 16 U.S.C. §668dd-ee

Noise Control Act of 1972 as amended, P.L. 92-574, 42 U.S.C. §4901 *et seq.*

Outdoor Recreation Coordination Act of 1963, P.L. 88-29, 77 Stat. 49

Outer Continental Shelf Lands Act, P.L. Chapter 345, 67 Stat. 462, 43 U.S.C. §1331 *et seq.* and §1801 *et seq.*

Payment in Lieu of Taxes Act, P.L. 94-565, 90 Stat. 2662, 31 U.S.C. §6901 *et seq.*

Policies on Construction of Family Housing for Government Personnel, OMB A-18

Procedures for Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory, E.S. 80-2, 08/15/80, 45 FR 59191

Revised Statute 2477, Right-of-way across Public Lands, Act of July 26, 1866, 43 U.S.C. §932 (1976), repealed by FLPMA §706(a) October 21, 1976

Strategic Arms Reduction Treaty found at <http://www.fas.org/nuke/control/start2/text/index.html>

Surface Mining Control and Reclamation Act, P.L. 95-87, 91 Stat. 445, 30 U.S.C. § 1201 *et seq.*

Surface Resources Use Act of 1955, 30 U.S.C. §601 *et seq.*

Surface Transportation Assistance Act of 1982, 96 Stat. 2097, 23 U.S.C. §§101 and many others

Toxic Substances Control Act, P.L. 94-469, 90 Stat. 2003, 15 U.S.C. §2601

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, P.L. 91-646, 84 Stat. 1894, 42 U.S.C. §4601 *et seq.*

Urban Park and Recreation Recovery Act of 1978, P.L. 95-625, 92 Stat. 3467, 16 U.S.C. §2501 *et seq.*

Wild and Scenic Rivers Act, P.L. 90-542, 82 Stat. 906, 16 U.S.C. §§1271-1287

Wilderness Act, P.L. 88-577, 78 Stat. 890, 16 U.S.C. §§1131-1136

Wildfire Disaster Recovery Act, P.L. 101-286

Wildlife Suppression Assistance Act, P.L. 101-11, 42 U.S.C. §1856m, 1856

## APPENDIX D: START TREATY

### **The Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms (START)**

#### **TREATY COMPLIANCE REQUIREMENTS**

*as they apply to the transfer of*

#### **D-09 Minuteman II Launch Facility Static Display**

*to the*

#### **National Park Service**

**Treaty Compliance Requirements Notification.** "US Public Law 106-115, the Minuteman Missile National Historic Site Establishment Act of 1999, establishes D-01 Launch Control Facility and D-09 Launch Facility as components of the Minuteman Missile National Historic Site to be administered by the National Park Service. It states the Secretary of the Interior shall consult with the Secretary of Defense and the Secretary of State, as appropriate, to ensure that the administration of the site is in compliance with applicable treaties.

The Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms (START) was signed July 31, 1991 and ratified by the U.S. Senate on October 1, 1992. One hundred forty nine Ellsworth AFB Minuteman II launch facilities (all except D-09 Launch Facility) have been eliminated in accordance with the START Treaty. D-09 Launch Facility has been converted to a static display also in accordance with provisions of the START Treaty.

An Under Secretary of Defense for Acquisition memorandum, dated 10 February 1992, states that any START Accountable Items transferred from the DoD to another U.S Government Agency shall continue to be a START accountable item and to be subject to all relevant START provisions. In this instance, the National Park Service shall maintain a MM II training model of a missile (TMOM) and a MM II silo launcher (D-09), both of which have been converted to static displays in accordance with START Treaty provisions.

The National Park Service shall maintain the MM II TMOM and MM II silo launcher (D-09) in the approved configurations, which rendered them static displays:

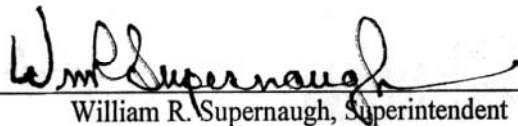
- For the MM II TMOM, this includes: (1) Lower umbilical clamp removed, (2) Guidance and control cable removed, (3) MM II TMOM emplaced in D-09.

- For the MM II silo launcher (D-09), this includes (1) Launcher closure door (LCD) opened approximately one foot past center, (2) LCD wheels welded to track rail, (3) Concrete grout placed in the void between the bottom of the LCD and the top of the launcher, (4) The vertical openings between each side of the tapered LCD and the launcher studded with steel dowels and filled with concrete, (5) Heavily reinforced concrete walled viewing enclosure cast inside the door opening, (6) North edge of concrete viewing enclosure extended over the top of the launch tube opening, (7) Steel railing extended from viewing enclosure to the end of the wing-walls, and (8) open hole covered with a heavy duty aluminum framed glass environmental enclosure.

Any plans to change the above configuration of the static display items must first be reported to and approved by the Air Force. Should the D-09 Launch Facility cease to be maintained as a static display the National Park Service shall return the TMOM static display to the USAF Museum's custody, and shall eliminate the silo in accordance with Section II of the Conversion or Elimination Protocol of the START Treaty. In preparation for silo elimination, the National Park Service will provide an elimination plan based on Section II of the Conversion or Elimination Protocol for Air Force review and approval.

Any transfer of the property must be approved beforehand by the Air Force, and any property transfer documents shall contain an agreement to implement the preceding requirements."

**Acknowledgement of Treaty Requirements.** The National Park Service acknowledges and accepts responsibility for complying with the above treaty compliance requirements as a condition of the transfer of the MMII training model of a missile (TMOM) and a MMII silo launcher (D-09) to the National Park Service.



William R. Supernaugh, Superintendent  
Badlands National Park  
National Park Service

December 7, 2001  
Date

APPENDIX E: LETTER FROM U.S. FISH AND WILDLIFE SERVICE



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services  
420 South Garfield Avenue, Suite 400  
Pierre, South Dakota 57501-5408

October 10, 2002

Patrick Kenney  
National Park Service  
Denver Federal Center  
12795 W. Alameda Parkway  
P.O. Box 25287  
Denver, Colorado 80225-0287

Re: Minuteman Missile National Historic Site  
General Management Plan.

Dear Mr. Kenney:

This letter is in response to your request, received by this office on September 13, 2002, for a list of threatened, endangered, proposed, and candidate species and any critical habitat designations that may occur in the vicinity of the proposed Minuteman Missile National Historic Site in Pennington and Jackson Counties, South Dakota.

Enclosed, please find a county-by-county list of the species as requested. At this time, no critical habitat is proposed or has been designated within the proposed project area. In the future, you may wish to access this information via the Internet. Our office website address is: <http://southdakotafieldoffice.fws.gov/>. There you will find updated county-by-county lists and other pertinent information related to federally listed species of South Dakota. We are currently in the process of adding and updating some existing data on the site, so future visits to the website will reveal the most current information.

If you have any questions regarding this information, please contact Natalie Gates of this office at (605) 224-8693, Extension 25.

Sincerely,

*for* Pete Gober  
Field Supervisor  
South Dakota Field Office



## Federal endangered and threatened species list by county for South Dakota

HYDE	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
JACKSON	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
	MAMMAL	FERRET, BLACK-FOOTED <sup>5</sup>	POSSIBLE	XN
JERAULD	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
	FISH	SHINER, TOPEKA <sup>4</sup>	KNOWN	E
JONES	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
KINGSBURY	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	E
		PLOVER, PIPING	KNOWN	T
	FISH	SHINER, TOPEKA <sup>4</sup>	KNOWN	E
LAKE	BIRD	EAGLE, BALD	KNOWN	T
	FISH	SHINER, TOPEKA <sup>4</sup>	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED <sup>1</sup>	POSSIBLE	T
LAWRENCE	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
LINCOLN	BIRD	EAGLE, BALD	KNOWN	T
	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED <sup>1</sup>	POSSIBLE	T
LYMAN	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
		PLOVER, PIPING	POSSIBLE	T
MARSHALL	BIRD	EAGLE, BALD	KNOWN	T
MCCOOK	BIRD	EAGLE, BALD	KNOWN	T
	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED <sup>1</sup>	POSSIBLE	T
MCPHERSON	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
MEADE	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD <sup>2</sup>	KNOWN	T
		TERN, LEAST	KNOWN	E
MELLETTTE	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
	MAMMAL	FERRET, BLACK-FOOTED <sup>5</sup>	POSSIBLE	XN
MINER	BIRD	EAGLE, BALD	KNOWN	T
	FISH	SHINER, TOPEKA	KNOWN	E

	PLANT	ORCHID, WESTERN PRAIRIE FRINGED <sup>1</sup>	POSSIBLE	T
MINNEHAHA	BIRD	EAGLE, BALD	KNOWN	T
	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED <sup>1</sup>	POSSIBLE	T
MOODY	BIRD	EAGLE, BALD	KNOWN	T
	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED <sup>1</sup>	POSSIBLE	T
PENNINGTON	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
		TERN, LEAST	KNOWN	E
	MAMMAL	FERRET, BLACK-FOOTED <sup>5</sup>	KNOWN	XN
PERKINS	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
POTTER	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E
ROBERTS	BIRD	EAGLE, BALD <sup>2</sup>	KNOWN	T
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED <sup>1</sup>	POSSIBLE	T
SANBORN	BIRD	EAGLE, BALD <sup>2</sup>	KNOWN	T
	FISH	SHINER, TOPEKA	KNOWN	E
SHANNON	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
	MAMMAL	FERRET, BLACK-FOOTED <sup>5</sup>	KNOWN	XN
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED <sup>1</sup>	POSSIBLE	T
SPINK	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD <sup>2</sup>	KNOWN	T
	FISH	SHINER, TOPEKA <sup>4</sup>	POSSIBLE	E
STANLEY	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E
SULLY	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T

<sup>5</sup> Block clearance is a strategy developed by the Service to determine the likelihood of black-footed ferret occurrence in a geographic area and provide sufficient information to allow the Service to assess an area for the biological potential for contributing to recovery of the ferret. The act of block clearing an area negates the need to conduct future ferret surveys to comply with section 7 of the Endangered Species Act. The exception is for National Park Service lands and US Fish and Wildlife Service lands - ferrets are considered threatened in those areas. Black-footed ferrets have been reintroduced in Badlands National Park, Buffalo Gap National Grasslands and Cheyenne River Sioux Tribe Reservation.

## APPENDIX F: SELECTING THE PREFERRED ALTERNATIVE AND VISITOR FACILITY AND ADMINISTRATIVE SITE

The legislation creating the national historic site instructed the Secretary of Interior to include “an evaluation of appropriate locations for a visitor facility and administrative site within the areas depicted . . . .” Two areas were depicted by Congress: alternative A just north of South Dakota I-90 exit 131 interchange, and alternative B just south of the I-90 exit 127 interchange. At that time, the U.S. Forest Service, Buffalo Gap National Grasslands, would transfer up to 40 acres (currently this has been reduced to up to 25 acres) to the National Park Service for use as a facility at either location. Legislation would be required to transfer the property and adjust the national historic site boundary. Part of this plan includes a boundary adjustment to incorporate any transferred lands into the national historic site.

The general management plan process began in 2001 with a “Notice of Intent to Prepare a Draft General Management Plan/Environmental Impact Statement” in the *Federal Register*, and with selection of a planning group led by the Denver Service Center. Phase I of the planning process included public scoping meetings that same year.

Phase II included formulation of general management plan alternatives, development of a newsletter outlining the four general management plan alternatives, and collection of public input on the alternatives through mailings and two meetings. Additionally, the March 2002 newsletter asked the public which location would best provide for the park and why. Public meetings were held March 12, 2002, in the city of Wall, and March 13 in Rapid City. The end of the public comment period was on April 30, 2002. Appendix I provides excerpts of the written and verbal comments received concerning the visitor center. During the week of May 6-9, 2002, the planning team reconvened for a Choosing by Advantages (CBA) workshop. By analyzing information, comments and ideas, the CBA workshop had two goals: to select a preferred alternative from the four draft general management plan alternatives and to select a preferred location for the visitor facility and administrative site.

To select a preferred location for the visitor facility and administrative site, the CBA workshop analyzed the advantages of exits 131 and 127 based on 10 criteria (or factors) along with a cost ratio comparison. The evaluation factors included:

- Factor 1: A facility at which exit would best protect and preserve Cold War era buildings and structures?
- Factor 2: A facility at which exit would best preserve the cultural landscape and viewshed?
- Factor 3: A facility at which exit would best protect and preserve museum collections?
- Factor 4: A facility at which exit would receive the highest visitation?
- Factor 5: A facility at which exit would best improve administration and operational efficiency?
- Factor 6: A facility at which exit would create the least disturbance to the cultural and natural resources?
- Factor 7: A facility at which exit would best provide for visitors and employees safety?
- Factor 8: Which location would provide the highest level of visitor convenience?
- Factor 9: Which location would provide the highest opportunity for visitor outreach?
- Factor 10: Which location would provide the best visitor experience?

By synthesizing available input and information on hand at the time, the planning team selected exit 127 as the preferred location. Lacking complete information, however, the location was not finalized in order to continue collecting additional data. One significant additional study was the “Alternative Transportation Study,” which was completed in 2003.

By October 2003, official operations at the national historic site started with the opening of a planning project office and the appointment of a superintendent and staff. For the past two years the staff has conducted regular tours of the Delta facilities and continued the data gathering process. In addition, consultation and cooperation with state and federal agencies has been ongoing. Considering comments from state agencies as well as the new data collected over the past two years by site staff, the National Park Service reassessed the location of the visitor facility and administration site. In early 2005 site staff presented the new information to NPS planners and regional managers who evaluated and validated the new findings. In August 2005 the National Park Service determined that the *Draft General Management Plan/Environmental Impact Statement* would show exit 131 as the preferred location for the visitor facility and administrative site.

## APPENDIX G: STAFFING ESTIMATES

<i><b>POSITION</b></i>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
	FTE Employees	FTE Employees	FTE Employees
Superintendent	1	1	1
Administrative Support Assistant	1	1	1
Clerk Seasonal		0.5	0.5
Supervisory Facility Operations Specialist		1	1
Maintenance Mechanic	1	2	1
Custodian		2	2
Custodian Seasonal	0.5	0.5	1
Chief, Visitor and Resource Protection and Interpretation & Visitor Services	1	1	1
Park Ranger, Visitor and Resource Protection		1	2
Park Ranger, Visitor and Resource Protection, Seasonal 50-50 with Badlands NP	0.25	0.25	0.25
Park Ranger Interpretation and Visitor Services	1	1	1
Park Guide		2	2
Park Guide Seasonal	1	3	3
Visitor Use Assistant Seasonal		1	1.5
Cultural Resource Specialist/Curator	1	1	1
Museum Tech (50-50 with Badlands National Park)		0.5	0.5
<b>Total Number of FTE Employees</b>	<b>7.75</b>	<b>18.75</b>	<b>19.75</b>
<b>Total Costs</b>	<b>467,267</b>	<b>954,787</b>	<b>991,549</b>

Alternative 4		
POSITION	FTE EMPLOYEES	PHASING AND COSTS
Superintendent	1	Phase 1
Administrative Support Assistant	1	Phase 1
Supervisory Facility Operations Specialist	1	Phase 1
Maintenance Mechanic	1	Phase 3
Custodian	1	Phase 3
Custodian Seasonal	0.5	Phase 1
Chief, Visitor and Resource Protection and Interpretation and Visitor Services	1	Phase 1
Park Ranger, Visitor and Resource Protection	1	Phase 1 Phase 4
Park Ranger, Visitor and Resource Protection, Seasonal 50-50 with Badlands NP	0.25	Phase 1
Park Ranger, Interpretation and Visitor Services	1	Phase 1
Park Guide	1	Phase 2
Park Guide Seasonal	1 (2 seasonal employees) 2 (4 seasonal employees )	Phase 1 Phase 2
Cultural Resource Specialist/Curator	1	Phase 1
<b>TOTALS</b>	<b>14.75</b>	<b>\$819,015</b>

Finalizing the general management plan does not guarantee that funding to implement a particular alternative will be forthcoming. Base funding, for example, may not be immediately available for the proposed staffing increases. If this is the case, staffing increases and the actions these additional employees would accomplish will have to be phased in as future funding becomes available.

Current staff totals 7.75 full-time-equivalent (FTE) employees as outlined in alternative 1. The national historic site's current base funding covers costs for permanent employees and discretionary costs for temporary employees. Base cost projections show enough discretionary funding in the current budget for one additional permanent employee and up to two additional temporary employees, i.e., two FTE employees.

Implementation of all the actions and increased staffing proposed in alternative 2, 3, or 4 are not possible with current funding. Current staffing levels would be adequate to operate the proposed visitor center. Operations and visitors services for the proposed visitor center could be managed within the current budget and staffing. Therefore, phasing-in construction of just the visitor center and the staff positions to cover its operations would go hand-in-hand.

Through core operations analysis, essential staffing will be identified. As increases in base funding become available, more actions such as operating more tours per day would be implemented. If base funding does not become available, those additional actions and core staffing increases will be postponed. The national historic site currently has submitted

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four base funding requests. The requests cover resource protection, visitor services, and facility operations and maintenance to

implement phases 2 through 4 to implement the preferred alternative.



**APPENDIX H: CHANGES THAT HAVE OCCURRED DURING  
DEACTIVATION AND MOTHBALLING (1991-2003)**

<b>Before July 1991</b>	<b>July 1991–2003</b>
<b>DELTA ONE</b>	
Exterior	
Continue Air Force presence.	Small security panel was added inside main gate
Gas pump and tank fill and vent pipe were in place.	Were removed with the tank and were placed on site for safe keeping
Few weeds were on the horseshoe pit and volleyball court.	These areas are overgrown with weeds now.
	An aboveground propane tank and line were added.
	New conduits were added for security system on the exterior.
	The sewage lagoons dried up.
	The flagpole was broken and placed in the garage.
	Two guardrails were added to the capsule access area in 2004 to provide extra safety for the public.
Interior	
	The security and fire suppression systems (water system) were modified.
	One underground storage tank was removed; one was closed in place.
	At the security control center, the weapons, typewriter, code books, and computer were removed.
	The 1992 ISST satellite communication system (green box and radome in back) was added.
	At the tunnel junction, cleaning supplies were removed from the upstairs locations.
	In the kitchen, foil pack meals are missing.
	The following repairs need to be made: the environmental room needs painting, the dry wall and ceiling in the diesel room need repairing, and the hole in the shower floor of the women's restroom needs repairing.
<b>DELTA NINE</b>	
Exterior	
Grounds were sterile	Grass has grown.
Periodic Air Force presence	No Air Force presence.
	Viewing enclosure was added.
	Small security panel was added inside the gate.
	Security and fire detection systems were added in underground launch facility support building and launcher.

## APPENDIX I: COMMENTS FROM NEWSLETTER AND MEETINGS

The following are excerpted from the comments received from the newsletter at public meetings related to the visitor / administrative facility.

### Verbal Comments Received At Public Meetings

- A visitor center at exit 131 would get more visitors and could serve Minuteman Missile NHS and Badlands NP.
- A visitor center at exit 131 is better.
- Put visitor center at exit 127 because it is closer to Delta One. Visitors are less likely to stop if visitor center is as far away as exit 131.
- Visitor center should be near Delta One — within walking distance.
- Place the visitor center at exit 127 — folks won't stop more than twice.
- Visitor center at exit 131 makes the most sense.
- Don't care about visitor center placement, just want the story told accurately.
- Visitor center should be located close to the launch control facility — would require less staff, could share parking lot, and people could walk to the site.
- If the Mt. Rushmore visitor center were located at Keystone, how well would that work? Place visitor center at exit 127.
- Exit 127 visitor center location would detract from Badlands NP traffic. Exit 131 would accommodate both Badlands NP and Minuteman Missile NHS traffic. No competition between parks.
- Visitor center should be at exit 131 because it would be highly visible to east-west traffic on Interstate 90. Traffic would bypass visitor center if located at exit 127 because they would not see it.
- Exit 131 is the best location for the visitor center because most visitors will tour the badlands and completely miss Minuteman Missile site.
- Exit 127 visitor center would miss a lot of people who would turn to go to Badlands at Exit 131.
- Exit 131 captures the most traffic
- Visitor center at exit 131 to pick up Badlands traffic (on east side of Cottonwood Road).
- Visitor center at exit 127 would give a better experience (near site)
- Put the visitor center at Badlands NP Cedar Pass. Visitors who want to see Minuteman will take shuttle from Badlands NP.
- Visitor center at exit 127 should be on higher ground to the west (SW corner).
- Exit 127 visitor center has advantage of proximity to Delta-01 and less visitation (congestion).
- Place visitor center at exit 127 just northwest of off-ramp and run train to Delta One.
- You will have more visitors if visitor center located at exit 131. This allows opportunity to visit both parks (Badlands NP and Minuteman Missile NHS).
- Visitor center at exit 127: quality vs. quantity experience.
- 

### Newsletter Comments

- . . . the exit #131 of interstate 90 will provide the greatest public exposure and use. This will also afford the traveling public the greatest number of options.
- Near the LCF.
- Exit 131. Keep LCF isolated — preserved the way it always looked from interstate.
- Should be exit 127 because that site is less likely to be developed and thus will maintain the sense of remote isolation experienced by the crews. It also provides more direct access to the two sites, thus limiting the amount of travel time involved in tours.
- . . . locate at exit 131. We feel that it would attract more visitors at this location.
- . . . locate at Delta One. It should be built adjacent to the security fence next to the access gate where the above ground vehicle storage fuel tank is. . . .

- Exit 131!! This is the only location that makes sense for visitors and the local economy.
- . . . locate at Exit 127. Why because it is about ½ way between Delta One and Delta Nine.
- Visitor center should be as close to the facilities as possible. The center should be within walking distance to the launcher facility and the launch control facility.
- The visitor center/administrative facility should be placed at LCF Delta One using exit 127 to gain access to the site.
- At exit 127 near Delta One — so the visitors would not have to exit the interstate many times to visit everything.
- The visitor center should be . . . at exit 131 – this would provide the best use of resources . . .
- Exit 127. You do not really need a visitor center if you go with Alternative #3 because you have an education and learning facility at the LCF and LF.
- Visitor centers or other official locations should have a presence in the nearest town to Delta One . . . many military personnel would have stopped in the town nearest Delta One (and in the direction of Rapid City) for a meal or snack.
- As near the Delta Nine and Delta One as possible.
- Near Delta 1 since guided tours can only be logically conducted at Delta One. . . .
- Exit 127.
- Exit 127, adjacent to the Delta One LCF. . . .
- Across the road from Delta One in the USFS grassland. . . .
- At the LCF, top side control center.
- Visitor center location at or adjacent to the Delta One location.
- Exit 127 as close to Delta One as possible.
- . . . at Exit 131. . . . it could also bring more visitors into the Badlands area.
- Delta One. Visitors would get first hand feel of what “going on alert duty” was like. . . .
- Delta One. This would be the logical place to begin a tour . . .
- At the start of the gravel entry road.
- . . . locate outside Delta One to prepare visitors for the tour . . . most convenient for west bound traffic on I-90.
- Exit 131 – . . . allows visitors to see the facility and the way the sites were blended-in in a non-intrusive manner. . . .
- . . . exit 127 simply because it is very close to Delta One.
- Exit closest to Delta One and near the site.
- . . . exit 127 . . . given its close proximity to Delta One.
- . . . just outside the gate at the Delta LCF . . . access to I-90 . . . convenient to the LCF.
- Exit 127 or near and or at Delta One. People won’t want to get off at exit 131 and then again at exit 127 and exit 116.
- . . . as near to the highway as possible.
- Nearest to Delta One exit on I90.
- Should be at exit 131 to give the visitor a choice of routes when leaving the center.
- Exit 127. The MIMI site [national historic site] needs to stand alone . . . to convey the feeling of what it was like to be stationed in S.D. . . . entrance to Badlands will lessen the impact and story.
- Exit 131 serves more traffic and it would benefit many businesses to have the visitor center’s location there.
- Having the visitor center close by further enhances their experience . . .
- Exit 127 . . . closest to Delta One . . . closer to Delta Nine by 4 miles . . .
- On site. . . .
- Exit 127 . . . better location for interpretation of MMII
- Exit 127 . . .
- D-01: there are more viewable facilities there, including the capsule . . .
- Center should be located at both facilities
- The closest exit to Delta One . . . more interest on the part of the public . . .
- At exit 127. . . for an overview of the entire system . . .

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- Exit 127 – . . . as close to Delta One as possible . . .
- The Cactus Flat location probably makes the most sense because of its proximity to the Badlands road
- Exit 127 would be appropriate . . . close distance to LCF.
- Exit 131 . . . would capitalize on – and increase – traffic exiting at 131, to the benefit of all.
- . . . close to Delta One, at exit 127 . . .

One member of the public submitted an extensive list of reasons why exit 131 should be selected. Their comments are summarized here.

Exit 131: received the most public support in every survey that has been done; help the economies of communities; attract Badlands NP visitors to Minuteman Missile NHS; existing businesses would complement a visitor center; valuable in promoting and informing the traveling public of all the attractions; visitors would not have to back track to visit Badlands NP; [development] will not intrude on the original integrity of the site; centrally located between Delta One and Badlands NP; already equipped with all utilities; South Dakota Department of Transportation has endorsed.

One member of the public submitted an extensive list of reasons why exit 127 should be selected. Those comments are summarized here.

Exit 127: only visitors interested in the Minuteman story would stop; would not be a place to let the kids out of the car and buy pop and bag of chips; less money and effort would be spent on visitor services and more left for interpretation; atmosphere would be more conducive to a historic site of such significance; would tend to improve security [Delta One visible]; for those unable to take the tour, being able to view the site from across the highway will provide some sense of relativity; eliminate driving shuttle buses down a 75 mph interstate highway; significant operational savings potential; visitor center would be in the same semi-remote environment as Delta One; possibly more flexibility and options to change interpretive/transportation modes to meet unanticipated conditions and visitor requirements.

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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 historical 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.

