



**National Park Service
U.S. Department of the Interior
Mount Rushmore National Memorial
Keystone, South Dakota**

Yellow Wolf Loop Trail

Environmental Assessment

December 2008





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Executive Summary

The National Park Service (NPS) and Mount Rushmore National Memorial (Memorial) are proposing to construct and operate a backcountry trail system to assist in meeting the Memorial's Centennial Vision, in which it seeks to become a center of excellence for sharing the story of America, for providing visitor opportunities and for protecting resources and people.

An Environmental Assessment is being prepared to examine the affected environment in the Memorial and to study a range of alternatives and its impact. The range of alternatives includes:

- No Action
- Single Loop Trail
- Multi-Loop Trail

The Multi-Loop Trail is the preferred alternative, meeting the goals and objectives of the Memorial. The Multi-Loop Trail would be 9.8 miles in length, comprised of connector trails, 5 smaller loops of varying difficulty and have 5 scenic vistas. The preferred alternative would be built in five phases. Many federal, tribal, state and local agencies, as well as other private partners, would be consulted in the development, construction and operation of the trail system.

Public Comment

The National Park Service Planning, Environment and Public Comment (PEPC) site provides access to current plans, environmental impact analyses, and related documents on public review. Users of the site can submit comments for documents available for public review. If you wish to comment on the Environmental Assessment, you may post comments online at <http://parkplanning.nps.gov/publicHome.cfm> or mail comments to:

Superintendent Gerard Baker
Mount Rushmore National Memorial
Building 31, Suite 1 13000 Highway 244
Keystone, SD 57751

This Environmental Assessment will be on public review for 30 days. 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. While 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.



1.0 PURPOSE AND NEED

1.1 Introduction

This Environmental Assessment examines the environmental impacts associated with the proposal to construct a backcountry trail system at Mount Rushmore National Memorial (Memorial), in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 CFR 1500 - 1508), and the National Park Service (NPS) Director's Order (DO)-12 (Conservation Planning, Environmental Impact Analysis, and Decision-making).

The Memorial proposes to add a backcountry trail system by 2016, which improves opportunities for visitors to discover the diversity of the park's ecosystem and cultural resources. The trail would total approximately 10 miles in length, highlighting the natural resources and history of the cultural resources and history of Mount Rushmore and the central Black Hills area. Significant features would include the "old growth" ponderosa pine forest, the wide variety of flora and fauna, the unique geology, and the storied cultural history of the area. This proposed trail system would provide new opportunities for education, interpretation and recreation (NPS 2007).

The 1,278-acre Memorial is located in the central Black Hills in southwestern South Dakota. Mount Rushmore is a symbol for freedom and democracy and a special place for all people and cultures. The park hosts approximately 3 million visitors per year. The majority of visitation is for purposes of seeing the carved mountain and associated visitor facilities. A small amount of rock climbing, nature observation, and hiking currently occurs within the park. Some horse riding occurs on the Blackberry Trail which connects to the Centennial Trail System within the Black Hills National Forest. Most of the land surrounding the park is administered by the Black Hills National Forest. The Black Elk Wilderness Area lies immediately south of the Memorial. The town of Keystone is located on the east boundary of the park. The project is located in Pennington County, Township 2 South, Range 5 East and Township 2 South, Range 4 East, Black Hills Meridian, South Dakota. See Figure 1 for the boundaries of the Memorial and surrounding land use.

1.2 Need for the Proposal

The proposed project is part of the Centennial Vision for Mount Rushmore, which seeks to become a center of excellence for sharing the story of America, for providing visitor opportunities, and for protecting resources and people (NPS 2007). In order to achieve its vision, the Memorial received funding from the National Park Service Centennial Challenge Matching Fund for the proposed trail system. Partners, including the Mount Rushmore National Memorial Society, have committed matching funds for the backcountry trail. Other partners include the Lakota Nation who will assist in telling the cultural history of the Black Hills and Mount Rushmore, State of South Dakota and the United States Forest Service.

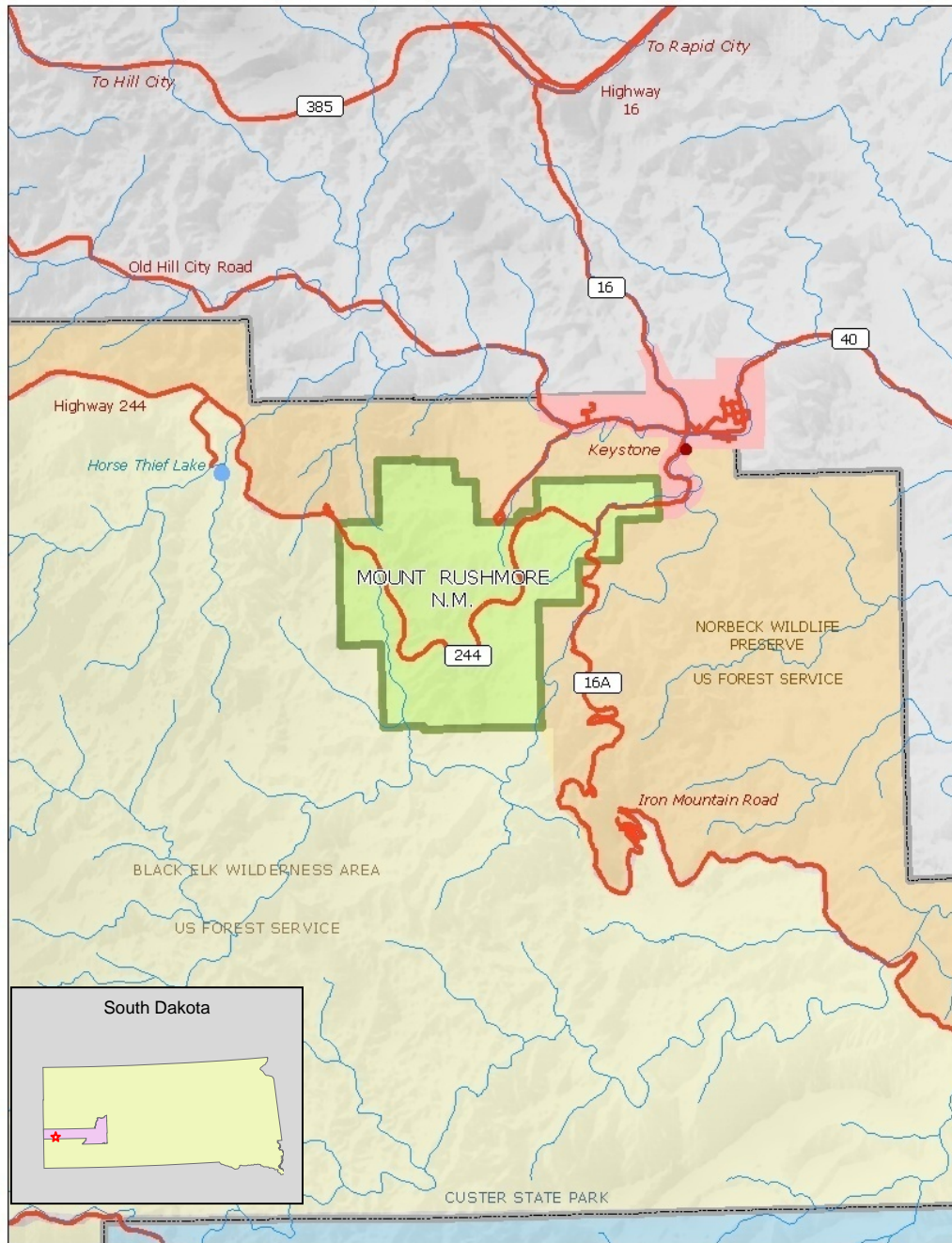


Figure 1. Mount Rushmore National Memorial and surround land use (NPS)



1.3 Objectives of the Proposal

The Memorial proposes to add a backcountry trail system which improves the visitor experience by providing opportunities for:

- Appreciation of the cultural and natural resources
- Potential guided and self-guided tours
- Educational and research opportunities
- Beneficial outdoor leisure activities
- Appreciation for environmental stewardship
- Multi-generational and multi-cultural experiences
- Opportunities to further develop partnerships

1.4 Scope of the Environmental Analysis

Scoping is a process to identify the resources that may be affected by a project proposal, and to explore possible alternative ways of achieving the proposal while minimizing adverse impacts. The Memorial conducted both internal scoping with appropriate National Park Service staff and other state and federal agencies, and external scoping with the public and interested/affected groups and agencies.

This section addresses the history of the planning and scoping process, relevant documents and issues to be addressed.

1.4.1 History of the Planning and Scoping Process

Internal scoping was conducted by an interdisciplinary team of professionals from Mount Rushmore National Memorial, the National Park Service, Black Hills National Forest, and South Dakota Game Fish and Parks. Interdisciplinary team members attended an Alternative Generation Workshop April 12-14, 2008 to discuss the purpose and need for the project; generate alternatives; describe potential environmental impacts, including direct, indirect and cumulative and develop possible mitigation measures. As part of the Alternative Generation Workshop, three public open houses (two in Rapid City, SD and one on the Pine Ridge Reservation) were held to inform the public of the proposed project and to receive input on the project. Several articles were published in the Rapid City Journal regarding the public meetings and the purpose of the project.

External scoping was initiated with the distribution of a scoping letter to federal, state and tribal governments to inform them of the proposal to construct a new loop trail system at the Memorial and to generate input on the preparation of this Environmental Assessment. The scoping letter dated April 2008 was mailed to over 14 agencies and 34 affiliated Tribes. Scoping information was also posted on the NPS Planning, Environment and Public Comment (PEPC) site.

1.4.2 Relevant NPS Guidance Documents

Current plans and policy that pertain to this proposal include the Organic Act (1916), the 2006 National Park Service Management Policies (NPS 2006), Backcountry Recreation Management (Reference Manual #77), Mount Rushmore National Memorial General Management Plan (NPS 1980), and the Draft Long Range Interpretive Plan (MRNM 2007).



Following is more information pertaining to how this proposal meets the goals and objectives of these plans and policies:

The Organic Act of 1916 established the National Park Service (NPS) and its mission “to conserve the scenery and the natural and historic objects and the wild life 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 NPS Management Policies (NPS 2006) is the basic Service-wide policy document of the NPS and is the highest of three levels of guidance documents in the NPS Directives System. According to *2006 Management Policies*, the enjoyment of park resources and values by people is part of the fundamental purpose of all park units. The NPS is committed to providing appropriate, high quality opportunities for visitors to enjoy the parks, and will maintain within the parks an atmosphere that is open, inviting, and accessible to every segment of society. Further, the NPS will provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the parks. The *Management Policies* also state that scenic views and visual resources are considered highly valued associated characteristics that the National Park Service should strive to protect.

Backcountry use as defined in the Management Policies, refers to primitive, undeveloped portions of parks. This is not a specific management zone, but rather refers to a general condition of land that may occur anywhere within a park. Backcountry use will be managed in accordance with a backcountry management plan (or other plan addressing backcountry uses) designed to avoid unacceptable impacts on park resources or adverse effects on the visitor enjoyment of appropriate recreational experiences. The Service will seek to identify acceptable limits of impacts, monitor backcountry use levels and resource conditions, and take prompt corrective action when unacceptable impacts occur. Strategies designed to guide the preservation, management, and use of the backcountry and to achieve the park’s management objectives will be integrated into the park’s backcountry management plan.

The Mount Rushmore National Memorial General Management Plan (1980) is a park-wide plan for meeting the management objectives of the park and contains short term and long range strategies for resource management, visitor use and development. Management objective include managing the geological features and vegetative cover of the Memorial and adjacent environs to maintain the historical integrity and natural setting. The forest will be maintained to provide a natural setting for the Memorial.

1.4.3 Issues to be Addressed

Developments within backcountry areas are generally limited to trails, unpaved roads, and administrative facilities associated with dispersed recreational use. Dispersed recreational use is the most prevalent human use in backcountry areas, although research may also occur. During the workshops and public open houses, five key issues were identified as needing to be addressed when planning for the backcountry trail system.

Issue 1. Erosion of Trails near Water Resources

There are three main drainages within the boundaries of the Memorial: Lafferty Gulch, Starling Basin and Grizzly Gulch, all containing several small streams and ponds. These drainages contribute greatly to the diversity of the Memorial, especially in regards to flora richness. Protection of these water resources is a key issue as it relates to erosion from runoff, stream crossings and wetlands on the existing trail system as well as any new trails construction. The existing Blackberry Trail is severely eroded from historic horse traffic and the steep and rocky nature of part of the trail.



Sections of the Blackberry trail will need switchbacks or engineered structures (log bars, rock checks, and foot bridges for water crossings) to control erosion.

Issue 2. Disturbance to the Ecological and Wildlife Resources

The backcountry area proposed for the trail loop around Mount Rushmore is a unique and valuable resource. Protecting the integrity of the Starling Basin (i.e., the wetland and the old growth ponderosa pine) is a priority for Memorial staff. Its ecological significance has been noted by numerous ecologists.

The backcountry areas provide a diverse and abundant habitat for many species of mammals, invertebrates, reptiles, amphibians, plants, and birds. The granite outcrops of Mount Rushmore provide habitat for white-throated swifts, canyon wrens, and violet-green swallows (Panjabi 2005).

Based on the ecological richness of the area, traditional plant harvesting occurs at the Memorial. Overuse of the area and non-permitted harvesting are a concern. Excessive tramping is a concern for sensitive species (violets) as well as introduction of exotic species. Excessive “off trail” use may increase exotic species and disturb wildlife and their habitat. Vandalism is another concern to the old growth forest (i.e. carving initials, illegal cuttings).

Issue 3. Accessing the Trail System

There are three existing trails within the Memorial boundaries as well as several social/informal trails. Development of a backcountry trail system within the Memorial boundaries raises several access/design issues concerning the number, location, distances and materials used for the trails; trail head amenities (parking areas, restroom facilities, signage, and pedestrian crossings); type of user (hiking, horse, biking, ADA accessibility) and maintenance (trail and trailheads), and emergency access for NPS Staff.

Issue 4. Securing the Memorial and Providing for Personal Safety

The majority of visitors come to the Memorial for the purpose of seeing the granite carvings of the Presidents and the associated visitor facilities. A small amount of hiking or non-consumptive tourism currently exists. The area around the base of Mount Rushmore and the surrounding area is “off limits” to all public access (NPS, 2008). Climbing of Mount Rushmore is prohibited. NPS law enforcement rangers are responsible for patrolling the Memorial property, including the existing backcountry areas, which is the area for the proposed trail project. With construction of a new trail system and increased trailhead access, security of the mountain carving is a primary issue followed by personal safety issues (getting lost, injury from hiking and rock climbing).

Issue 5. Protecting Cultural Resources

The primary concern during design and development of the proposed trail system is to minimize the loss or degradation of culturally significant material. A primary responsibility of the NPS is to identify, protect and share the cultural resources under its jurisdiction.

NPS identifies cultural resources types as follows:

- Archeological resources – remains of past human activity and records documenting the scientific analysis of the remains
- Cultural landscapes – setting we have created in the natural world that reveal fundamental ties between people and the land-ties based on our need to grow food, form settlements, and meet requirements for recreation
- Structures – material assemblies that extend the limits of human capability



- Museum objects – manifestations and records of behavior and ideas that span the breadth of human experience and depth of natural history
- Ethnographic resources – basic expressions of human cultural and the basis of continuity of cultural systems (tangible and intangible)

1.5 Decision to be Made

The decisions to be made at the conclusion of the Environmental Assessment will answer the following questions:

How long will the backcountry trail be?
How will the trail be accessed?
What modes of transportation will be allowed?
How could this project be phased to meet budget constraints?

1.6 Applicable Regulatory Requirements

The following regulatory requirements may be applicable to the proposed trail system:

NPS Superintendent's Compendium – In addition to the requirements contained in 36 CFR, Chapter 1, Parts 1 – 7, additional regulatory provisions (Superintendent's Compendium) apply, unless otherwise stated. This compendium contains area designations for special use or activities, closures, permit requirements and other restrictions imposed under discretionary authority,

NPS Director's Order #42 – Accessibility for Visitors with Disabilities in NPS programs and Services

Authority for this directive is found in the NPS Organic Act. There are several Federal laws that require the NPS to make programs, facilities and services accessible; Department of Interior regulations that outline how those laws should be implemented and Federal standards that define how facilities must be designed and constructed in order to comply with those laws and regulations. It is the goal of the NPS to ensure that all people, including the estimated 54 million citizens with disabilities have the highest level of accessibility that is reasonable to their programs, facilities and services in conformance with applicable regulations and standards.

The Army Corps of Engineers – Section 404 of the Clean Water Act regulates the discharge of dredged or fill material in the waters of the United States. Typical Section 404 activities include road fills and causeways where portions of the construction are in waters of the United States; dams and dikes; protection devices such as levees, groins, riprap and other bank stabilization; and site development fill as part of residential, commercial, industrial or recreational construction. The Omaha District, Army Corps of Engineers will be contacted for further information.



2.0 ALTERNATIVES

2.1 Introduction

This chapter identifies and compares three alternatives, which provide a reasonable range of choices in achieving the objectives of the project and addressing issues of concern. It explains the methodology used by the Yellow Wolf Trail Interdisciplinary Team (IDT) in generating and selecting alternatives developed during the Alternative Generation Workshop held in March, 2008 and the Alternative Selection Workshop in May, 2008. Further, it describes alternatives eliminated for further consideration.

The alternatives were generated and refined on an iterative basis to best achieve the purpose and need of the project, which requires the proposed action to provide opportunities for:

- Appreciation of the cultural and natural resources
- Potential guided and self-guided tours
- Educational and research opportunities
- Beneficial outdoor leisure activities
- Appreciation for environmental stewardship
- Multi-generational and multi-cultural experiences
- Opportunities to further develop partnerships

The alternatives were proposed to address several key issues, raised in the scoping, which include erosion, resource damage, trail access, security/safety and cultural resources. The IDT developed criteria in the areas of design/construction and program to achieve the purposes of the project and mitigate issue concerns. Based on this process, three alternatives emerged and are described below:

- Alternative 1) no action
- Alternative 2) single loop alternative
- Alternative 3) multi-loop alternative (preferred alternative).

All of the considered alternatives, including the No Action Alternative, will require rehabilitation of the existing Blackberry Trail from the trailhead at the Parking area down to the boundary of the US Forest Service. Additional alternatives were eliminated, which included a loop without crosswalks, allowing bicycles on portions the trail system and prohibiting "historic" horse traffic on the existing Blackberry Trail.

2.2 Alternatives Description and Summary Comparison

This section describes the alternatives and their features and provides a summary comparison of the key attributes of the alternatives.

There are a number of common features for both the proposed new trails. They are described as either design/construction elements or program/operations features.

Design/Construction Elements

Both of the proposed trail alternatives would be constructed using native materials with tread ranging from intermittent/indistinct to discernable/continuous. The width of the trail will range from 2 feet to 3 feet, depending on the location. The maximum gradient for trails will be 10% or less and a cross slope of about 5% to route water off the trail surface. Each section of the trail



should allow for grade breaks for drainage relief at appropriate intervals for the gradient, soils, slope and ground cover.

Each Trailhead will include basic elements, such as, parking, vaulted toilet, trail sign, and bike rack. The availability of day use areas varies between the alternatives. No utilities (water or electricity) will be available at any trailhead, which will limit the use to daylight hours.

According to the NPS Management Policies, the number and types of facilities to support visitor use in backcountry areas, including sanitary facilities, will be maintained at the minimum necessary to achieve a park's backcountry management objectives and to provide for the health and safety of park visitors. To avoid the need for sanitary facilities, public use levels will be managed, where practicable, in accordance with the natural system's ability to absorb human waste. The Service will not provide refuse containers in backcountry areas. All refuse must be carried out, except that combustible materials may be burned when authorized by the superintendent. All sanitary facilities planned for the project will be located at the trailheads in previously developed areas, just off Highway 244.

Program/Operations Features

Both trail alternatives would provide an opportunity for cultural and natural resources interpretation, through possible audio tour/podcast, low profile wayside exhibits, and ranger-guided or self-guided walks.

2.2.1 Alternative 1 - No Action

Under the No Action Alternative, the existing trails would remain and authorized uses and park facilities would continue operation. The existing trails include the 0.6 mile President's Trail, the .7 mile Blackberry Trail and a social trail south of Old Baldy Mountain. Figure 2 depicts the existing trails within the Memorial. Estimated cost is \$244,116 (see Appendix A).

Ongoing maintenance of the existing trails would be required. In particular the existing Blackberry Trail section that connects to the Centennial Trail system within the Black Hills to the Memorial has experienced resource damage due to terrain and horse use. The National Park Service in cooperation with the US Forest Service has identified the Blackberry Trail for rehabilitation to protect nearby resources and to reduce maintenance. The Blackberry Trail section is the only section within the Memorial that "historically" allows horse traffic.

Rehabilitation will require several log/rock checks and waterbars to control water flow. A raised rock causeway is recommended in the wet, boggy lower section of this trail. Sections of the trail would need to be rerouted to reduce grades to a workable degree. Horse trails in this soil type should be kept at 12% or less with grades less than 5% the best. The reroute will require a switchback up the drainage to the north, crossing the drainage twice and construction of a rock retaining wall to hold the trail edge to withstand the stock (horse) use. (Larsen 2004).

2.2.2 Alternative 2 – Single Loop Trail

In the Single Loop Trail Alternative the proposed trail would encompass the Memorial property with one large loop (approximately 4.3 miles in length) and connecting trails for a total of 6.7 miles, which includes the existing Presidential Trail. Figure 3 illustrates the Single Loop Trail. Estimated cost is \$861, 690 (see Appendix A).

Conceptually, the Single Loop Trail was the initial proposal envisioned by Superintendent Baker and part of the Centennial Initiative Signature Project proposal. In order for the Single Loop Trail



to encircle the Memorial, it must cross Highway 244 in 2 locations (west crosswalk or east crosswalk). Two parking locations are identified in this alternative, which are the existing PPI (1,150 vehicles) and Profile (15 vehicles). Visitors may enter the trail from one of three proposed trailhead locations:

Presidential Trail Trailhead

Lot 7 Trailhead (Existing parking – Use Underpass at Highway 244 to access trail)

Profile Trailhead

The Park Service will consider some type of registration system for the trail during the trail design phase. Emergency personnel and equipment would be able to enter the trail at the above-described trailheads.

Day use (consisting of a wayside exhibit and benches) will tie into ranger or self-guided walks for the Presidential Trail and Starling Basin/Blackberry Trail under the Single Loop Alternative. Three scenic vistas can be accessed off the Single Loop Alternative.

2.2.3 Alternative 3 – Multi-Loop Trail (Preferred Alternative)

The Multi-Loop Trail retains many of the features of the Single Loop Trail, encompassing the Memorial. Additionally, several shorter sub-loops would be created to allow shorter hikes on the trail and hikes of varying length and difficulty. Figure 4 illustrates the Multi-Loop Trail. The main loop, sub-loops, and connecting trails total approximately 9.8 miles in length. Estimated cost is \$1.2 million (See Appendix A).

Unlike the Single Loop Trail, a section of this trail would provide a 0.5 mile greenway to the east boundary of the Park for potential connection with the City of Keystone, providing another option for access to the Memorial. This alternative will also include a horse comfort station to accommodate the “historic” equestrian users on the Blackberry Trail. According to NPS Management Policies, equestrian trails and related support facilities, such as feed boxes and hitch rails, may be provided when they are consistent with park objectives and when site conditions are suitable. Five scenic vistas can be accessed from this trail. See Figure 4 for photos taken from the scenic vistas.

Larger in scope than the Single Loop Trail, the Multi-Loop Trail is proposed in phases to reflect priorities and to be built out as funding becomes available. The phases include:

Phase I—Establish the north trail segments, trailhead and day use at Presidential Trail (see Figure 5)

Phase II—Establish Starling Basin trail and rehabilitate Blackberry Trail, establish Lot 7 underpass and trailhead, Profile trailhead, and ADA short trail (see Figure 6)

Phase III—Establish west crosswalk, trailhead, parking and connector trails (See Figure 7)

Phase IV—Establish east crosswalk, trailhead, parking and connector trails, trailhead south of 244/16A intersection (See Figure 8)

Phase V—Establish greenway to east boundary, 244/16A crosswalk, east boundary parking, northeast trail and entrance trailhead (See Figure 9)



When all of the phases are complete, there will be a total of 4 crosswalks, 6 parking areas, 6 emergency access points, 7 trailheads, and 7 day use areas. There will be 5 smaller loops with the trail system varying from 0.5 miles to 1.5 miles. The four additional parking areas will create 40 additional parking areas for trail users. The park service will consider some type of registration system for the trail system during the trail design phase. See photos below of the additional parking areas and scenic vistas under this multi-loop alternative.

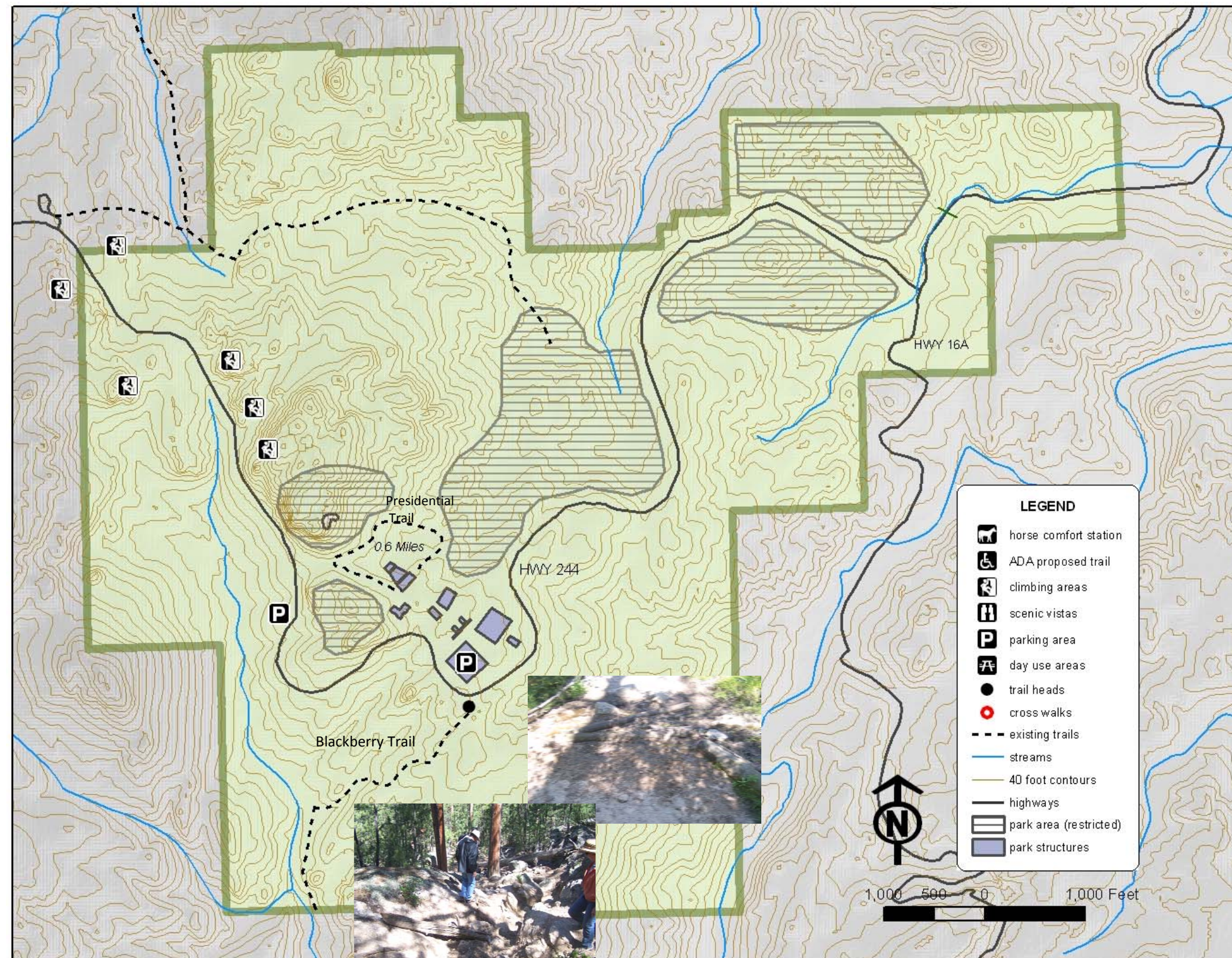


Figure 2
ALTERNATIVE 1: NO ACTION

Maintain the three existing trails with a rehabilitation of the Blackberry Trail



Blackberry Trail



Presidential Trail



Trail south of Mount Baldy

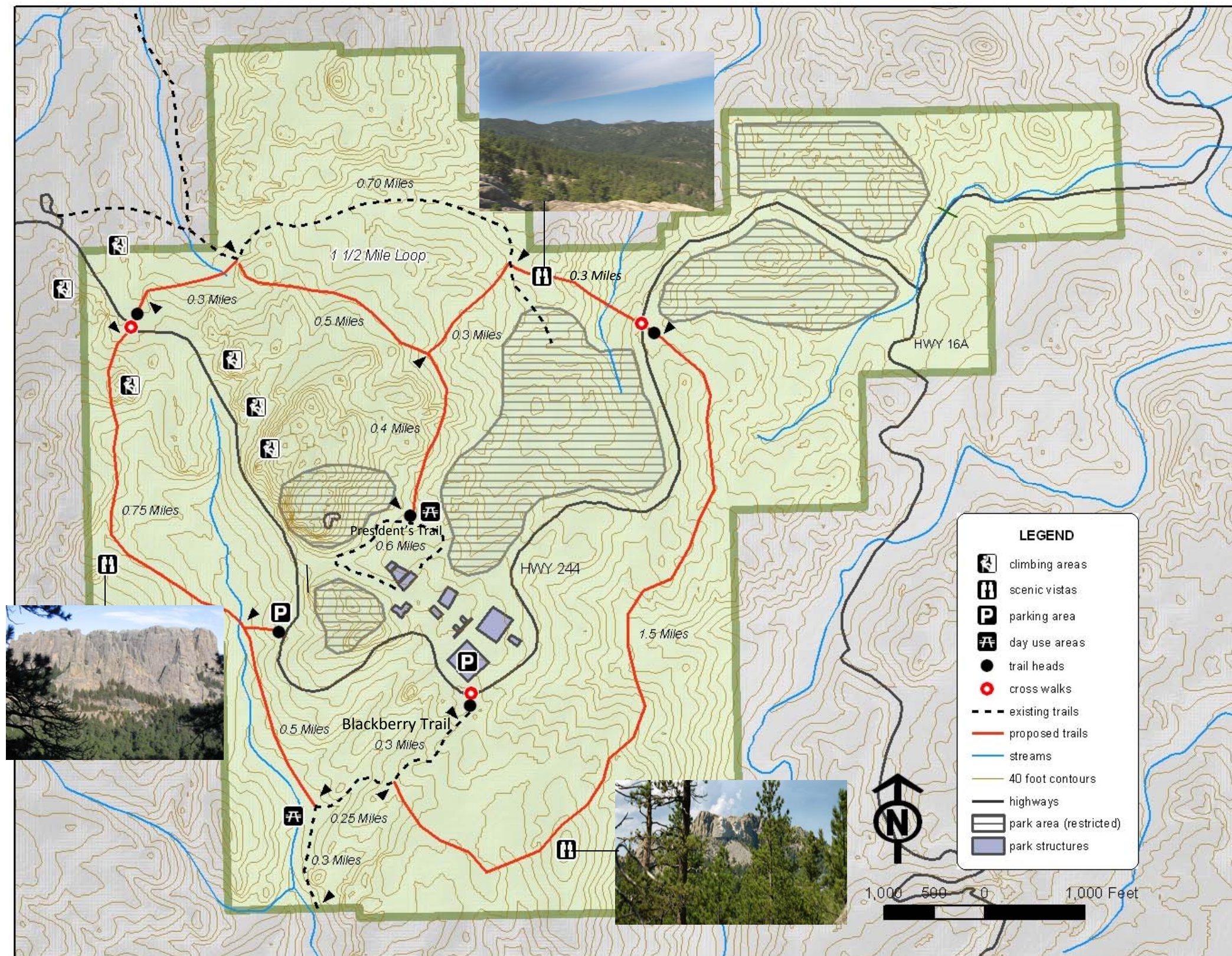
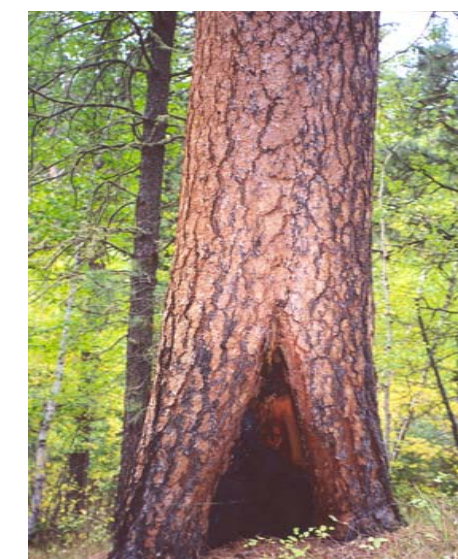


Figure 3
ALTERNATIVE 2: SINGLE LOOP

The proposed trail would encompass the Memorial property with one large loop, approximately 6 miles in length.



Starling Basin



Old Growth Forest

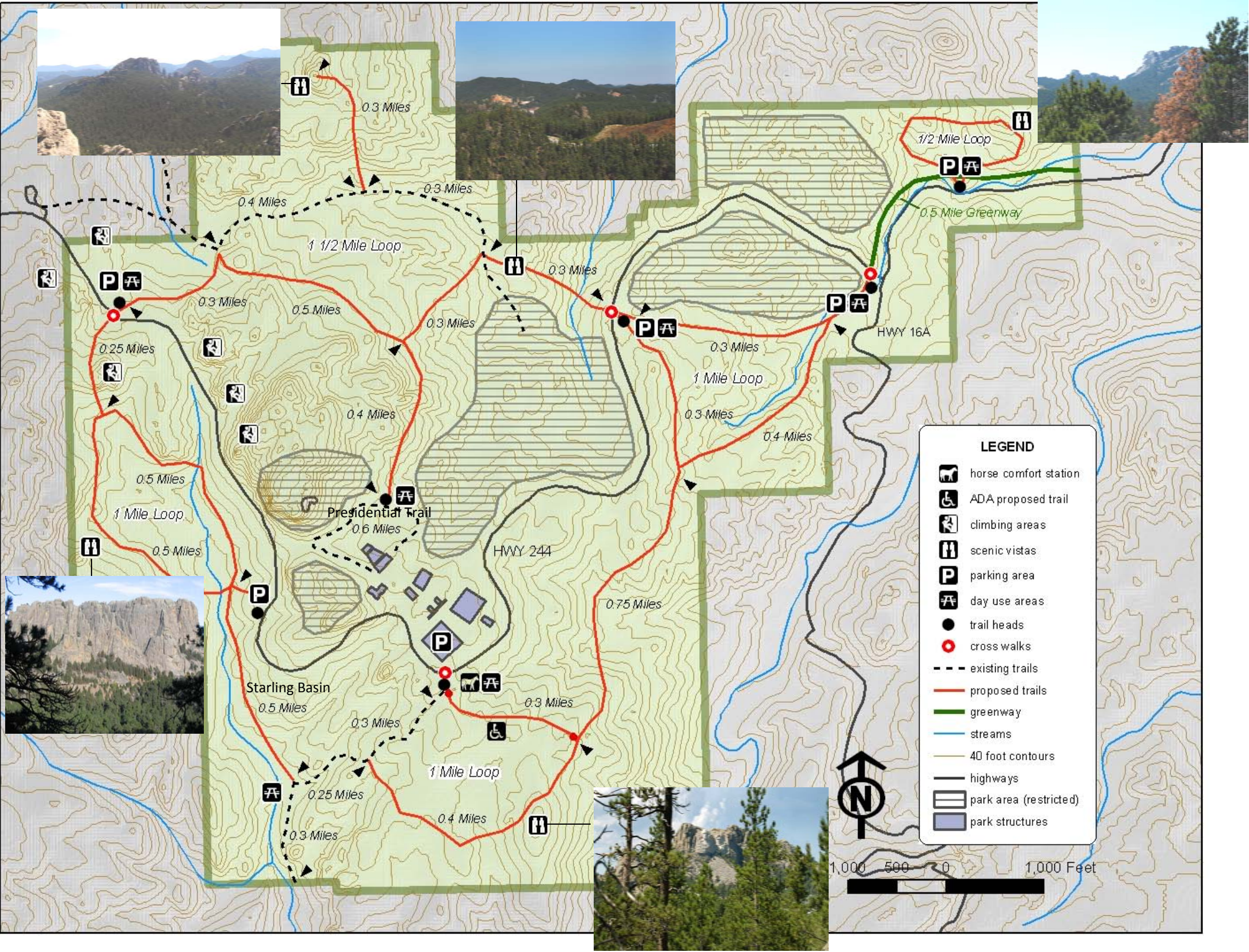


Figure 4
ALTERNATIVE 3: MULTI-LOOP

The Multi-Loop Trail retains many of the features of the Single Loop Trail, encompassing the Memorial. Additionally, several shorter sub-loops would be created to allow shorter hikes on the trail and hikes of varying length and difficulty.



Spur to Mount Baldy



Mount Baldy

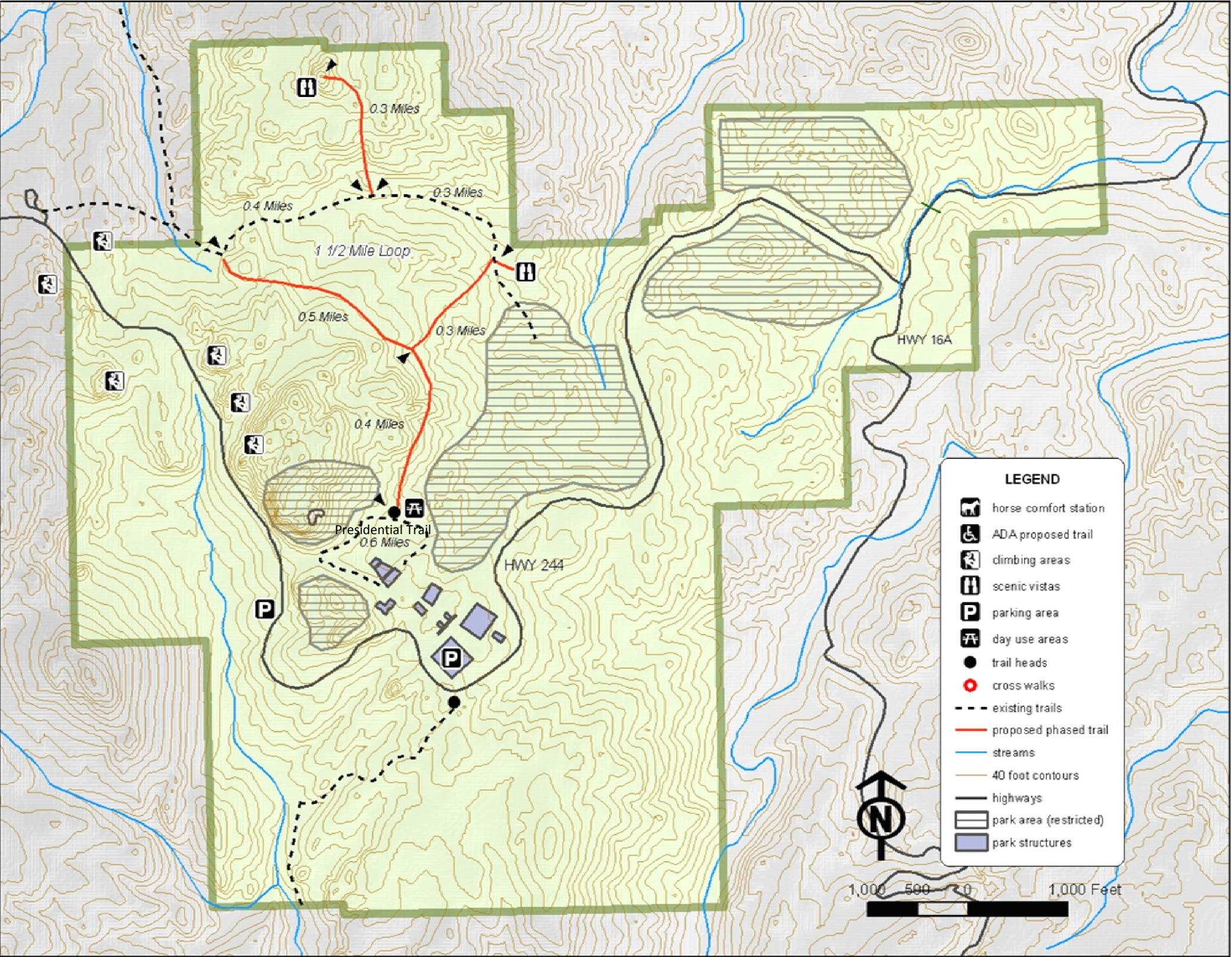


Figure 5
Phase I of Multi-Loop Trail

Establish north trail segments, trailhead and day use at Presidential Trail



Mount Baldy



Tipi Village near Presidential Trail

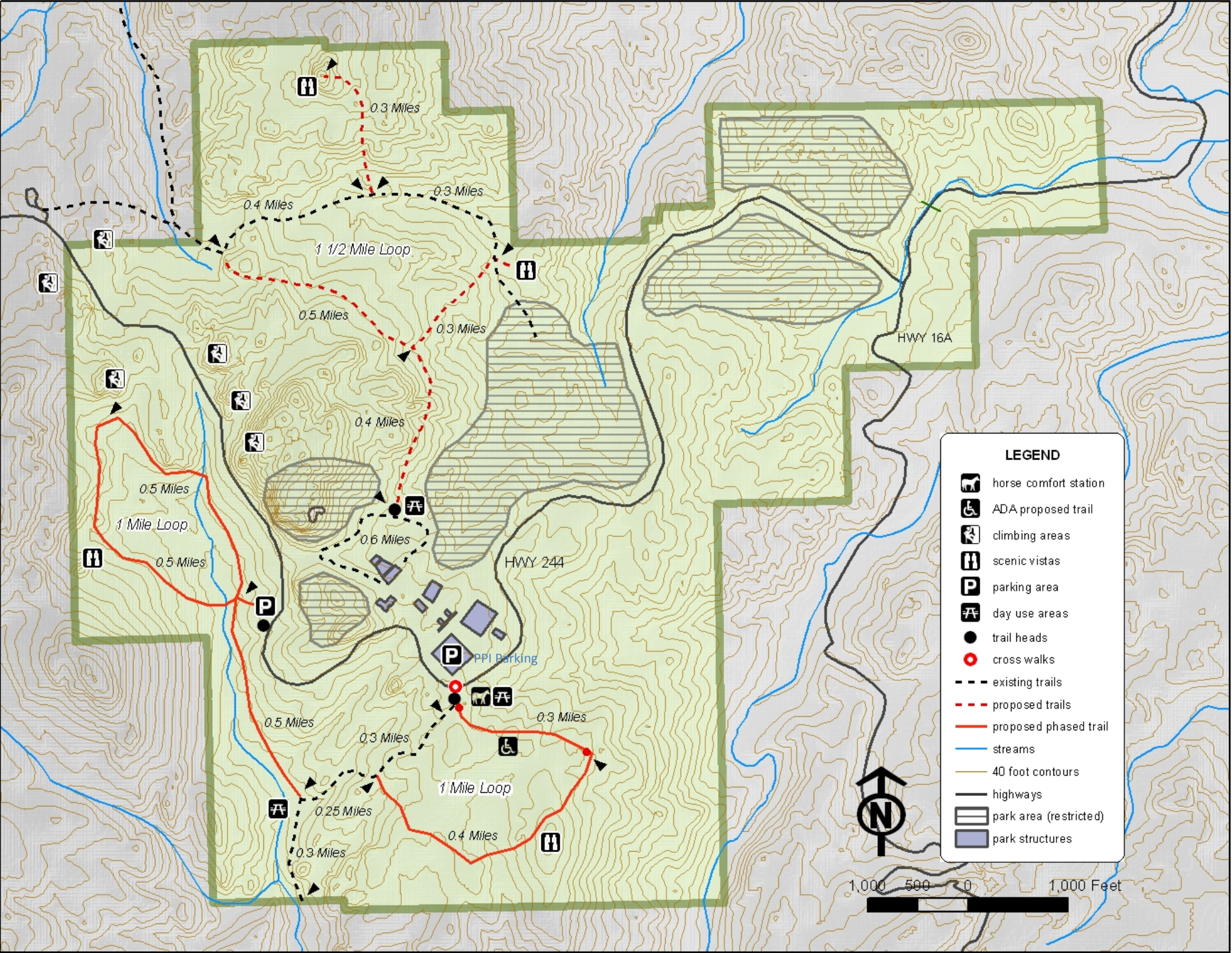


Figure 6
Phase II of Multi-Loop Trail

Rehabilitate Blackberry Trail, establish Starling Basin Trail, Lot 7 underpass and trailhead, Profile trailhead, and ADA short trail.



View of Existing PPI Parking from Lot 7



View of Existing Profile Parking Area

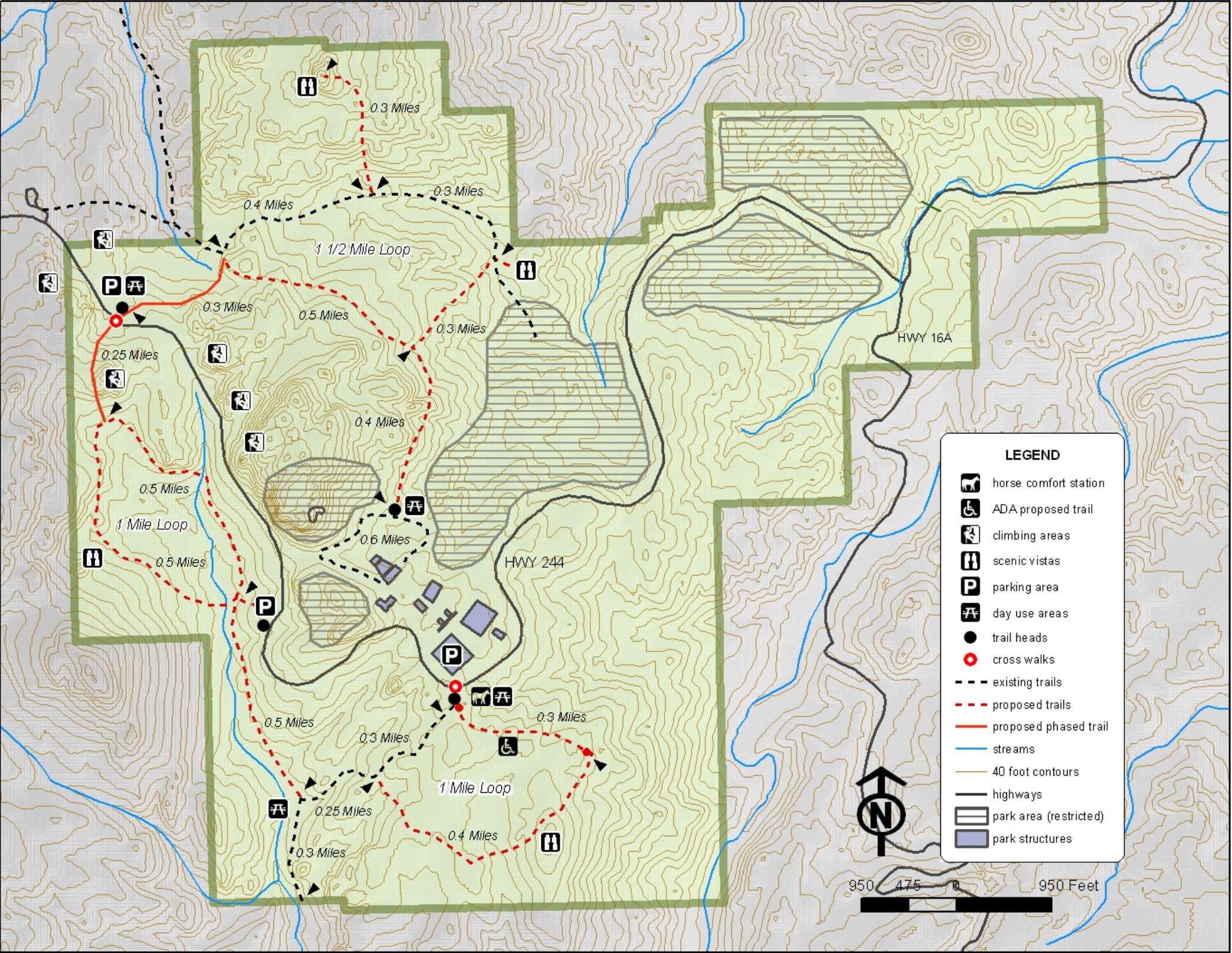


Figure 7
Phase III of Multi-Loop Trail

Establish west crosswalk, trailhead, parking and connector trails.



Existing West Boundary Pull Offs



Existing West Boundary Pull Offs

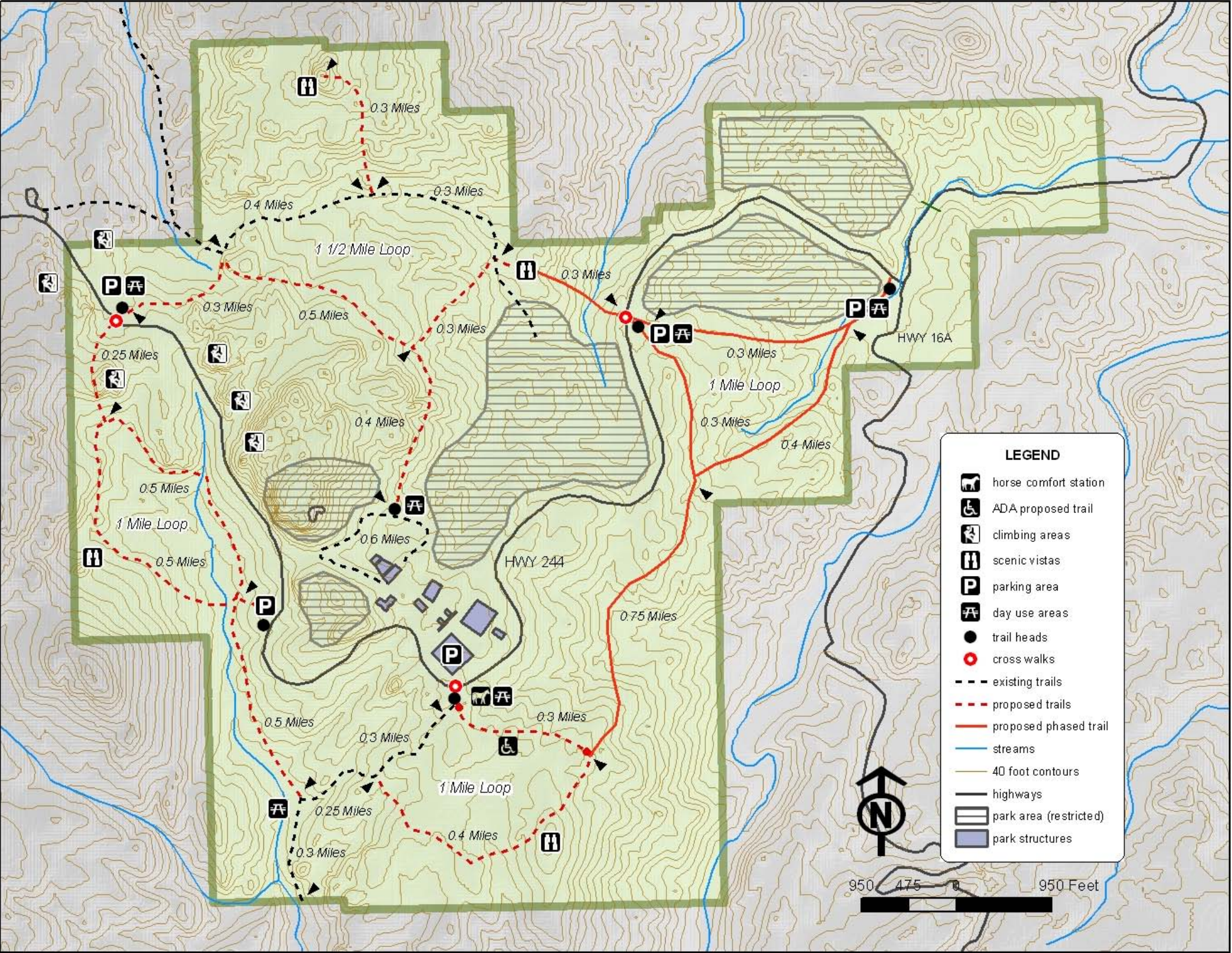


Figure 8
Phase IV of Multi-Trail Loop

Establish east crosswalk, trailhead, parking and connector trails, trailhead south of 244/16A intersection



Existing East Boundary Entrance



Existing East Boundary Exit

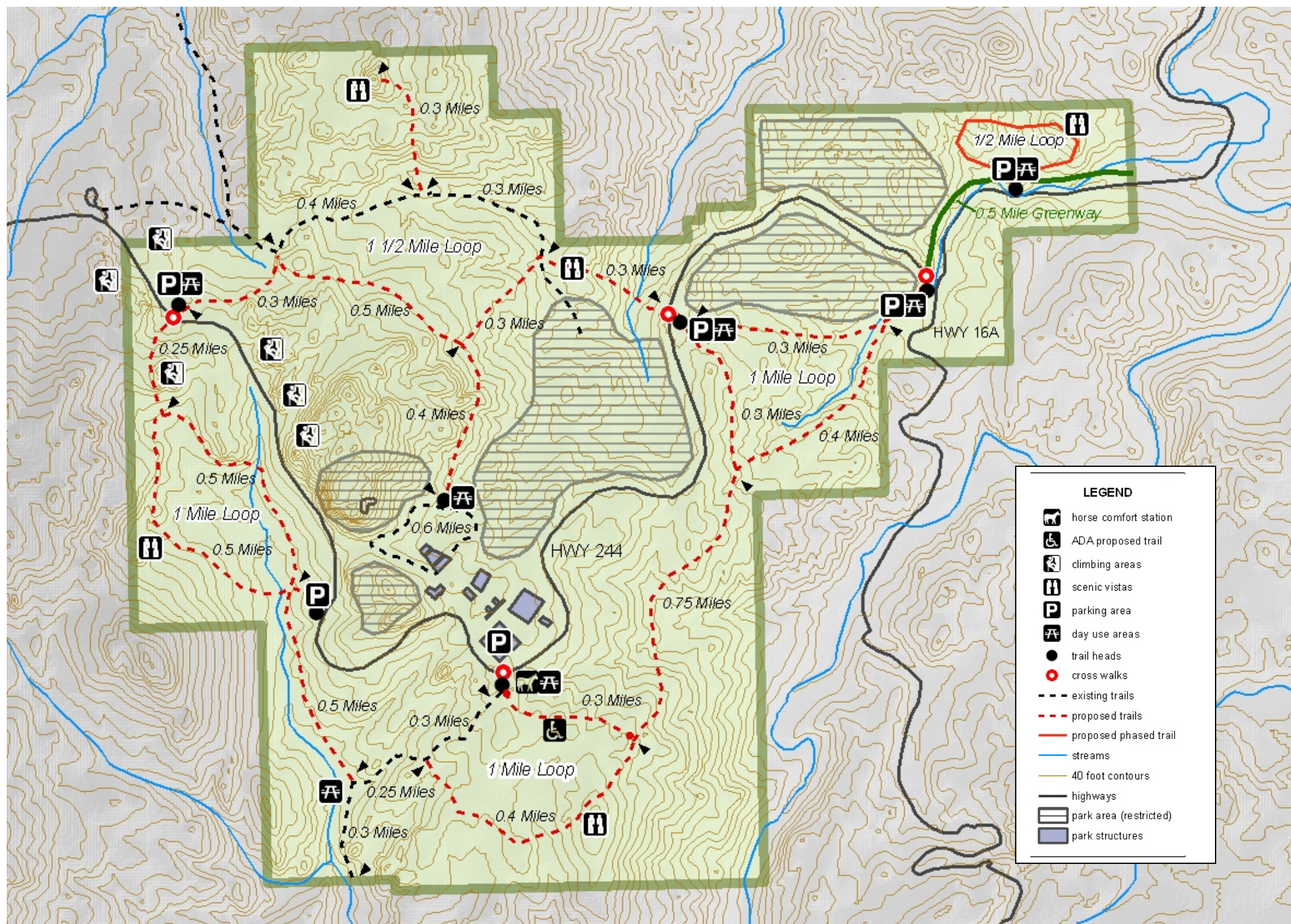


Figure 9
Phase V of Multi-Loop Trail

Establish greenway to east boundary, 244/16A crosswalk, east boundary parking, northeast trail and entrance trailhead



Existing 244 Greenway (West Bound)



Existing 244 Greenway (East Bound)



2.2.4 Alternatives Summary Comparison

A comparison of the key attributes of the alternatives illustrates the variations between the alternatives. All of the alternatives seek to meet legal and regulatory requirements, as described in Chapter 1, to achieve compliance for the trail system.

Table 1. Summary of Alternative Comparison

Attributes	Alternative 1 No Action	Alternative 2 Single Loop	Alternative 3 Multi-Loop (Preferred)
Miles of Trail	2.2 miles	6.7 miles	9.8 miles
Number of Crosswalks	0	3	4
Number of Parking Areas	2 existing	2 existing	6 (includes 2 existing)
Emergency Access Points	2	2	6
Number of Short Sub-Loops	1	2	5
Connection to City of Keystone	No	No	Yes
Number of Trail Heads	1	4	6
Number of Scenic Vistas	0	3	5
Number of Day Use Areas	0	2	8
Switchbacks	0	1	2
Horse Comfort Stations	0	0	1

2.3 Alternatives Considered but Eliminated from Detailed Study

Three alternatives were discussed, but eliminated from detailed study. Two of the alternatives addressed the types of traffic on the trails and the third addressed another trail configuration.

2.3.1 Trail without horse traffic on the Blackberry Trail

There is significant erosion on the existing Blackberry Trail, due to design and horse traffic. The IDT discussed and rejected the possibility of eliminating horse traffic on the Blackberry Trail, because of historic use and the number of visitors who arrive at the Memorial via the Centennial Trail on their horses.

The IDT recognized the need for a more sustainable design for the Blackberry Trail, which would eliminate many maintenance and erosion problems in the area.



2.3.2 Trail with bike traffic

The Superintendent's Compendium (NPS 2008), states that any type of motorized or non-motorized wheeled vehicles (i.e. bicycles), for the purpose of transporting personal property or persons, on backcountry trails is prohibited. Although, no bike traffic is currently allowed in the Memorial, many visitors may approach the main park entrance on bicycles and park them at the PPI. The IDT felt the addition of bike traffic would change the experience for the visitor on the backcountry trail.

2.3.3 No crosswalks trail

This alternative was dismissed by the IDT, recognizing the difficulties in accessibility to the trail by visitors, park personnel and emergency personnel and equipment. Since no crosswalks were proposed in this trail, all access originated from within the park. Another drawback was the inability to access remote regions of the proposed trail, without first returning to the main entrance area of the Memorial.

2.4 Process Used to Formulate the Alternatives

The IDT employed a two-step process to generate and select alternatives for the environmental assessment. Public comment was invited through two open houses and on the NPS-hosted PEPC internet site. Together, the ideas for the trails were developed, incorporating project objectives and issues raised by the IDT and public.

2.4.1 Alternatives Generation Workshop

The participants in the IDT included representatives from the Memorial, the Regional National Park Service, South Dakota Game, Fish and Parks and the US Forest Service. The IDT reviewed NEPA requirements and began to define the purpose and need for the project. They heard expert reports on various aspects of the affected environment in the Memorial, including biological, water and cultural resources and socio-economic conditions.

The IDT identified some key issues to take into consideration in the development of the alternatives, including:

- | | |
|---------|---|
| Issue 1 | Erosion of Trails near Water Resources |
| Issue 2 | Disturbance to the Ecological and Wildlife Resources |
| Issue 3 | Accessing the Backcountry Trail System |
| Issue 4 | Securing the Memorial and Providing for Personal Safety |
| Issue 5 | Protecting Cultural Resources |

Many of these issues and concerns were reflected in public comments, which are captured in Appendix B.

Considering this input, various alignments were reviewed, including the types of users, accessibility, parking, trailhead locations, the amenities and pedestrian crossings on Highway 244.

Combinations of choices with each of these variables were brought forward to the Alternative Selection Workshop.



2.4.2 Alternatives Selection Workshop

The participants in the IDT included representatives from the Memorial and the South Dakota Department of Transportation. The IDT reviewed materials from the Alternative Generation Workshop and finalized the IDT's purpose and need statement. Key features for a trail, which met the project objectives, were identified and criteria developed for comparing alternatives. The criteria included:

Design/Construction

- Restroom facility (back country vault toilet) at each trail head
- Adequate parking for east / west trailhead
- Ability for pedestrian crossings (highway 244 & 16A)
- ADA accessibility for a portion of the trail
- Sustainable construction
- Bus/RV access and parking
- Doesn't interfere with administrative/restricted areas
- Protects cultural and natural resources
- Avoids sensitive areas
- Alignments provide options for trail access by difficulty level, multiple distances, guided and self-guided
- Provides quiet soundscapes
- Adjoins other trails and the City of Keystone
- Provides better opportunity for emergency access
- Aesthetically pleasing environment

Program/Operations

- Informational Kiosk at each trail head
- Open all seasons
- Day use areas, low profile wayside exhibits and benches
- Highlights natural resources and cultural resources in that proximity
- Increased ability to secure and actively manage park lands
- Educates the visitor on their role in protecting resources
- Provides opportunities for local and national volunteer/partners involvement

Several ideas for trail configurations were considered with varying numbers of crosswalks, which in turn varied the number of loops or spurs, access points and trailheads. The various trail proposals were compared to the criteria. The highest ranking trail conforming to the criteria was a trail with multiple loops and one crosswalk near the current entrance to the existing PPI.

The IDT examined criteria, where the proposed trail did an adequate or poor job of meeting the criteria to satisfy the objectives of the project and discussed ways to further improve the trail system to better meet the project objectives. The trail that emerged after finding ways to better meet the objectives and criteria was known as a multi-loop trail.

The IDT also identified another trail route, known as a single loop trail, which encircles the Memorial, but has fewer smaller loops or side trails within the system.

After comparing the two trails, the multi-loop and single loop, the IDT determined the multi-loop better met the project objectives and accompanying criteria.



2.5 Resource Impacts and Adherence to Project Objectives

The impacts of the three alternatives would be in the areas of the follow resources:

- Water Resources
- Ecological and Wildlife Resources
- Backcountry Trail Use and Access
- Security and Safety
- Cultural Resources

In the areas where there are adverse impacts, mitigation measures are proposed to minimize the environmental consequences.

The project objectives are best met with the preferred alternative.

2.6 Preferred Alternative

The National Park Service's Preferred Alternative is Alternative 3, the Multi-Loop Trail.

The Multi-loop Trail also is this projects environmentally preferable alternative, meeting the goals of NEPA, which are to:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- Assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- 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;
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.



3.0 AFFECTED ENVIRONMENT

The affected environment for this project includes relevant resources that would affect or that would be affected by the alternatives if they were implemented. This Chapter establishes a baseline for comparing the effects of all action alternatives, as described in detail below:

Mount Rushmore National Memorial (Memorial) is located on the central slope of the Black Hills in southwestern South Dakota, Pennington County. The Black Hills are a forested mountain range in southwest South Dakota and northern Wyoming covering approximately 2 million acres. The Memorial encompasses 1,278 acres. Mount Rushmore is characterized by granite knobs, peaks, ridges and valleys covered with ponderosa pine and meadows. The Memorial is the most heavily visited park unit in the Northern Great Plains Network Parks. However, almost all visitations are for purposes of seeing the famous mountain carvings of Presidents George Washington, Thomas Jefferson, Abraham Lincoln, and Theodore Roosevelt and the associated visitor facilities. A very small amount of hiking or non-consumptive tourism exists. Hunting and trapping are not allowed at the park, but do occur outside the boundary. Fishing does not occur due to a lack of fishable waters in the park. Most of the land surrounding the Memorial is administered by the Black Hills National Forest. The Black Elk Wilderness Area, the Peter Norbeck Wildlife Preserve and the Hell Canyon and Mystic Districts of the Black Hills National Forest are adjacent to the Memorial. Nearby communities include Rapid City, Hill City, and Keystone. The town of Keystone, which is almost entirely tourism dependent, is located on the northeast boundary of the Memorial.

The topography is generally very rugged and ranges from moderate to very steep. Much of the area is punctuated with a variety of exposed granite that forms knobs, pinnacles and mountains. The elevation ranges from a low of around 1524 m (5000 ft) in the southeastern portion to Mount Rushmore with a high of 1738 m (7725 ft). The second highest peak in the area is Old Baldy Mountain in the northern area which reaches an elevation of 1708 m (5606 ft).

3.1 Water Resources

3.1.1 Water Resources, Wetlands and Floodplains

The three main drainages within the boundaries of the Memorial are Lafferty Gulch, Starling Basin and Grizzly Gulch. They contain several small streams and ponds which contribute to the diversity of the Memorial. See Figure 2 (Heakin 2001).

Lafferty Gulch is a north-trending drainage located in the north central area of the Memorial. A very small stream (Lafferty Gulch Creek) flows through Lafferty Gulch surrounded by large boulders and heavy canopy. Stream reaches vary with only a trickle of water to widely spaced pools. Mount Rushmore obtains its water from a single well located in Lafferty Gulch. The well is about 200 feet deep and completed in a fractured bedrock aquifer.

Starling Basin is located along the western and southern edges of the Memorial. It contains a small stream (Starling Gulch Creek) and an associated wetland area augmented by a beaver pond. The wetlands in Starling Basin are considered one of the premier wetlands found in the Black Hills and considered a "historic" beaver pond area. Below the meadow, the stream flows into a higher gradient canyon area with heavy canopy and large rock outcroppings. Substrate is predominantly sand and gravel and pools are formed by large boulders. White, Robert G., W.R. Gould, W. P. Dwyer, 2002). According the National Wetlands Inventory, the wetlands located in the southwest corner of the Memorial is classified as PEMCb, defined as a Palustrine Emergent



seasonally flooded wetlands created or modified by the action of beaver. This type of wetlands system is dominated by trees, shrubs, emergents and perennial plants. Vegetation is present for most of the growing season in most years.

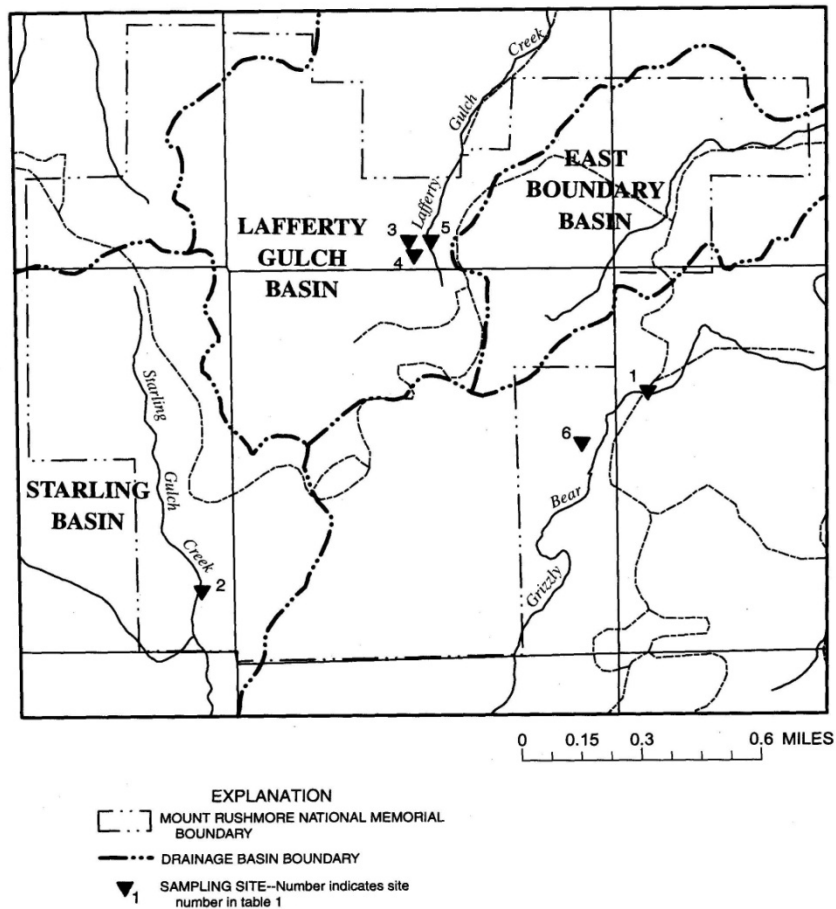


Figure 10. Drainage Basins within Mount Rushmore National Memorial (Heakin 2001)



Wetland in Starling Basin

Grizzly Creek is located along the eastern side of the Memorial. It is the largest perennial stream located in the Memorial. It is a small cold water stream with heavy canopy and a pool-riffle channel. Pools are formed by large boulders and substrate is predominately sand and gravels (White, et.al. 2002).

Mount Rushmore National Memorial staff has expressed concern with the overall water quality of these streams. Baseline water quality data specify five parameters, including dissolved oxygen, pH, antimony, fecal coliform and turbidity that exceeded state water quality criteria at least once during the screening years (Rust, 2006).

Data from a Baseline Water Quality Data Inventory and Analysis (NPS 2000) completed for surface water resources in the Memorial study area reveal a shortage of observations measured at stations within the park. The 2000 report states that without adequate data it is difficult to make definite statements regarding water quality throughout the study area; however, from the available data, surface waters appear to be generally of good quality with some impact from natural and human activities. Potential natural sources of contaminants include flooding. Potential anthropogenic sources of contaminants include municipal and industrial discharges; stormwater runoff; quarrying and mining operations; ranching activities; logging operations; recreational use; and atmospheric deposition.

A USGS water resources report (Heakin 2001) stated that the largest potential influence to the Memorial's water resources comes from the millions of visitors each year. Six sites (Figure 2) were sampled between January and July 2001 for a level one water quality inventory for Mount Rushmore National Memorial. Summary of those results indicate that runoff from parking lots has the potential to be carried to streams draining the Memorial. Deicing material applied to road could be partially responsible for elevated concentrations of sodium and chloride in both Starling and Lafferty Gulch Creeks. Concentrations of nitrate in samples collected exceeded 2 mg/L which are generally assumed to results from anthropogenic sources. However, the results showed that the quality of the Memorial's water resources is good with respect to most of the constituents analyzed.



Jill Rust (2006) conducted research for her thesis in several streams located in National Parks of the Northern Great Plains Network (NGPN), including the three streams within the Memorial. This effort was conducted to provide baseline descriptions of macroinvertebrate communities within aquatic systems and to select optimal metrics for use in future monitoring efforts.

Sampling in all three streams indicated that heavily used horse trails adjacent to Beaver Dam Creek (Starling Gulch Creek) could increase organic enrichment. Runoff from the trails could also send silt/clay into the stream, resulting in higher embeddedness, which may indicate changes in the rates of upland erosion and sediment supply, turbidity and total suspended solids.

In Rust's discussion she states that Grizzly Creek and Lafferty Gulch measurements indicated good habitat and water quality. In Beaver Dam Creek several species of Diptera were abundant and tolerant organisms comprised the majority of the richness. Many Diptera taxa have broad-based distribution and may occur in highly polluted streams. However, a high diversity of Diptera is usually an indicator of good water quality. According to Rust, as a disturbance increases, tolerant individuals tend to predominate in the community.

3.2 Ecological and Wildlife Resources

3.2.1 Terrestrial and Aquatic Resources and Migratory Birds

The backcountry areas of Mount Rushmore (wetlands, old growth forest, rock outcrops) provide a diverse and abundant habitat for many species of mammals, invertebrates, reptiles, amphibians, vegetation, and birds. Recent inventories prepared for the NGPN Inventory & Monitoring (I&M) Program, National Park Service conducted within the Memorial boundaries concerning ecological and wildlife resources are identified and summarized below:

Inventory of Mammals at Ten National Park Service Units in the Northern Great Plains from 2002-2004, Schmidt, Cheryl A., P. Sudman, and S. Marquardt, 2004).

The Memorial was surveyed for small, terrestrial mammals during the summer of 2002. Wildlife cameras were deployed at different periods between August 2002 and November 2003, and bat surveys were conducted in the summer of 2004. The combined surveys added a minimum of 22 native species to the list of mammals documented for the site. The wildlife cameras produced identifiable images of the following mammals: white tail deer, mule deer, bushytailed woodrat, coyote, and raccoon.

Seven species of bats were identified based on echolocation analyses. Of the species documented in this survey, the bats are the primary species of concern. The Memorial supports an apparently abundant and diverse bat community. Bats are often considered indicator species because of their specified habitat requirements and sensitivity of some species to anthropogenic disturbances. As such, critical resources for these bats, such as roosting sites and drinking/foraging ponds, should be carefully managed to maintain their availability to bats. Potential impacts to species include: vehicular strikes on roads, spread of non-native/invasive plant propagules and wildfires. None of the mammalian species documented at the Memorial is known to be limited in dispersal by roads.



Documentation of Wildlife Species in Northern Great Plains Network National Parks Using Automated Cameras, (Licht 2004).

From the summer of 2002 to the summer of 2004 motion-sensing cameras were deployed at the Memorial as part of a comprehensive mammal inventory at several park units in the Northern Great Plains. The total number of animals captured on film was not significant. This could be due in part to the equipment, and in part to the poor habitat of the ponderosa pine ecosystem. Of special note is the large numbers of hikers and horseback riders captured by the cameras stationed at trails. The images demonstrate that cameras could be used for monitoring visitor use of the trails. The number of animals (including *unknowns*) captured per camera night (excluding periods of known malfunctions) was 0.17. Animals and people (both hikers and horseback riders) could be discerned in only 24% of the images.

Species captured included Mule deer (40); Coyote (8); unknown deer (3); Bushy-tailed woodrat (3); White-tailed deer (2); Raccoon (2); and unknown raptor (1)

Inventory of Reptiles and Amphibians at Seven National Park Service Units in the Northern Great Plains from 2002-2003 (Smith, et. al., 2004).

The study found 4 of the 8 species they expected (50%). The authors felt confident that species richness is eight species. Common species were relatively easy to find, considerable effort was required for other species. Two of the species not found are rarely observed (terrestrial tiger salamanders) or rare (pale milk snake). Two other species common in selected habitats (red belly snake, smooth green snake) were not found.

The “historic” beaver pond has created a good wetland site suitable for several of the herpetofauna, including northern leopard frog, garter snakes, smooth green snakes, and red belly snakes. The authors found this to be the most important herpetofaunal habitat at the park, and one of the nicer wetlands found in the Black Hills. The area should be preserved in its natural state...the beaver pond is particularly diverse, but conservation of the entire drainage is important. Species of special interest at the park are the Northern leopard frog, because of their imperiled status across their range and the pale milk snake. Monitoring of the Starling Basin was suggested. No particular impacts on the Starling basin were identified in this study (2004). However, they did notice significant damage from horses in the area. Starling basin does seem relatively removed from the heavy visitation of the park.

Bird Inventories and Monitoring on National Park Service Units in the Northern Great Plains, 2002-2004. Final report. (Panjabi, Arvind and D. Licht, 2004.)

Forty-eight bird species were detected at the Memorial during three visits to the Park in June of 2002, 2003 and 2004. The inventory team confirmed the presence of 9 (43%) of the 21 expected species, reconfirmed the presence of 29 (91%) of the 32 previously documented species, and confirmed the presence of 8 additional species not listed as either documented or expected. Of the 12 expected species that were not documented during the inventory 9 species are reasonably likely to summer in or near the park in the future, although they should not necessarily be expected. Some species would require a large-scale fire to create suitable habitat. The other 3 expected species not documented are not likely to summer in or near the park primarily due to inappropriate habitat conditions. Three documented species not observed during the inventory could possibly have summered in or near the park in the past and may do so again in the future.



Maintenance of old growth pine stands should be considered the top priority for bird management at the park. Despite their overall density and diversity of breeding birds, they provide habitat for special rare or uncommon species in the Black Hills. A few small stands of aspen provide habitat for species that require broad-leaved vegetation. A small stand of white spruce along the bottom of Starling Basin provides habitat for Swainson's thrush and Ruby-crowned Kinglet. The wetland at Starling Basin adds to the diversity of habitats in the park. A mixed spruce-aspen-pine stand in drainage with flowing water heading north from the road to the maintenance shops provides unique habitat in the park for Ruffed Grouse, Red-napped Sapsucker and Golden-crowned Kinglet, among other species. The tall rock spires around Mt. Rushmore provide habitat for cliff nesting species. It does not appear that active management of habits is ongoing at the Memorial.

Fish Inventories of Five Parks in the Northern Great Plains Network (White, Robert G., W.R. Gould, W. P. Dwyer, 2002)

The Memorial was selected as one of five parks to conduct fish inventories in 2001. The object of the inventory was to document fish species in each park and create voucher specimens for all species that are new or do not have voucher specimens. Segments from three streams identified by Park Staff (Grizzly Bear Creek, Starling Basin and Lafferty Gulch) were sampled with electrofishing on September 25-26, 2001. Of the five species on the potential species list, only brook trout and longnose dace were sampled. Habitat was typical of small trout streams for Grizzly Bear Creek and Starling Basin. Two pools which appeared to provide excellent habitat for trout in Lafferty Gulch were electrofished, but no fish were observed.

Inventory of Butterflies at Mount Rushmore National Memorial. Northern Great Plains Inventory & Monitoring Coordinator, National Park Service. (Marrone 2004)

Thirty nine-species of butterflies were documented at the Memorial in 2004. No federally listed butterfly "species of concern" were found. No threatened or endangered butterfly species presently listed by the USFWS are known to occur in South Dakota. Three species, Regal Fritillary, Ottoe Skipper, Argos Skipper listed as species of concern are reported for the Black Hills. However, none were found during the 2004 survey. The probability of finding these species is low due to lack of suitable habitat. The greatest diversity (# of species per site) was at the beaver ponds with abundant nectar sources nearby.



3.2.2 Vegetation Resources

Mount Rushmore is located in the Great Plains (grassland) Biome, one of the largest biomes in North America. The vegetation at the Memorial was mapped according to National Vegetation Classification System (NVCS) in 1996-1997 (Salas and Pucherelli 1998). Nine vegetation types were described for the park, including two forest types, four woodland types, two herbaceous types, and one sparsely vegetated type. Two of these types are globally vulnerable or worse: *Paper Birch / Beaked Hazel Forest* and *Ponderosa Pine / Bur Oak Woodland*. The vulnerability of several other types is not certain because their global extent is unknown (Symstad 2004).

Ponderosa pine of varying age is the dominant vegetation type in the Memorial. One stand of old-growth ponderosa pine in the Starling Basin was estimated to be over 200 years old (Hoffman and Hansen 1986) and Symstad (2004) has documented trees over 400 years old.



According to a report by Amy Symstad and Michael Bynum (2005) on the extent and significance of old-growth ponderosa pine forest at Mount Rushmore National Memorial, the stands in Starling Basin are considered an example habitat that is rare in the Black Hills, and a unique and valuable resource. Recent thinning operations elsewhere in the park have reduced the density of young pine stands. The long period of fire suppression in the area has undoubtedly affected the diversity and composition of the vegetation. Figure 2 indicates the area of old growth ponderosa within the boundaries of the Memorial.

According to a Symstad and Bynum's journal article, *Conservation Value of Mount Rushmore National Memorial's Forest* (2007), justifying the maintenance of small natural areas requires understanding their contribution to the conservation of specific natural resources. Because it has been protected from logging since the late 1930s, it may serve as an important part of the Black Hills forest as a whole. To understand this role, they investigated the extent and degree of logging activities in the Memorial and compared the current structure of the Memorial's forest to that in the rest of the Black Hills today and before Euro-American settlement. Their results suggest that approximately 29% of the park has had no tree harvesting activity, 18% of the park has had only selective cutting of trees, and 66% (344 hectares) of the park's area is covered by old-growth forest. Based on current estimates of similar forest in the remainder of the Black Hills, the forest at the Memorial constitutes the second-largest area of old-growth ponderosa pine forest in the Black Hills. Although the current structure of the forest does not appear to be outside the range of natural variability for this ecosystem, some components of the forest are near the edge of this range. Conservation of this important natural resource will most likely require more active management than has, but this management will require careful consideration because of the rarity of this resource in the region.

Additional intermingled trees include Black Hills spruce, quaking aspen, paper birch, burr oak, and Rocky Mountain Juniper. Shrubs and groundcover in the Memorial consist primarily of chokecherry, pin cherry, kinnikinnick, grasses and sedges.

The Nature Conservancy's Black Hills Community Inventory (Marriot et al. 1999) considered all but one of the vegetation types in the park to be in grade "B" condition, the exception being the *Ponderosa Pine / Bearberry Woodland* type which was given a grade of "AB." This generally good condition is reflected in the relatively low amount of invasive species, especially in the non-disturbed sites. Most of the park appears to have been logged prior to its establishment, but perhaps 25% of the park, including portions of the Starling Basin and the Lafferty Gulch area, may be classified as old growth ponderosa pine.

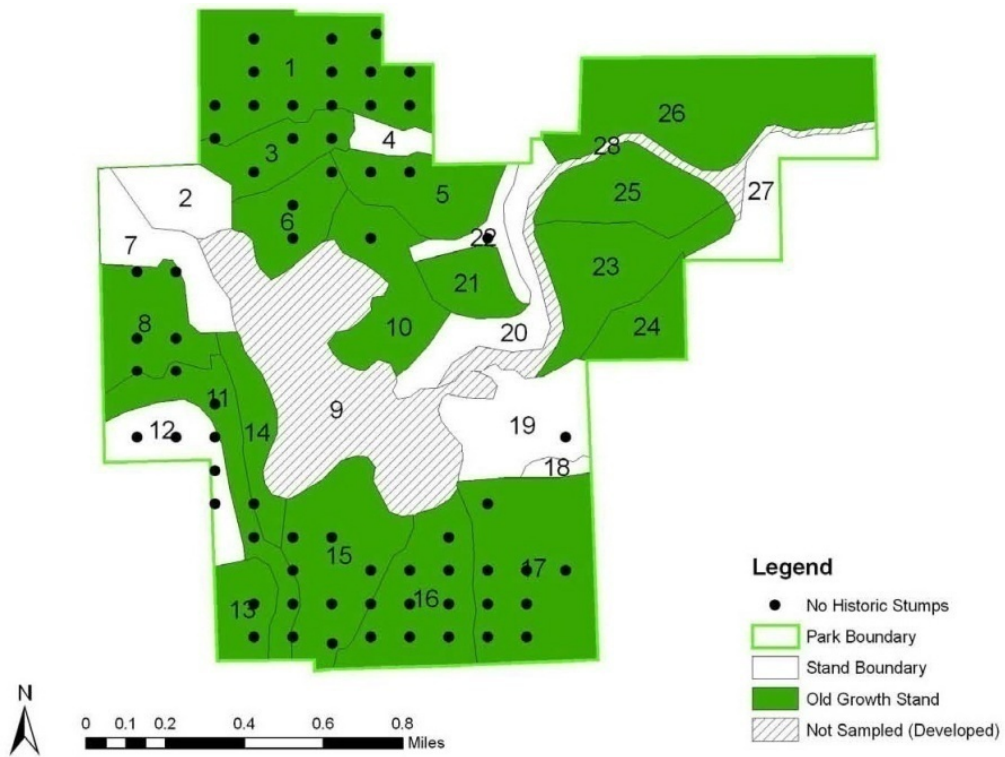


Figure 11. Location of Old Growth Stands within the Memorial Boundaries (Symstad and Bynum, 2005)





A small floristic inventory was conducted on two well-developed areas of riparian vegetation: Lafferty Gulch and Starling Basin (Marriott, H. and C. Meyer 2005). The goal of the 2005 inventory was to expand the list of documented species for the Memorial by collecting voucher specimens. During the inventory, 207 collections were made representing 158 species. Of these, 117 species are newly documented records for the Memorial. Particularly represented are wetland and emergent species, especially the genus *Carex* (15 species newly reported). Six occurrences of species of concern were documented: *Carex leptalea* (bristly stocked sedge) (two occurrences), *Cynoglossum virginianum* var. *boreale* (wild comfrey) (two occurrences), *Cypripedium parviflorum*, (slipper) and *Sorbus scopulina* (Greene's mountain ash). These are tracked by Black Hills National Forest, but only *Cypripedium parviflorum* (slipper) is on the USDA Forest Service Region 2 Sensitive list. None of these species are listed as Threatened or Endangered.

In accordance with the Superintendent's Compendium (2008) specimen collection (taking of plants, fish, wildlife, rocks or minerals) requires a permit issued to an official representative or institution when specimen removal will not adversely affect the Memorial. However, the Superintendent may limit size and quantity of and location where natural products that may be gathered or processed. The Superintendent may also restrict the possession and consumption of those products to the Memorial area.

The *Vital Signs Monitoring Plan* prepared by the Northern Great Plains I&M Network (NPS 2005) indicates that exotic plants are a significant concern to park staff. Although not as pervasive a problem as at other parks, exotic plants are present including noxious ones such as Canada thistle and leafy spurge. Disturbed areas such as roadsides and around developed areas have significant levels of both of those as well as annual brome grasses, houndstongue, mullein, and spotted knapweed. There are about 100 acres of land at the park that were disturbed as the result of development activities. These acres are in need of native plant restoration. The non-native mountain goats are an issue to park staff because their presence conflicts with NPS management policies, and to a lesser extent because they may be having deleterious impacts to park vegetation and can be a safety issue to visitors and vehicle traffic.

3.2.3 Threatened, Endangered and Sensitive Species

There are no known federally listed wildlife species that reside within the Memorial. No critical habitat is known to exist within the Memorial. There are several rare or uncommon species, species of concern or indicator species found or likely to occur within the boundaries. These species include: northern leopard frog, pale milk snake, bristly stocked sedge, wild comfrey, slipper, Greene's mountain ash, northern goshawks, brown creepers, black-backed woodpeckers, pine martins (recently reintroduced), land snail (*Vertigo spp.*), and mountain lion.

3.3 Access to the Backcountry Trail System

3.3.1 Aesthetic, Visual and Recreation

The major resource at the Memorial is the carving itself, carved during the period from 1927 to 1941. The natural setting surrounding the Memorial provides an important part of the aesthetic and visual experience enjoyed by millions of visitors each year. Visitors can enjoy views of rock outcrops, steep canyons, cliff faces, scenic woodlands, old growth ponderosa pine forest, streams, scenic vistas, wild flowers, birds and wildlife.



While the majority of visitation is for purposes of seeing the sculpture and associated visitor facilities, a small amount of rock climbing, nature observation, and hiking currently occurs within the Memorial boundaries.



Sample of the variety of wildflowers found in Starling Basin (NPS).

3.3.2 Visitor Use and Experiences

A Visitor Study conducted in summer 2007 by the University of Idaho (NPS 2007) indicates that the average length of stay for 559 visitor groups interviewed was 3.4 hours. Results indicated that 40% of the visitor groups spent 4 or more hours and 39% spent up to 2 hours visiting the park. According to this study the most common activities were viewing and learning about the Memorial, visiting the information center and bookstore and shopping in the park gift shop (NPS 2007).

Annual visits to the Memorial have averaged around 3 million a year in the last decade with the peak period of visitation from May through September. User groups include general visitor and park neighbors, organized groups, and education groups. The Evening Lighting Ceremony which begins in May and concludes the end of September is very popular and attracts between 2,000 and 3,000 visitors nightly during the summer months.

Other day use activities include hiking, rock climbing, photography and nature observation. The Presidential Trail is a heavily used trail and one of the main activities of visitors to the park. There are several rock climbing areas within the boundaries of the Memorial. A Survey of Rock Climbers at Mount Rushmore National Memorial indicates that climber use days have increased at Mount Rushmore from 350 in 1989 to over 5,600 in 1996. Mount Rushmore tracks the number of climbers through self-registration boxes at 2 locations within the Memorial. Climbing numbers for 2006 (collected by NPS staff) were approaching 3,150 self-registered climbers.

The Visitor Study (NPS, 2007) asked participants if they would use a picnic area or hiking trail. Fifty-eight percent said they would use a picnic area and 50% would use a new, longer trail.

3.3.3 Access Points

There are three main access roads to the Memorial: Highway 16, Highway 16A and Highway 244. Most visitors arrive through Rapid City traveling on Highway 16 and 16A through the town of Keystone to South Dakota Highway 244. According to SD Department of Transportation (2007), the average daily traffic (ADT) for Highway 16 before Keystone is greater than 2,500 vehicles. That average daily count drops to 1,501 – 2500 as it passes the intersection of Highway 40. The section of Highway 244 that meanders through the Memorial averages 551 – 1,500 vehicles per day. This traffic (including those that pass through the Memorial without stopping) contributes to the congestion of the park roads and slows the parking area access and egress (NPS 1980).



Custer - Keystone - Hill City



Figure 12. Traffic Counts near Mount Rushmore National Memorial (SD DOT)



3.3.4 Parking

The existing parking facility at the Memorial is operated by Presidential Parking, Inc. (PPI), a subcontractor to the Mount Rushmore National Memorial Society. There is a \$10.00 Annual Pass for cars and recreational vehicles. This parking fee is valid for the entire calendar year in which it is purchased. National Park Passes, Golden Age, Access and Eagle Passports are not accepted for parking. Bus parking fee is \$50.00 (valid for a period of 24 hours). There are 1,150 parking spaces at this facility. Other parking near the Memorial includes the Profile Parking Lot with 15 spaces. See photos of parking areas in Figures 5-9. The Visitor Study (NPS, 2007) indicated that 80% of visitor groups interviewed rated the parking garage fee appropriate. A total of 626 visitors were interviewed.

3.3.5 Park Operations

The Memorial is open year round, except Christmas Day. Facilities at the Memorial include the Information Center, the Lincoln Borglum Museum and Visitors Center, two movie theatres, an amphitheatre, Avenue of Flags, Viewing Terrace, the historic Sculptor's Studio, the 0.6 mile Presidential Trail, Restaurant and Gift Shop Concession buildings, administration building and parking facilities. See Figure 5. All of the existing facilities at the Memorial can be accessed by the mobility impaired. The films are provided with closed captioning. Park brochures are available by request in Braille and large print.

There are currently 50 permanent NPS staff at the Memorial, which includes administrative, law enforcement, maintenance, and interpretive staff. Xanterra, a private concessionaire, provides retail support services to the Memorial (restaurant, snack bar, gift shop) and employees 32 full-time staff and approximately 200 seasonal employees. Parking at the Memorial is owned and operated by the Mount Rushmore National Memorial Society (MRNMS) and employs 17 full-time staff. As a 501(c)3 non-profit organization, the MRNMS and the Mount Rushmore History Association support and assist the NPS with educational, historical, interpretive activities at the Memorial to enhance the visitor experience.

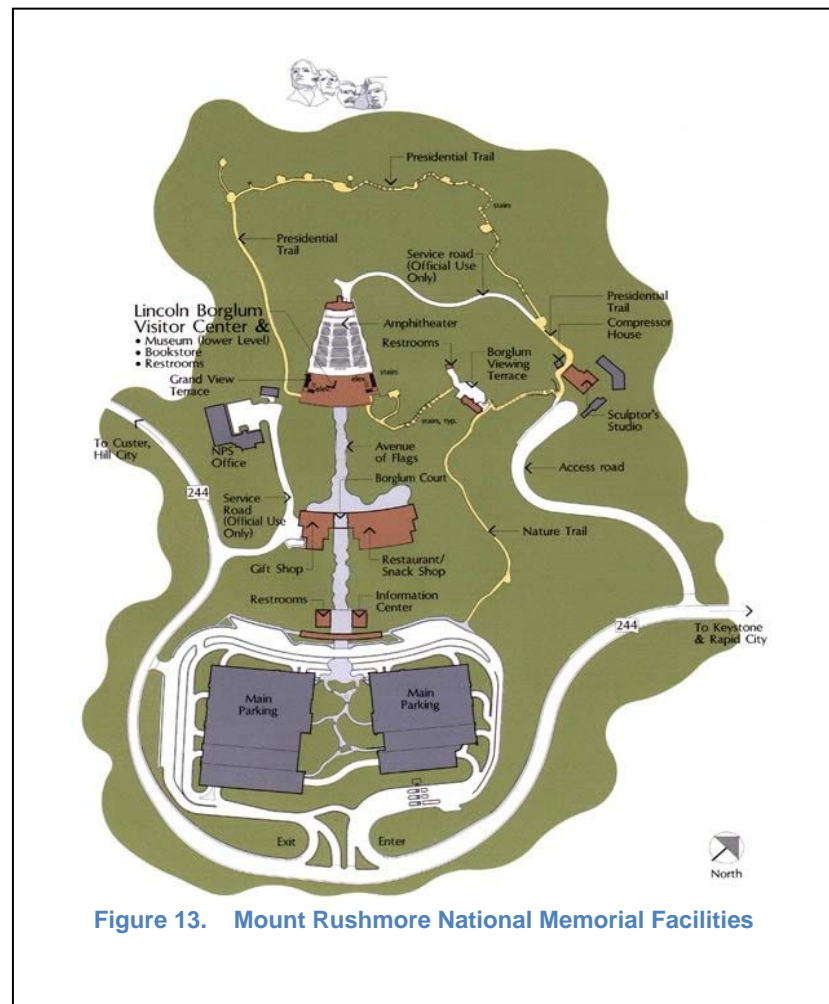


Figure 13. Mount Rushmore National Memorial Facilities



South Dakota possesses a multi-faceted visitor market. The Memorial is located in the Black Hills, Badlands and Lakes Region (Region 4) for regional statistical comparisons by the South Dakota Office of Tourism. This Region is made up of the traditional Black Hills counties as well as other western counties that benefit from national forests, parks, monuments and other destination points in the area. Region 4 has historically been the dominant vacation area from an economic perspective (Madden 2008). Region 4 had an expenditure volume of \$552 million in 2007 which equates to 58.7% of the market share for the four regions. The region experienced annual growth of 8.5 percent in 2007, about the same as the state as a whole. However, as has been the case since 2004, much of the increased overall spending by visitors in 2007 is traced to increased fuel costs.

The Chamber of Commerce for Keystone has developed a new marketing campaign to entice more visitors to explore their community on their way to Mount Rushmore and to discover the town's riches. Keystone would also like to see people stay longer when they visit. They have branded a new name, "Keystone – Home of Mount Rushmore – City of Gold," to reflect the rich history of mining in the early days (Rapid City Journal, May 3, 2008).

3.4 Security and Safety

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. The primary constraint imposed by the Organic Act is that discretionary management activities may be undertaken only to the extent that they will not impair park resources and values.

3.4.1 Security

NPS law enforcement rangers are responsible for patrolling the Memorial property, including the existing backcountry areas, which is the area for the proposed trail project. In carrying out the law enforcement program, the NPS will make reasonable efforts to protect the natural and cultural resources entrusted to its care and to provide for the protection, safety and security of park visitors, employees, concessioners, and public and private property (NPS 2006). The Superintendent's Compendium (2008) states that the area around the base of Mount Rushmore and the surrounding area is "off limits" to all public access. Climbing of Mount Rushmore is prohibited.

3.4.2 Personal Safety

The NPS (2006) recognizes that the park resources it protects are not only visitor attractions, but that they may also be potentially hazardous. In addition, the recreational activities of some visitors may be of especially high-risk, high-adventure types, which pose a significant personal risk to participants and which the Service cannot totally control. Park management policies do not impose park-specific visitor safety prescriptions. The means by which public safety concerns are to be addressed is left to the discretion of superintendents and other decision-makers at the park level who must work within the limits of funding and staffing.

The existing Blackberry Trail that connects to the Black Hills National Forest Centennial Trail, contains some segments that are eroded due to equestrian traffic and pose some safety hazards to backcountry users. Other health and safety issues relating to backcountry use include getting lost or injured from hiking and rock climbing.



3.5 Cultural Resources

3.5.1 Cultural Resources

The Department of Anthropology and Sociology, University of South Dakota (Molyneaux 2007) conducted a Class III intensive cultural resource survey of a proposed recreational corridor in Mount Rushmore National Memorial, in Pennington County, South Dakota, from August to September 2006. The project was conducted at the request of the Superintendent, Mr. Gerard Baker; Mr. Bruce Weisman, Curator, managed the project. This project was Phase 1 of a multi-year park-wide cultural resources survey. The purpose of the trail corridor survey was to locate, record, and evaluate all cultural resources within the inventory areas in compliance with Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended, and to provide data for National Park Service (NPS) management planning purposes.

The field survey covered a proposed recreational trail network extending away from the Mt. Rushmore complex to the boundaries of the Memorial. The survey covered 7.2 miles in a corridor 30 meters wide. This constitutes a survey area of 86 acres. The crew also surveyed the margins of this corridor to accommodate any route changes necessitated by the discovery of archaeological sites or other factors. Ground surface exposure was generally good (approximately 40% - 60%), as the trail route either followed established or informal trails, open pine forest with abundant slope erosion, or, in the relatively uncommon areas of more level ground, small drainages with exposed banks.

The surveyors examined two sites recorded previously and a number of cultural features. They identified 45 other cultural finds or features: All finds and features are of Euroamerican origin and relate to several historic episodes in the history of the area: 1) 19th and 20th century resource exploitation (including prospecting and logging); 2) the development of Mount Rushmore National Memorial between the late 1920s and the mid-1940s; 3) mining and prospecting, as part of the war effort (WWII); 4) post-WWII alterations in Memorial buildings and infrastructure; and 5) recent recreational activity.

3.5.2 Native American Religious Concerns

The American Indian Religious Freedom Act (42 USC 1996) states that

Henceforth it shall be the policy of the United States to protect and preserve for American Indians their inherent right to freedom to believe, express, and exercise the traditional religions of the American Indians, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

In accordance with Management Policies (2006), NPS will pursue an open, collaborative relationship with American Indian tribes to help tribes maintain their cultural and spiritual practices and enhance the Park Service's understanding of the history and significance of sites and resources in the parks. Within the constraints of legal authority and its duty to protect park resources, the Service will work with tribal governments to provide access to park resources and places that are essential for the continuation of traditional practices.

The Black Hills are traditional hunting and gathering grounds for American Indians. The natural and cultural resources of this area make up the sacred land identified by the Lakota as their ancestral home.



Mount Rushmore continues to be a gathering place for natural products (plants) by American Indians.

3.5.3 Paleontology Resources

Mount Rushmore National Memorial is carved in the granite core of the Black Hills. There are no caves in the Memorial, however there is a ring of limestone around the Black Hills. This limestone layer was laid down at the bottom of an inland arm of the sea that covered the area around the Black Hills spreading east during the Cretaceous Era, 65 million years ago.

(www.nps.gov/moru/)

3.6 Other Resources

3.6.1 Climate and Air Quality

The area is characterized by generally warm to hot during the summer to cold punctuated with occasional milder weather during the winter. Average summer temperatures are 17 degrees C (62 degrees F) and may reach temperatures of over 38 degrees C (100 degrees F). Average winter temperatures are about -5 degrees C (25 degrees F) but may reach temperatures as low as -42 degrees C (-43 degrees F). Total annual precipitation is about 46 cm (18 inches) with most of that falling between April and September. Average snowfall is about 114 cm (45 inches) (Ensz 1990).

Under the terms of the 1990 Clean Air Act amendments, the Memorial is designated as a Class II quality area. By definition, Class II areas of the country are set aside under the Clean Air Act, but identified for somewhat less stringent protection from air pollution damage than Class I areas. The primary means by which the protection and enhancement of air quality is accomplished is through implementation of National Ambient Air Quality Standards (NAAQS). These standards address six pollutants known to harm human health including ozone, carbon monoxide, particulate matter, sulfur dioxide, lead, and nitrogen oxides (USDA 2000).

Historically, air quality at the Memorial has been considered excellent. However, air quality is a concern to park staff in large part because it could affect visibility of the monument. Western energy development may degrade views and air quality in the region. However, results from an air quality study conducted for the Northern Great Plains Network Parks (Pohlman and Maniero 2005) indicated the Memorial has a low risk of foliar ozone injury to plants. This is due to low levels of ozone exposure and relatively dry soil moisture conditions. However, if the level of risk increases in the future, a program to assess the incidence of foliar ozone injury on plants at the site could use one or more of the following bioindicator species: spreading dogbane, ponderosa pine, quaking aspen, and common snowberry.

3.6.2 Soils, Geology, and Minerals

The soils in and around the Memorial are made up of two different types. These are the Pactola-Rock Outcrop and Buska-Mocmont-Rock Outcrop. The Pactola-Rock Outcrop soil type is found in the northern portion and the Buska-Mocmont-Rock Outcrop is in the southern portion. They are both well drained, gently sloping to very steep, loamy soils. Pactola-Rock Outcrop is formed in material weathered from steeply tilted metamorphic rock. Buska-Mocmont-Rock Outcrop is formed in material weathered from micaceous schist and granite (Ensz 1990). Because of the slow breakdown of quartz and the large granite crystals the soils tend to be thin (Froiland 1990).



The geological resources at the Memorial are primarily granite and metamorphic rock in origin. The Memorial lies within the Central Crystalline Area of the Black Hills. This is the main core or central mass of the Black Hills. All of this area is composed of a variety of Pre-Cambrian igneous and sedimentary rocks (schist, slates, quartzite) in different stages of metamorphosis, together with granite and pegmatite (Froiland 1990). The Memorial is located along the northeast edge of what is known as the Harney Peak Granite Batholith; this is what the monument is carved in. Granite and quartzite form the mountains and ridges, while the softer mica schist tends to be eroded into canyons and gullies.

3.6.3 Historic Structures

The term “historic structures” refers to both historic and prehistoric structures, which are defined as constructions that shelter any form of human habitation or activity. The major resource at the Memorial is the sculpture itself carved between 1927 and 1941. The entire Memorial is on the National Register of Historic Places (NPS 1980).

3.6.4 Environmental Justice

Environmental Justice issues involve federal actions that disproportionately affect minorities or low income groups. There are no known issues relating to environmental justice associated with this project.

3.6.5 Noise

NPS Management Policies (2006) state that Park managers will (1) identify what levels and types of sounds contribute to or hinder visitor enjoyment, and (2) monitor, in and adjacent to parks, noise-generating human activities—including noise caused by mechanical or electronic devices—that adversely affect visitor opportunities to enjoy park soundscapes. Based on this information, the Service will take action to prevent or minimize those noises that adversely affect the visitor experience or that exceed levels that are acceptable to or appropriate for visitor uses of parks.

Ambient noise levels within the Memorial generally originate from vehicles and occasional aircraft and air tours. In accordance with the National Parks Air Tour Management Act and Title 14, Code of Federal Regulations, Part 136, the annual air tour operations over and within ½ mile outside the boundary of the Memorial are currently capped at the number of operations reported in the operator’s application, unless authorized by the Federal Aviation Administration (FAA) and NPS, or until the Air Tour Management Plan is implemented. The FAA Rapid City Flight Standards District Office has developed an Air Tour Operations Plan regarding the conduct of air tour operations over and within the vicinity of Mount Rushmore National Memorial. Approved air tour routes circle within the southeast portion of the park and then continue outside of the park to the northeast. There are currently two existing commercial air tour operators who provide commercial air tours over and within ½ mile outside the boundary of the Memorial. Approximately 5, 563 commercial air tour operations are authorized per year (US DOT 2004).

3.6.6 Hazardous or Solid Waste

No known solid or hazardous waste issues have been identified with the proposed project.



3.6.7 Land Use/Land Cover

The Memorial encompasses 1,278 acres. Land affected by the proposed project lies completely within the Memorial boundaries and is currently used for activities related to the management purposes of the Park.

Land cover for the Memorial is 86% Forest mostly ponderosa pine, 2% Marsh/Moist Soils, 9% Barren, 5% Administrative Area. The Memorial has 0.01 miles of perennial stream within the boundaries and contains 2 wetland areas: Starling Basin and Lafferty Gulch (NPS 2005).



4.0 ANTICIPATED ENVIRONMENTAL CONSEQUENCES

This chapter analyzes the potential environmental consequences, effects or impacts that would occur to resources as a result of implementing one of the alternatives. The relevant resources align with the issues, which were identified by the IDT, as shown in Table 2.

Table 2. Issues and Relevant Resources Alignment

Number	Issue	Relevant Resource
1	Erosion of Trails near Water Resources	Water Resources
2	Disturbance to the Ecological and Wildlife Resources	Ecological and Wildlife Resources
3	Accessing the Backcountry Trail System	Backcountry Trail Use and Access
4	Securing the Memorial and Providing for Personal Safety	Security and Safety
5	Protecting Cultural Resources	Cultural Resources

Direct, indirect, and cumulative effects, are analyzed for each relevant resource carried forward from Chapter 3 and are described, as follows:

- *Direct*: An effect that is caused by an action and occurs in the same time and place.
- *Indirect*: An effect that is caused by an action but is later in time or farther removed in distance, but is still reasonably foreseeable.
- *Cumulative*: The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

Potential impacts are described in terms of type, context, duration, and intensity. General definitions are defined as follows, where applicable more specific impact thresholds are given for each resource at the beginning of each resource section.

- **Type** describes the classification of the impact as either beneficial or adverse:
 - *Beneficial*: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
 - *Adverse*: A change that moves the resource away from a desired condition or detracts from its appearance or condition.
- **Context** describes the area or location in which the impact will occur.
- **Duration** describes the length of time an effect will occur, either short-term or long-term:



- *Short-term* impacts generally last only during construction, and the resources resume their pre-construction conditions following construction.
- *Long-term* impacts last beyond the construction period, and the resources may not resume their pre-construction conditions for a longer period of time following construction.

4.1 Impacts of Alternative 1 (No Action Alternative)

Under the No Action Alternative, the existing trails (including the informal/social trails) would continue to be available for visitor use. According to the Black Hills National Forest (BHNF, 2006), an estimated 1,500 visitors per year use existing trails, based on seismic trail counters. Most of this use, based on field observations and interviews, has been stock use.

Rehabilitation and potential rerouting of Blackberry Trail is proposed under this alternative based on the deteriorating condition of this trail. The Blackberry Trail connects to the Centennial Trail (BHNF) near the southern boundary of the Memorial. This is the only area within the Memorial that has allowed horses or pack animals in the past (NPS, 2008).

4.1.1 Water Resources

A. Direct and Indirect Impacts

Existing trails within the Memorial, formal and informal, cross some of the streams, particularly Starling Creek. Portions of the trail also cross wetlands in Starling Basin. In most areas there are no structures to keep visitors out of the water, which causes localized disturbance in the stream at that location.

Horse traffic on the Blackberry Trail, causes erosion and sediment is carried in the runoff impacts to the streams. Rehabilitation and rerouting of the Blackberry Trail would mitigate those impacts.

B. Cumulative Impacts

Over time the continuous addition of sediment could change the nature of the stream in a localized area.

C. Other

The impacts would be considered adverse, in comparison to no activity in and around the streams and wetlands. The effect would be long-term.

4.1.2 Ecological and Wildlife Resources

A. Direct and Indirect Impacts

Visitors exploring the Memorial have created informal trails throughout the area, in some cases where there are sensitive species and old growth forests. Human interaction in these areas may affect the nature and quality of ecological and ecological resources.



B. Cumulative Impacts

Prolonged hiking, gathering and other uses in areas not designated as formal trails by the Memorial may alter the diversity of sensitive and other species within the area, and introduce invasive species.

C. Other

The impacts would be considered adverse, in comparison to no activity in areas, which are not designated as a formal trail. The effect would be long-term and, depending on the nature of the impact, could be irreversible.

4.1.3 Backcountry Trail Use and Access

A. Direct and Indirect Impacts

Limited access to the backcountry by visitors would continue under the No Action Alternative. Experienced individuals with backcountry experience have the ability to find the informal trails and access the area. Those with less experience, including multi-generational populations would have less access to the back-country areas of the Memorial. No educational programs would be designed for the backcountry and its diverse ecological, cultural and wildlife resources.

B. Cumulative Impacts

No cumulative impact would be anticipated.

C. Other

No additional trails and accompanying interpretive programs would adversely affect the ability of the Memorial to achieve its Centennial Vision.

4.1.4 Security and Safety

A. Direct and Indirect Impacts

No changes in standard operating security procedures would be anticipated with the No Action Alternative, which includes the rehabilitation and possible rerouting of the Blackberry Trail.

According to the NPS Management Policies, visitors must assume a substantial degree of risk and responsibility for their own safety when visiting areas that are managed and maintained as natural, cultural, or recreational environments. The improvements on the Blackberry Trail would improve the current condition of the trail and reduce the possible risk of injury.

B. Cumulative Impacts

No cumulative effect would be expected.

C. Other

Neither a beneficial nor adverse impact would be anticipated with the No Action Alternative.



4.1.5 Cultural Resources

A. Direct and Indirect Impacts

No changes to the current practice of employing the most effective concepts, techniques, and equipment to protect cultural resources against theft, fire, vandalism, overuse, deterioration, environmental impacts, and other threats without compromising the integrity of the resources would be expected.

B. Cumulative Impacts

No cumulative impacts would be expected.

C. Other

Neither a beneficial nor adverse impact would be anticipated with the No Action Alternative.

4.2 Impacts of Alternative 2 (Single Loop Trail)

In accordance with NPS Management Policies, the backcountry single loop trail system would offer visitors a primitive outdoor experience. The trails would be designed and managed to reduce conflicts with automobiles and incompatible uses; allow for a satisfying park experience; allow accessibility by the greatest number of people; and protect park resources.

4.2.1 Water Resources

A. Direct and Indirect Impacts

The conceptual location of the single loop trail would follow some of the waterways and adjacent wetlands area in the Memorial. Possible pathways of adverse impact to water resources have been identified as follows:

- Soil erosion
- Water/wetland disturbance
- Sediment in water from foot/horse traffic
- Increased surface water runoff from the new trails system

With proper mitigation incorporated in the design and construction of the trail, including boardwalks, elevated walkways and bridges over water resources, the trail would have limited impact on water resources. In several areas the impact would be beneficial when compared to existing trail conditions.

As part of the NPS's efforts to improve park management, the Northern Great Plains Network (NGPN) Inventory and Monitoring (I&M) Program provides inventory of natural resources under the Memorial's stewardship to determine their nature and status. The I&M Program provides funding, guidance and technical assistance to complete a set of 12 baseline natural resources inventories for parks. These inventories serve as the baseline for establishing long-term ecological monitoring known as "Vital Signs Monitoring." A Vital Signs Monitoring Program was completed at the Memorial



in 2005. This program and the Memorial's Resource Management Division will likely continue to monitor water and vegetation in the park, as well as other resources.

B. Cumulative Impacts

Continued use of the trail without mitigating construction and maintenance features on the trail would possibly lead to an on-going cumulative effect causing the deterioration of water resources.

Measures to mitigate sources of erosion and other water/wetland disturbance would reduce existing impact to water resources. The Memorial will likely monitor water resources as part of its Resource Management Division and the NGPN I&M Vital Signs Monitoring Program.

C. Other

According to Management Policies (2006) NPS will protect watershed and stream features primarily by avoiding impacts on watershed and riparian vegetation and by allowing natural fluvial processes to proceed unimpeded. When conflicts between infrastructure (such as bridges and pipeline crossings) and stream processes are unavoidable, NPS managers will first consider relocating or redesigning facilities rather than manipulating streams. Where stream manipulation is unavoidable, managers will use techniques that are visually non-obtrusive and that protect natural processes to the greatest extent practicable.

Any possible adverse impacts would be short-term in nature. To the greatest degree possible and in accordance with NPS Management Policies, wetlands will generally be avoided during construction of the trail.

The long-term impact would be beneficial, using trail construction features, such as a boardwalk or other means, which would not disturb hydrologic or ecological processes. Additionally, elevated walkways would remove visitor traffic from a close proximity to water resources, yet allow access to the areas. Additional run-off from the trail would be mitigated through sustainable design and siting of the trail to avoid resource damage.

4.2.2 Ecological and Wildlife Resources

A. Direct and Indirect Impacts

The Starling Basin area contains both wetlands and old growth pine forest, which provide a diverse species habitat that should be protected. Sustainable design and proper siting of the trail would maintain the characteristics of the forest that make it an excellent habitat for diverse species as well as to maintain the relatively "backcountry feel" appreciated by visitors. Protecting the integrity of the wetland and the old growth ponderosa pine is a priority for park staff (NPS 2005) as they provide a diverse and abundant habitat for many species of mammals, invertebrates, reptiles, amphibians, vegetation, and birds.

The impacts to ecological and wildlife resources would be beneficial and measures may be taken to minimize any adverse impact. Beneficial impacts would include:

- Increase in interpretive and education opportunities
- Increased access for bird watching and nature observation groups
- Increased awareness of nature
- Increased awareness of cultural plants

Adverse impacts would include:



- Introduction of exotic species
- Damage to sensitive plants species by trampling
- Damage from over-harvesting of plants
- Non-permitted harvesting of plants
- Disturbance to wildlife and their habitats
- Vandalism to trees/rocks/trail
- Increased maintenance with rockslides and removal of hazardous trees
- Increased fire risks
- Increased potential for release of pets into the backcountry

Studies have shown that the diversity and abundance of non-native plant species is greater along trail edges than away from trails (Patel and Rapport 2000). Weedy plants (both native and non-native) are more abundant along trails. Trails can change water flow patterns, leading to erosion problems. Depending on the frequency of use, trails can also affect bird communities (Miller, et.al, 1998).

Exotic plants, including noxious ones such as Canada thistle and leafy spurge, are a significant concern to park staff. Disturbed areas such as roadsides and around developed areas have significant levels of both of those as well as annual brome grasses, houndstongue, mullien, and spotted knapweed.

Any adverse impacts would be mitigated through a combination of education, trail design and maintenance in the management of potential exotic species and noxious weeds. The Memorial would establish clear policies with regard to the inadvertent introduction of exotic species, harvesting, pets, prevention of fire and the importance of keeping on the trail. The design would maximize the views and access to unique areas of interest along the trail, encouraging visitors to remain on the trail for the protection of the ecological and wildlife resources. Park staff and volunteers would implement an aggressive program to monitor for and remove exotic species and noxious weeds within the Memorial and particularly along the trail. The Memorial will likely monitor vegetation and wildlife under its Resource Management Division and the NGPN I&M Vital Signs Monitoring Program. The Memorial is encouraged to conduct annual early-spring northern goshawk surveys to determine if any of these rare birds are nesting in the vicinity of the trails. If so, visitor patterns could and should be altered to avoid disturbing the birds during the sensitive early nesting season. (NPS Midwest Region, 2008)

B. Cumulative Impacts

The cumulative effects of the single loop alternative would extend the direct and indirect impacts, discussed in the previous section. The beneficial impacts would include an interpretive and educational component to the Memorial's program, which would enhance the visitor experience. The potential adverse impacts could become a concern to the ecological health of the Memorial without the proper mitigation measures.

The number of visitors to the trail may have an impact on wildlife patterns within the Memorial. This would include possible increases in mountain lion and human contacts. In order to mitigate any adverse impacts the Memorial would monitor species and wildlife population for number and diversity to ensure continued health of the Memorial's ecology. The Memorial will likely monitor vegetation under its Resource Management Division and the NGPN I&M Vital Signs Monitoring Program.



C. Other

Construction of the trail poses possible short-term impacts to the Memorial's ecological and wildlife resources. These impacts would be mitigated with the use of hand tools during construction, where possible. Other precautions would be taken to minimize any disturbance to the area.

Beneficial long-term impacts would be the educational and interpretive benefits derived from the use of the trail.

4.2.3 Backcountry Trail Use and Access

A broad spectrum of elements define the backcountry trail experience, including the aesthetic, visual and recreational visitor use opportunities, the number and location of access points, parking availability and overall park operations. The single loop trail is 4.3 miles with connector trails and the existing President's Trail for a total of 6.7 miles.

A. Direct and Indirect Impacts

The direct and indirect effects of the single loop alternative would assist the Memorial in achieving its Centennial Vision goals, seeking to become a center of excellence for sharing the story of America and providing visitor opportunities. Beneficial effects of the proposed trail would include;

- Increase in recreational and interpretive opportunities at Memorial
- Increase in local retail, hotel and camping bookings ,especially in Keystone
- Increase in state and national tourism
- Decrease in social trails with a designated trail
- Increased use of trails by other organizations/businesses
- Economic impact on PPI due to increased trail users
- Increase in maintenance from additional users
- Increase in food, water and other sales within the Memorial
- Increase in opportunities and permits issued for commercial guides and outfitters

Potential adverse impacts would include:

- Increase in traffic on 244 and 16A
- Increase in pedestrian crossings
- Increase in traffic and parking in Keystone
- Traffic and privacy issues with residents of Lafferty Gulch Road
- Increase in parking numbers/needs, particularly in PPI
- Abuse of overnight parking
- Increase in housing needs for trail volunteers
- Increase in use of USFS Wrinkled Rock parking area

The adverse impacts can be mitigated through coordination with agencies and partners, including the South Dakota Department of Transportation (DOT), USFS, MRNMS, the City of Keystone and neighbors in the vicinity of the Memorial. Anticipating and planning for each of these adverse effects would help to mitigate the impact to the entity involved in each area.

Additional impact would be anticipated with PPI in the single loop alternative, since no additional parking for trail use only is provided. Visitors to the trail would in all likelihood have a longer stay in



the Memorial than the average visitor and would increase demand for parking in the PPI. In cooperation with MRNMS the Memorial would implement an on-going monitoring program to determine the length of stay and number of visitors who use the trail.

Similarly, the potential of additional parking in the Wrinkled Rock area would pose possible problems for USFS. The Memorial would implement a monitoring program to count the number of cars and length of stay for visitors using the trail near the Wrinkled Rock area and increase patrol of that area.

B. Cumulative Impacts

The cumulative impacts would include a long-term effect of many of the direct and indirect benefits, including the benefits to visitors and to communities and the state, which would economically benefit from the increase in visitors and their length of stay. One possible benefit would be increased activity during the shoulder seasons. These cumulative impacts would have potential impacts on parking and the need for additional staff with the Memorial, the concessionaire and in the private sector.

With access to new designated trail areas in the Memorial there is a potential for new or additional user group conflicts, such as rock climbers in the Wrinkled Rock area, hikers, equestrian users and mountain bikers, particularly as they interface with other parks or areas of the USFS in the region. On-going coordination with these agencies and groups would be an important measure to mitigate potential conflicts.

C. Other

There would be no other impacts. All effects of the proposed alternative would be long-term in nature and would be managed as an integral part of park operations.

4.2.4 Security and Safety

A. Direct and Indirect Impacts

The security of the Memorial would not be adversely impacted due to the fact that the trail system will not place individuals any closer to Mount Rushmore than currently exists. Direct impacts on issues of personal safety are a function of the increased number of users on the trail system.

In order for the Single Loop Trail to encircle the Memorial, two pedestrian crossings would be constructed at the west and east ends of the park as well as a Trailhead at Lot 7, which is south of the existing PPI parking lot. Potential adverse impacts include:

- Increase in vandalism in backcountry areas
- Increase in souvenir collectors
- Increased exposure to housing area
- Need for increased foot patrols for backcountry areas (also during special events)
- Increase in search and rescue incidents from loss and injury

In order to mitigate these impacts, additional law enforcement rangers would be added to the staffing that patrols the Memorial, including the backcountry areas and the proposed trail. Visitors must assume a substantial degree of risk and responsibility for their own safety when hiking the backcountry trails and scenic vistas.



Yellow Wolf Trail Environmental Assessment

At the crossings on Highway 244 and 16A speed limits would need to be reduced and additional signs to alert drivers would be installed. Law enforcement will likely need to patrol more for speed violations in these areas.

B. Cumulative Impacts

The cumulative impacts would include increased exposure for visitors to West Nile and Lyme's Disease. These potential hazards would be mitigated through education for the visitors on what to expect and how to prevent accidental exposure when using the trail.

C. Other

Any personal safety impacts due to the increased access to the backcountry areas of the Memorial would be mitigated by posting emergency information at each trailhead; including rules and regulation and providing brochures with emergency information, visitor expectations and warnings.

4.2.5 Cultural Resources

A. Direct and Indirect Impacts

There would be several beneficial impacts with the cultural resources at the Memorial, including:

- Increase in interpretive and education opportunities
- Increase in volunteer opportunities
- Opportunities for ethnography (connection to place)
- Professional development, career development, diversity of duties for NPS and other staff
- Increased access for Tribes and other groups (ceremonial, plant harvesting)
- Increased opportunities for partnerships with educational institutions

The only potential adverse impacts to the cultural resources would be an increase in souvenir collection within the Memorial. This would be mitigated by employing the most effective concepts, techniques, and equipment to protect cultural resources against theft, fire, vandalism, overuse, deterioration, environmental impacts, and other threats without compromising the integrity of the resources.

B. Cumulative Impacts

The beneficial cumulative impact would be the easier access throughout the Memorial, which may promote additional scientific and cultural research opportunities. As additional knowledge and opportunity becomes available, there is the potential to have increased disputes over the cultural significance of some of the resources. These disagreements would be mitigated by anticipating possible disagreements and develop policies in consultation with interested groups.

C. Other

As the final design and routing of the single loop alternative trail is variable within the surveyed corridor, no previously recorded archaeological sites or features noted during the trail corridor survey will be impacted by any proposed construction. Given these survey results and the potential for avoidance of cultural resources in the final routing of the trail, and mindful of the potential for the inadvertent discovery of buried cultural material, the proposed alternatives would not impact any known cultural resources. (Molyneaux 2007).



Should any cultural resources be uncovered during trail construction, the contractor or trail project manager would contact the NPS Curator immediately, who would contact the South Dakota State Historic Preservation Office (SHPO). It would be the responsibility of the contractor to protect archaeological resources from disturbance until a professional examination takes place or until a responsible authority authorizes clearance to proceed. According to a memorandum from the Midwest Regional Director (11/17/2008), the discussion of the contractor's responsibilities if any cultural material is discovered during construction of the trail is sufficient and they do not believe that there will be any adverse impacts to currently identified resources.

4.3 Impacts of Alternative 3 (Multi-Loop Trail)

4.3.1 Water Resources

A. Direct and Indirect Impacts

The conceptual location of the multi-loop trail follows some of the waterways and adjacent wetlands area in the Memorial. Possible pathways of adverse impact to water resources have been identified as follows:

- Soil erosion
- Water/wetland disturbance
- Sediment in water from foot/horse traffic
- Increased surface water runoff from the new trails system, trailheads and parking areas

With proper mitigation incorporated in the design and construction of the trail, including boardwalks, elevated walkways and bridges over water resources, the trail would have limited impact on water resources. In several areas the impact would be beneficial when compared to existing trail conditions.

The Northern Great Plains I&M Network of the NPS is in the planning phase of a long-term program to monitor the health of park ecosystems. This plan will provide background information on park aquatic resources, stressors to those resources, current monitoring efforts, a list of potential indicators and the reason for choosing such indicators, the protocols to be used in monitoring, threshold or trigger levels, and potential management responses.

B. Cumulative Impacts

Continued use of the trail without mitigating construction and maintenance features on the trail would possibly lead to an on-going cumulative effect causing the deterioration of water resources. Measures to mitigate sources of erosion and other water/wetland disturbance would reduce existing impact to water resources. The Memorial will likely monitor water at the Park under its Resource Management Division and the I&M Vital Signs Monitoring Program.

C. Other

According to Management Policies (2006) NPS will protect watershed and stream features primarily by avoiding impacts on watershed and riparian vegetation and by allowing natural fluvial processes to proceed unimpeded. When conflicts between infrastructure (such as bridges and pipeline crossings) and stream processes are unavoidable, NPS managers will first consider relocating or redesigning facilities rather than manipulating streams. Where stream manipulation is unavoidable,



managers will use techniques that are visually non-obtrusive and that protect natural processes to the greatest extent practicable.

Any possible adverse impacts would be short-term in nature. To the greatest degree possible and in accordance with NPS Management Policies, wetlands will generally be avoided during construction of the trail.

The long-term impact would be beneficial, using trail construction features, such as a boardwalk or other means, which would not disturb hydrologic or ecological processes. Additionally, elevated walkways would remove visitor traffic from a close proximity to water resources, yet allow access to the areas. Additional run-off from the trail would be mitigated through sustainable design and siting of the trail to avoid resource damage.

4.3.2 Ecological and Wildlife Resource

A. Direct and Indirect Impacts

The Starling Basin area contains both wetlands and old growth pine forest, which provide a diverse species habitat that should be protected. Sustainable design and proper siting of the trail would maintain the characteristics of the forest that make it an excellent habitat for diverse species as well as to maintain the relatively “backcountry feel” appreciated by visitors. Protecting the integrity of the wetlands and the old growth ponderosa pine is a priority for park staff (NPS,2005) as they provide a diverse and abundant habitat for many species of mammals, invertebrates, reptiles, amphibians, vegetation, and birds.

The impacts to ecological and wildlife resources would be beneficial and measures may be taken to minimize any adverse impact. Beneficial impacts would include:

- Increase in interpretive and education opportunities
- Increased access for bird watching and nature observation groups
- Increased awareness of nature
- Increased awareness of cultural plants

Adverse impacts would include:

- Introduction of exotic species
- Damage to sensitive plants species by trampling
- Damage from over-harvesting of plants
- Non-permitted harvesting of plants
- Disturbance to wildlife and their habitats
- Vandalism to trees/rocks/trail
- Increased maintenance with rockslides and removal of hazardous trees
- Increased fire risks
- Increased potential for release of pets into the backcountry

Studies have shown that the diversity and abundance of non-native plant species is greater along trail edges than away from trails (Patel and Rapport 2000). Weedy plants (both native and non-native) are more abundant along trails. Trails can change water flow patterns, leading to erosion problems. Depending on the frequency of use, trails can also affect bird communities (Miller, et.al, 1998).



Exotic plants, including noxious ones such as Canada thistle and leafy spurge, are a significant concern to park staff. Disturbed areas such as roadsides and around developed areas have significant levels of both of those as well as annual brome grasses, houndstongue, mullien, and spotted knapweed.

Any adverse impacts would be mitigated through a combination of education, trail design and an aggressive maintenance in the management of potential exotic species and noxious weeds. The Memorial would establish clear policies with regard to the inadvertent introduction of exotic species, harvesting, pets, prevention of fire and the importance of keeping on the trail. The design would maximize the views and access to unique areas of interest along the trail, encouraging visitors to remain on the trail for the protection of the ecological and wildlife resources. Park staff and volunteers would implement an aggressive program to monitor for and remove exotic species and noxious weeds within the Memorial and particularly along the trail. The Memorial will likely monitor vegetation at the park through its Resource Management Division and the I&M Vital Signs Monitoring Program.

B. Cumulative Impacts

The cumulative effects of the multi-loop alternative would extend the direct and indirect impacts, discussed in the previous section. The beneficial impacts would include an interpretive and educational component to the Memorial's program, which would enhance the visitor experience. The potential adverse impacts could become a concern to the ecological health of the Memorial without the proper mitigation measures.

The number of visitors to the trail may have an impact on wildlife patterns within the Memorial. This would include possible increases in mountain lion and human contacts. In order to mitigate any adverse impacts the Memorial would likely monitor species and wildlife population for number and diversity to ensure continued health of the Memorial's ecology, through its Resource Management Division and the NGPN I&M Vital Signs Monitoring Program.

C. Other

Construction of the trail poses possible short-term impacts to the Memorial's ecological and wildlife resources. These impacts would be mitigated with the use of hand tools during construction, where possible. Other precautions would be taken to minimize any disturbance to the area.

Beneficial long-term impacts would be the educational and interpretive benefits derived from the use of the trail.

4.3.3 Backcountry Trail Use and Access

The backcountry trail system would offer visitors a primitive outdoor experience. The trails would be designed and managed to reduce conflicts with automobiles and incompatible uses; allow for a satisfying park experience; allow accessibility by the greatest number of people; and protect park resources per NPS Management Policies. A broad spectrum of elements define the backcountry trail experience, including the aesthetic, visual and recreational visitor use opportunities, the number and location of access points, parking availability and overall park operations.

The multi-loop trail would total 9.8 miles and feature shorter loops with varying difficulty within the overall loop which encompasses the Memorial, connector trails, trailheads and new parking areas. These trail attributes would assist in the objectives of offering multi-generational and multi-cultural



experiences, as well as in its ability to provide educational and research opportunities in many of the diverse areas throughout the Memorial.

A. Direct and Indirect Impacts

The direct and indirect effects of the multi-loop alternative would assist the Memorial in achieving its Centennial Vision goals, seeking to become a center of excellence for sharing the story of America and providing visitor opportunities. Beneficial effects of the proposed trail would include;

- Increase in recreational and interpretive opportunities at Memorial for many generations and for those of varying skill and ability to access the trail
- Increase in local retail, hotel and camping bookings ,especially in Keystone
- Increase in state and national tourism
- Decrease in social trails with the new designated trail system
- Increased use of trails by other organizations/businesses
- Economic impact on PPI due to increased users
- Increase in maintenance from additional users
- Increase in food, water and other sales within the Memorial
- Increase in opportunities and permits issued for commercial guides and outfitters

Potential adverse impacts would include:

- Increase in traffic on 244 and 16A
- Increase in pedestrian crossings
- Increase in traffic and parking in Keystone
- Traffic and privacy issues with residents of Lafferty Gulch Road
- Increase in parking numbers/needs
- Abuse of overnight parking
- Increase in housing needs for trail volunteers
- Increase in use of USFS Wrinkled Rock parking area

The adverse impacts can be mitigated through coordination with agencies and partners, including the South Dakota Department of Transportation (DOT), USFS, MRNMS, the City of Keystone and neighbors in the vicinity of the Memorial. Anticipating and planning for each of these adverse effects would help to mitigate the impact to the entity involved in each area.

Less impact would be anticipated with PPI in the multi-loop alternative, than in the single loop alternative, since additional parking for trail use only is provided at trailheads. Even with the additional parking, many visitors would use PPI as their preferred parking location. These visitors to the trail would in all likelihood have a longer stay in the Memorial than the average visitor and would increase demand for parking in the PPI. In cooperation with MRNMS the Memorial would implement an on-going monitoring program to determine the length of stay and number of visitors who use the trail.

Potential impacts from additional parking in the Wrinkled Rock area would be mitigated in the multi-loop alternative with the addition of a trailhead and parking area near the west entrance to the Park. In addition to designing the parking and trailhead in coordination with the USFS, the Memorial would implement a monitoring program to count the number of cars and length of stay for visitors using the trail near the Wrinkled Rock area.



B. Cumulative Impacts

The cumulative impacts would include a long-term effect of many of the direct and indirect benefits, including the benefits to visitors and to communities and the state, which would economically benefit from the increase in visitors and their length of stay. One possible benefit would be increased activity during the shoulder seasons. These cumulative impacts would have potential impacts on parking and the need for additional staff with the Memorial, the concessionaire and in the private sector.

Even with increased parking at the trailheads, there is a potential for new or additional user group conflicts, such as rock climbers in the Wrinkled Rock area, hikers, equestrian users and mountain bikers, particularly as they interface with other parks or areas of the USFS in the region. On-going coordination with these agencies and groups would be an important measure to mitigate potential conflicts.

C. Other

There would be no other impacts. All effects of the proposed alternative would be long-term in nature and would be managed as an integral part of park operations.

4.3.4 Security and Safety

A. Direct and Indirect Impacts

The security of the Memorial would not be adversely impacted due to the fact that the trail system will not place individuals any closer to Mount Rushmore than currently exists. Direct impacts on issues of personal safety are a function of the increased number of users on the trail system.

In order for the Multi-Loop Trail to encircle the Memorial, 3 pedestrian crossings would be constructed at the area south of PPI parking, and at the west and east entrances to the Memorial. An additional crosswalk at the intersection of 224 and 16A would be added in a later phase to provide access to the greenway. Potential adverse impacts include:

- Increase in vandalism in backcountry areas
- Increase in souvenir collectors
- Increased exposure to housing area
- Need for increased foot patrols for backcountry areas (also during special events)
- Increase in search and rescue incidents from loss and injury

Rangers would continue to monitor and patrol the Memorial, including the backcountry areas. Visitors must assume a substantial degree of risk and responsibility for their own safety when hiking the backcountry trails and scenic vistas.

Speed limits near the crossings on both Highway 244 and 16A would need to be reduced and additional signs to alert drivers would be installed. Rangers would continue to monitor and patrol the Memorial. The safety at the crossing south of PPI parking area would be enhanced by the construction of an underpass that would allow visitors to move between the parking area and the start of the trail at the Blackberry Trailhead.



B. Cumulative Impacts

The cumulative impacts would include increased exposure for visitors to West Nile and Lyme's Disease. These potential hazards would be mitigated through education for the visitors on what to expect and how to prevent accidental exposure when using the trail.

C. Other

Any personal safety impacts due to the increased access to the backcountry areas of the Memorial would be mitigated by posting emergency information at each trailhead; including rules and regulation and providing brochures with emergency information, visitor expectations and warnings.

4.3.5 Cultural Resources

A. Direct and Indirect Impacts

There would be several beneficial impacts with the cultural resources at the Memorial, including:

- Increase in interpretive and education opportunities
- Increase in volunteer opportunities
- Opportunities for ethnography (connection to place)
- Professional development, career development, diversity of duties for NPS and other staff
- Increased access for Tribes and other groups (ceremonial, plant harvesting)
- Increased opportunities for partnerships with educational institutions

The only potential adverse impacts to the cultural resources would be an increase in souvenir collection within the Memorial. This would be mitigated by employing the most effective concepts, techniques, and equipment to protect cultural resources against theft, fire, vandalism, overuse, deterioration, environmental impacts, and other threats without compromising the integrity of the resources.

B. Cumulative Impacts

The beneficial cumulative impact would be the easier access throughout the Memorial, which may promote additional scientific and cultural research opportunities. As additional knowledge and opportunity becomes available, there is the potential to have increased disputes over the cultural significance of some of the resources. These disagreements would be mitigated by anticipating possible disagreements and develop policies in consultation with interested groups.

C. Other

As the final design and routing of the multi-loop alternative trail is variable within the surveyed corridor, no previously recorded archaeological sites or features noted during the trail corridor survey will be impacted by any proposed construction. Given these survey results and the potential for avoidance of cultural resources in the final routing of the trail, and mindful of the potential for the inadvertent discovery of buried cultural material, the proposed alternatives would not impact any known cultural resources.

Should any cultural resources be uncovered during trail construction, the contractor or trail project manager would contact the NPS Curator immediately, who would contact the South Dakota State Historic Preservation Office (SHPO). It would be the responsibility of the contractor to protect



archaeological resources from disturbance until a professional examination takes place or until a responsible authority authorizes clearance to proceed. According to a memorandum from the Midwest Regional Director (11/17/2008), the discussion of the contractor's responsibilities if any cultural material is discovered during construction of the trail is sufficient and they do not believe that there will be any adverse impacts to currently identified resources.

4.4 Comparison of Potential Impacts

Table 3. Comparison of Potential Impacts of the Alternatives

Key Resource	<u>Alternative 1</u> No Action	<u>Alternative 2</u> Single Loop	<u>Alternative 3</u> Multi-Loop (Preferred Action)
Water Resources	Continued use of existing trails, which require crossing streams and wetlands	Protection of water resources with the use of elevated walkways, crossings and bridges	Protection of water resources with the use of elevated walkways, crossings and bridges
Ecological and Wildlife Resources	No change. Possible increase in social trails throughout the Memorial	Potential exposure to sensitive species and introduced exotic species; mitigated through trail design and education	Potential exposure to sensitive species and introduction of exotic species; mitigated through trail design and education
Backcountry Trail Use and Access	No change from current operations	Increased access throughout the Memorial. 6.7 miles in total length with 2 access points and a 4.3 single loop trail	Increased access throughout the Memorial. 9.8 miles in total length with 6 access points, 5 sub loops, 4 new parking areas for trail users only. Variety in the length and difficulty in trails.
Security and Safety	No change from current operations	Issues of personal safety due to increased number of users; mitigated with education, signage, and additional security patrols.	Issues of personal safety due to increased number of users; mitigated with education, signage, and additional security patrols.
Cultural Resources	No change from current operations	Increased access to cultural sites for research and education.	Increased access to cultural sites for research and education.



5.0 CONSULTATION and COORDINATION

5.1 External Scoping

External (public) scoping was conducted to inform various agencies and the public about the proposal

In addition to the aforementioned public entities, the following agencies and Native American tribes were sent scoping information or were contacted for information regarding the project:

Federal Agencies

US Army Corps of Engineers
US Department of Agriculture (Natural Resources Conservation Service)
US Environmental Protection Agency
US Fish and Wildlife Service
US Forest Service (Black Hills National Forest)

State Agencies

Custer State Park
South Dakota Department of Environment & Natural Resources
SD Department of Transportation
SD Game Fish & Parks
State Soil Scientist

Affiliated Native American Groups

Apache Tribe of Oklahoma
Arapaho Business Committee
Cheyenne River Sioux Tribe
Cheyenne-Arapaho Tribes of Oklahoma
Crow Creek Sioux Tribal Council
Flandreau Santee Sioux Executive Committee
Fort Belknap Community Council
Fort Peck Tribal Executive Board
Kiowa Tribe of Oklahoma
Lower Brule Sioux Tribal Council
Lower Sioux Indian Community
Northern Cheyenne Tribal Council
Oglala Sioux Tribal Council
Ponca Tribe of Nebraska
Ponca Tribe of Oklahoma
Rosebud Sioux Tribal Council
Santee Sioux Tribal Council
Sisseton-Wahpeton Sioux Tribal Council
Standing Rock Sioux Tribe
Three Affiliated Tribes Business Council
Yankton Sioux Tribal Bus. & Claims Comm.

5.2 Internal Scoping

Internal scoping was conducted by an interdisciplinary team (IDT) of professionals from Mount Rushmore National Memorial, the National Park Service, Black Hills National Forest, and South



Dakota Game Fish and Parks. IDT members attended an Alternative Generation Workshop April 12-14, 2008 to discuss the purpose and need for the project; generate alternatives; describe potential environmental impacts, including direct, indirect and cumulative and develop possible mitigation measures. As part of the Alternative Generation Workshop, three public open houses (two in Rapid City, SD and one on the Pine Ridge Reservation) were held to inform the public of the proposed project and to receive input on the project. Several articles were published in the Rapid City Journal regarding the public meetings and the purpose of the project.

External scoping was initiated with the distribution of a scoping letter to federal, state and tribal governments (see lists in Section 5.1) to inform them of the proposal to construct a new loop trail system at the Memorial and to generate input on the preparation of this Environmental Assessment. The scoping letter dated April 2008 was mailed to over 14 agencies and 34 affiliated Tribes. Scoping information was also posted on the NPS PEPC site.

Comments received during initial scoping guided the generation of alternatives and the selection of the preferred alternative. A copy of the comments from the open house and PEPC site can be found in Appendix B.

5.3 Environmental Assessment Review and List of Recipients

The Environmental Assessment will be released for public review in January 2009. To inform the public of the availability of the Environmental Assessment, the National Park Service will publish and distribute a letter or press release to various agencies, tribes, and members of the public on the PEPC site, the scoping list, as well as place an ad in the local newspaper. Copies of the Environmental Assessment will be provided to interested individuals, upon request. Copies of the document will also be available for review at the Memorial Administrative Offices and on the internet at <http://parkplanning.nps.gov>.

The Environmental Assessment is subject to a 30-day public comment period ending _____. During this time, the public is encouraged to submit their written comments to the National Park Service address provided at the beginning of this document. Following the close of the comment period, all public comments will be reviewed and analyzed, prior to the release of a decision document. The National Park Service will issue responses to substantive comments received during the public comment period, and will make appropriate changes to the Environmental Assessment, as needed.

5.4 List of Preparers

The following people provided input on the development of the content and provided valuable information through the Alternative Generation Workshop and Alternative Selection Workshop or by individual contribution.

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