National Park Service
U.S. Department of the Interior

Fort Davis
National Historic Site

Texas

Final Environmental Impact Statement
General Management Plan

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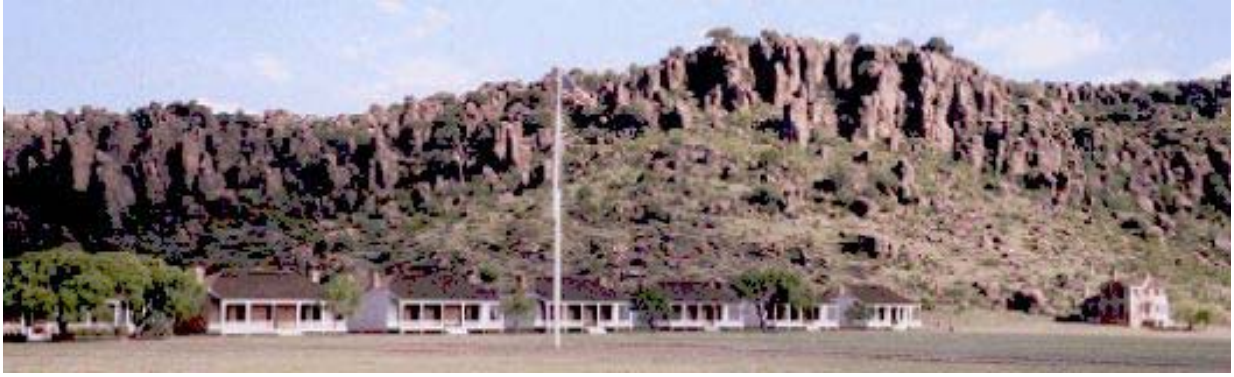
General Management Plan



FORT DAVIS
National Historic Site • Texas

SUMMARY:

The general management plan would guide the management of the Fort Davis National Historic Site for the next 10 to 15 years. Four alternatives were considered—a no-action and three action alternatives, including the National Park Service proposal. The proposed general management plan would retain most existing visitor experiences and would improve outreach programs, visitor orientation, collaborative research partnership opportunities, and administrative staff services. It also would provide for enhanced protection of facilities and resources from flooding. The environmental impact statement assesses impacts to visitor experience, archeological resources, cultural landscapes, historic resources, long-term health of natural ecosystems, economic contribution to local communities, adjacent landowners, and facility/operational efficiency. The plan also identifies cumulative effects on wetlands and floodplains for the National Park Service proposal.

Direct questions and send comments to:

Superintendent
Fort Davis National Historic Site
P.O. Box 1379
Fort Davis, Texas 79734

United States Department of the Interior • National Park Service • Fort Davis National Historic Site

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CHAPTER 1: PURPOSE OF AND NEED FOR THE PLAN

INTRODUCTION

Fort Davis National Historic Site (NHS) is located on Texas State Highways 17/118 on the northern edge of the town of Fort Davis. It is situated at the eastern side of the rugged Davis Mountains, approximately 200 miles southeast of El Paso, Texas, and 180/160 miles southwest of Midland/Odessa, Texas, respectively. In its currently preserved condition, Fort Davis symbolizes the era of westward migration and the essence of the late 19th-century U.S. Army. The park preserves the historic buildings, ruins, foundations, and landscape associated with two forts (1854–1862 and 1867–1891). In so doing, it makes this valuable part of America's heritage available to thousands of visitors annually for their enjoyment, understanding, education, and appreciation.

PURPOSE OF THE PLAN

The National Parks and Recreation Act of 1978 tasked the National Park Service to prepare general management plans (GMPs) for all national park units. The purpose of the general management plan is:

- To clearly describe specific resource conditions and visitor experiences in various management units throughout the park and
- To identify the kinds of management, use, and development that will be appropriate to achieving and maintaining those conditions.

The accompanying environmental documentation for Fort Davis NHS provides sufficient information to evaluate alternatives and provide the basis for a record of decision (ROD) documenting the NPS's choice of a preferred action.

NEED FOR THE PLAN

Fort Davis NHS has an outdated 1962 master plan. The GMP is needed to establish the basic management philosophy of the park and to provide a rationale for making management decisions that affect the park's resources and the visitors' experience of the site.

President John F. Kennedy authorized Fort Davis National Historic Site on September 8, 1961. Public Law 87-213 stated that no more than 460 acres be acquired for the purposes of establishing a national historic site. Approximately 14 acres were added to the park by donation in 1999 (authorized on November 6, 1998, by Public Law 105-355 Section 506). The fort lands are listed in the National Register of Historic Places and are classified and managed as a historic zone, in accordance with the National Park Service Management Policies (1988). The 1988 policies direct that physical development shall be the minimum needed to preserve, protect, and interpret historical values and shall not detract from or adversely affect these values.

The final plan, when completed, will set forth the basic management philosophy for the park. This document includes measures for the preservation of the area's resources, indications of the types and general intensities of development (including visitor circulation and transportation patterns, systems, and modes) associated with public enjoyment and use of each area, and the first steps in identifying visitor carrying capacities.

This document also discloses the potential environmental consequences, as far as can be determined by a conceptual plan, that may result from implementation of various alternatives. It documents the process used by the National Park Service in preparing a general management plan.

THE PLANNING PROCESS

The planning process builds upon the logic established for national parks, starting with all laws, regulations, and policies applicable to the national park system. The proposed action and alternatives displayed in this document are based on each unit's purpose and significance. Alternatives in the plan have three common components—**the vision, the desired future conditions, and the management prescriptions.** Each alternative addresses the desired future conditions in a different way.

The vision is a short narrative that describes the park's desired future condition. It is meant to stand the test of time and reflect the park's purpose and significance. It expresses the management philosophy for the park and describes what the park is to be like in the future.

Desired future conditions capture the essence of the vision, providing clarity and priorities. These objectives are issue-, resource-, or geographic-specific. They may include products to be produced or conditions to be attained or maintained. As a whole, objectives are interrelated and interdependent. The desired future conditions provide a basis for allocating resources and describing regions in the park.

Management prescriptions are geographically based. Prescriptions describe characteristics of the management region for which they were developed and define the outputs, activities, and projects for that region. The rationale for defining regional boundary delineations is included in this planning document.

Management prescriptions for each region are based on the character and condition of the resource involved. They are not only tied to local or park-wide needs but also take into consideration factors beyond park boundaries. A menu of available management prescriptions is developed. Each alternative revolves around a common theme, and the same set of prescriptions is applied differently over park lands, depending on the theme of the alternative. Themes set the basis for developing distinctly different alternatives that provide a variety of visitor experience options.

The plan provides general guidance and is not detailed, specific, or highly technical in nature. Highly technical environmental analysis is done when funds become available to design facilities, if prescribed by the management plan, when site-specific impacts can be addressed. All undertakings are subject to Section 106 review and compliance prior to implementation.

THE NATIONAL PARK SYSTEM

The national park system represents our national heritage and includes a collection of the nation's most outstanding and significant natural, cultural, historic, and recreational resources. Each unit contains resources and values that make it something special and nationally significant. Fort Davis NHS fulfills a particular "niche" in the national park system. The place filled by each park is defined by its **park purpose**.

The National Park Service's mission of conserving resources—whether they be natural, cultural, historic, or recreational—recognizes the importance of preservation as an active management tool. This preservation principle respects both natural and human relationships and emphasizes the value of maintaining land for the purpose of preserving natural ecosystems, historic significance, and outstanding recreational opportunities.

Balanced against the protection and preservation of these resources is the value of public enjoyment by present and future generations. Human use often can threaten the very resources that the National Park Service is entrusted to protect. Many public debates have revolved around the balancing of these two National Park Service purposes. Whether it is telling a story or carefully protecting resources, the Service uses the principles of human and natural management to accomplish its mission.

But at the very least, "these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system managed for the benefit and inspiration of all people." (16 USC 1a-1; 1970)

PARK PURPOSE

Each park in the national park system is established for a specific purpose. The reason or reasons why Fort Davis National Historic Site was incorporated into the system is called its **park purpose**. The park purpose reflects current scientific or scholarly inquiry and interpretation. Purpose statements are based on enabling legislation and legislative history. Other legislation that affects each park unit includes, but is not limited to, the 1916 Organic Act for the National Park Service, National Environmental Policy Act, Historic Preservation Act, and the Endangered Species Act. The following purpose statements reflect the mandates and legislative intent for the creation of Fort Davis NHS. (See Appendix 1 for legislation.)

- Perpetuate and conserve the cultural and natural resources of Fort Davis NHS
- Educate the public about the influence of Fort Davis on the development and settlement of the Southwest and about the impact of military operations on American Indians

PARK SIGNIFICANCE

Each significance statement captures the essence of Fort Davis National Historic Site's importance to our nation's natural and cultural heritage. Together, they describe the distinctiveness of the resources, distinguishing Fort Davis National Historic Site as one of the units in the national park system that offers a

unique experience within a regional, national, and global context.

The significance statements identify the exceptional values and resources that must be preserved and maintained to achieve the purpose of the park. These statements also help park managers set resource protection priorities and identify primary park interpretive themes and desirable visitor experiences.

- Fort Davis is one of the best remaining examples in the Southwest of a typical post–Civil War frontier fort because of the extent of the surviving structures and ruins.
- Fort Davis provides an excellent opportunity for understanding and appreciating the important role played by African Americans in the West and specifically in the frontier army, because Black troops served at the post from 1867 to 1885.
- Fort Davis provided essential troops and supplies to the Victorio Campaign, which ended meaningful resistance of Apache bands in the Trans-Pecos.
- The historic integrity and character of the military post have not been significantly altered since its establishment. Much of the landscape immediately adjacent to the post has experienced little visible change.
- Fort Davis was strategically located to defend the Trans-Pecos portion of the San Antonio–El Paso Road and the Chihuahua Trail. This encompassed controlling activities on the southern portions of the Great Comanche War Trail and Mescalero Apache War Trails.

SPECIAL MANDATES

Historic District

Fort Davis structures are listed in the National Register of Historic Places as a historic district. The entire district includes over 250 structures and ruins, of which 5 are restored and refurnished buildings and 21 are roofed buildings. The National Historic Preservation Act of 1966 (as amended) requires the NPS to ensure that any federally funded or licensed undertaking is implemented only after careful consideration of its possible impacts on properties listed on or eligible for listing on the National Register of Historic Places.

Servicewide Law and Policies

Management and operations within NPS units are governed by many laws, regulations, policies, and guidelines. The following are those that apply to this planning effort:

- National Park Service Organic Act
- National Environmental Policy Act
- National Historic Preservation Act
- Archeological Resources Protection Act
- American Indian Religious Freedom Act
- Native American Graves Protection and Repatriation Act
- Endangered Species Act
- E.O. 11988: Floodplain Management
- E.O. 11990: Wetlands Protection
- Federal Water Pollution Control Act
- Clean Air Act
- Architectural Barriers Act
- Rehabilitation Act
- Americans with Disabilities Act

PLANNING PROCESS

The planning process began in February 1997. Initial scoping activities were conducted, which included public meetings and issuance of a press release. Additional meetings to update the public on the planning process were also held in April and June 1998.

A notice of intent for an environmental impact statement was published in the **Federal Register** on November 19, 1998. A public comment period followed, ending on February 15, 1999. A web site was established at the following address

to facilitate making information about the planning process available to the public.

http://www.nps.gov/planning/foda

A newsletter invited the public to share their thoughts on the future of Fort Davis NHS, and a total of 27 responses were received. News releases updating area residents on the GMP process were also sent to nearby newspapers. General issues to be considered by the plan included:

- How can we best protect and preserve park resources and at the same time provide for a quality visitor experience?
- What kinds of management, use, and development are appropriate in order to achieve these conditions?

Vision for the Future

Set in the rugged beauty of the Davis Mountains, Fort Davis is one of America's best surviving examples of an Indian Wars' frontier military post in the Southwest. Echoes of bugle calls and the haunting sounds of a dress retreat parade help visitors envision what life was like in the late 19th century at this frontier fort.

Treading close to its ruins and wandering through its restored and refurnished buildings, visitors experience a segment of history interwoven in every American's heritage. Balanced interpretive programs reflect the cultural diversity of those who once lived here. Fort Davis is, indeed, a living classroom where opportunities abound for exploration, enlightenment, and inspiration.

The future of Fort Davis is within the bounds of past preservation and restoration. Resources are protected without compromising the historic scene. The National Park Service manages Fort Davis National Historic Site and has accepted the challenges to preserve it for future generations. Partnerships with local communities and especially with the Friends of Fort Davis NHS allow for the attainment of goals.

Our children's children will be able to learn from and enjoy this park because its resources are protected and its history interpreted with accuracy. In the words of former President Lyndon B. Johnson:

"If future generations are to remember us with gratitude rather than contempt, we must leave them more than miracles of technology. We must leave them a glimpse of the world as it was in the beginning not just after we got through with it."

GPRA MISSION GOALS

The Government Performance and Results Act of 1993 (GPRA) was enacted to make government more effective and efficient. Planning for this GMP is consistent with the following Mission Goals established for GPRA.

Category I: Preserve Resources

- Mission Goal Ia: Natural and cultural resources and associated values of Fort Davis NHS are protected, restored, and maintained in good condition and managed within their broader ecosystem and cultural context.
- Mission Goal Ib: The National Park Service at Fort Davis NHS contributes to knowledge about natural and cultural resources and associated values; management decisions about resources and visitors are based on adequate scholarly and scientific information.

Category II: Provide for the Public Enjoyment and Visitor Experience

- Mission Goal IIa: Visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of Fort Davis NHS facilities, services, and appropriate recreational opportunities.
- Mission Goal IIb: Fort Davis NHS visitors, and the general public, understand and appreciate the preservation of the park and its resources for this and future generations.

Category IV: Ensure Organizational Effectiveness

- Mission Goal IVa: The National Park Service at Fort Davis NHS uses current management practices, systems, and technologies to accomplish its mission.
- Mission Goal IVb: The National Park Service at Fort Davis NHS increases its managerial resources through initiatives and support from other agencies, organizations, and individuals.

DESIRED FUTURE CONDITIONS

Desired future conditions (DFC) further refine management objectives and GPRA goals. For each desired future condition, the corresponding GPRA Goal is shown in parenthesis.

Prime Resource

Prime resource lands are defined as those resources that made a direct contribution to establishing the park as a unit of the national park system and are related to the park's purpose and significance. Other lands within the park are also important to protecting and supporting the prime resource, but are not considered to be the prime resource.

The historic resources, features, and objects are considered the prime resource of the park.

> "For nearly four decades Fort Davis stood as a bastion of Anglo-American civilization in West Texas. The post guarded roads and trails, served as a mobilization point for Indian campaigns, and by its presence provided impetus for settlement of the region of the upper Rio Grande. Fort Davis provided a viable military continuum in the area from 1854 to 1891, alternatively serving a variety of military purposes. During the early years of the Civil War Confederate troops occupied the fort; from mid-1862 until 1867 it went ungarrisoned. In the latter year Fort Davis was rebuilt and reoccupied by the United States Army. After abandonment in 1891, the structures composing the post languished for seventy years until the National Park Service acquired the property and established Fort Davis National Historic Site."
> (Historic Resource Study, 1986)

The following resource-, geographic-, and issue-specific Desired Future Conditions apply to Fort Davis NHS.

Resource-Desired Future Conditions

CURATORIAL—Provide high-quality artifact preservation and exhibits (Ia, Ib)

Conditions to be attained/maintained:

1) NPS standards for storage of artifacts are met.
2) Objects are professionally conserved, catalogued, and preserved.
3) Alternative sources of funding, staffing, and outside partnerships are explored.
4) Display space for curatorial resources is of high quality and is appropriate for telling the park story.

ARCHEOLOGY—Protect and Preserve all Archeological Resources (Ia)

Conditions to be attained/maintained:

1) A comprehensive archeological survey has been completed.
2) Archeological resources are identified, inventoried, documented, and protected.
3) Information gained from archeological sites is shared with the public.

INTERPRETATION—Provide high-quality interpretive services that inspire visitors (IIb)

Conditions to be attained/maintained:

1) The story of Fort Davis is told from the perspective of the military, civilians, Buffalo Soldiers, Native Americans and other cultures associated with the history of the fort.
2) High-quality personal services and interpretive programs are provided.
3) Special educational programs and services are offered.
4) A vital component of the interpretive message contains information on the protection and preservation of resources.
5) Accurate and quality living history programs connect visitors to the story of Fort Davis.
6) Interpretive media and non-personal services enhance visitors' understanding and knowledge of the significance of the park.
7) Information on natural resources is provided.

OUTREACH—Use the Internet to provide comprehensive information about Fort Davis (IIb)

Conditions to be attained/maintained:

1) An educational web site is available that provides curriculum-based materials for teachers.
2) A "Buffalo Soldiers" web site provides accurate and in-depth information at it relates to the history of Fort Davis.
3) Fort Davis NHS home page provides a broad spectrum of information for the visitor.

OUTREACH—Provide effective and quality outreach programs to the general public (IIb)

Conditions to be attained/maintained:

1) The story of Fort Davis is understood by school children throughout west Texas.
2) Partnerships broaden the ability of the park to provide the story of Fort Davis to the general public.
3) A high-quality study/research facility is available to the public for historical research.

HISTORIC PRESERVATION—Conserve and protect the historic fabric of Fort Davis (Ia)

Conditions to be attained/maintained:

1) The historic structures and ruins are conserved, minimizing impacts on the original fabric.
2) Stabilization is used as a treatment to prevent loss of the original fabric. All treatments will be compatible with the original, based on current research, and documented for future reference.
3) The exterior appearance and integrity of the structures and ruins are not compromised through inappropriate conservation treatments.
4) A comprehensive database provides information on all known structures, ruins, and sites.

CULTURAL LANDSCAPE—Manage the cultural landscape (Ia, Ib)

Conditions to be attained/maintained:

1) The cultural landscape inventory and plan are completed.
2) The cultural landscape plan is considered in the management of Fort Davis.

PROTECTION—Protect park resources (Ia, IIa)

Conditions to be attained/maintained:

1) All historic structures and ruins are protected from adverse impacts.

2) The park is managed to provide a safe environment. This includes safety for visitors, employees, and volunteers.
3) Fire suppression is fully sufficient to protect the resource.
4) Facilities and contents are secured and protected.
5) Visitor use is managed to protect the cultural and natural environment.
6) Plants, wildlife, and cultural resources are protected.

FACILITIES—Provide facilities that meet visitor and staff needs (Ia, IIa, IIb)

Conditions to be attained/maintained:

1) Facilities meet ADA standards where practical.
2) Adequate storage and workspace exists for all operations, meeting all laws and mandates where applicable.
3) Museum and interpretive exhibits are modernized and updated using state-of-the-art technology.
4) Adequate parking is provided.
5) Space in the visitor center enhances the visitor's experience.
6) Nature trails meet visitor, educational, and safety needs.
7) Facilities, such as rest rooms, meet basic needs of staff and visitors.

ADJACENT LANDS—Protect the historic scene from incompatible development on adjacent land (Ia)

Conditions to be attained/maintained:

1) NPS values and goals are shared and understood by park stakeholders.
2) NPS considers opportunities that may present themselves to acquire adjacent land that fit within the management goals for the park.

PARTNERSHIPS—Develop strong partnership programs (IVb)

Conditions to be attained/maintained:

1) A strong and vibrant friends group supports the park and helps it meet its mission and goals.
2) Programs with academic institutions are established to provide additional research and resources to the park.
3) The park partners with private institutions and organizations that support park goals.
4) The park maintains a viable professional group of volunteers.
5) The park maintains a strong partnership with the Davis Mountains State Park.
6) The park partners with local, county, other state, and federal agencies to share resources and experiences.

AIR QUALITY—Maintain the best possible air quality (Ia)

Conditions to be attained/maintained:

1) Facilities and activities within the park are in compliance with the Clean Air Act requirements.
2) The park strives to raise the level of awareness of the importance of air quality to park resources.

FLASH FLOOD MITIGATION—Mitigate the flood threat (Ia, Ib, IIa)

Conditions to be attained/maintained:

1) Park resources and visitors are protected from flooding.
2) A flash flood mitigation plan is in place.
3) Flood mitigation measures are sympathetic to historic features.

INTRUSIVE NOISE—Minimize inappropriate noise and overflight (Ia, IIa, IIb)

Conditions to be attained/maintained:

1) Inappropriate sound and noise are minimized to enhance the visitors' opportunities to experience historical sounds in the park.
2) The park strives to minimize overflight effects from extreme vibrations that may damage park resources.

Geographic

These areas refer to the Resource Opportunity Areas described in the Visitor Experience and the Environmental sections.

FOREGROUND—Protect the viewshed and natural features (Ia)

Conditions to be attained/maintained:

1) Views into the park remain natural and undeveloped (this excludes residential/ maintenance area on the park boundary).
2) The cottonwood grove is protected and propagated.

HISTORIC CORE—Provide sights and sounds that enhance visitor experience (IIa, IIb)

Conditions to be attained/maintained:

1) Natural quiet is desirable.
2) Military sounds are broadcast.
3) Living history is a core interpretive program.

HISTORIC CORE—Protect the historic scene (Ia)

Conditions to be attained/maintained:

1) The fort's historic appearance is maintained through appropriate preservation management.

BACKDROP—Protect and maintain the natural environment (Ia)

Conditions to be attained/maintained:

1) No visual intrusions are evident.
2) Natural systems are protected.
3) Nonnative species are identified, mitigated, and managed to the extent possible.

CHAPTER 2: MANAGEMENT PRESCRIPTIONS AND RESOURCE AREAS

PARK RESOURCES AND VISITOR USE

Fort Davis National Historic Site has the tremendous responsibility of managing and protecting all natural and cultural resources within the park, while at the same time providing visitor enjoyment of the same resources. In order to accomplish its mission, it is necessary to outline management strategies for the park and designate where specific activities are appropriate and where they are not.

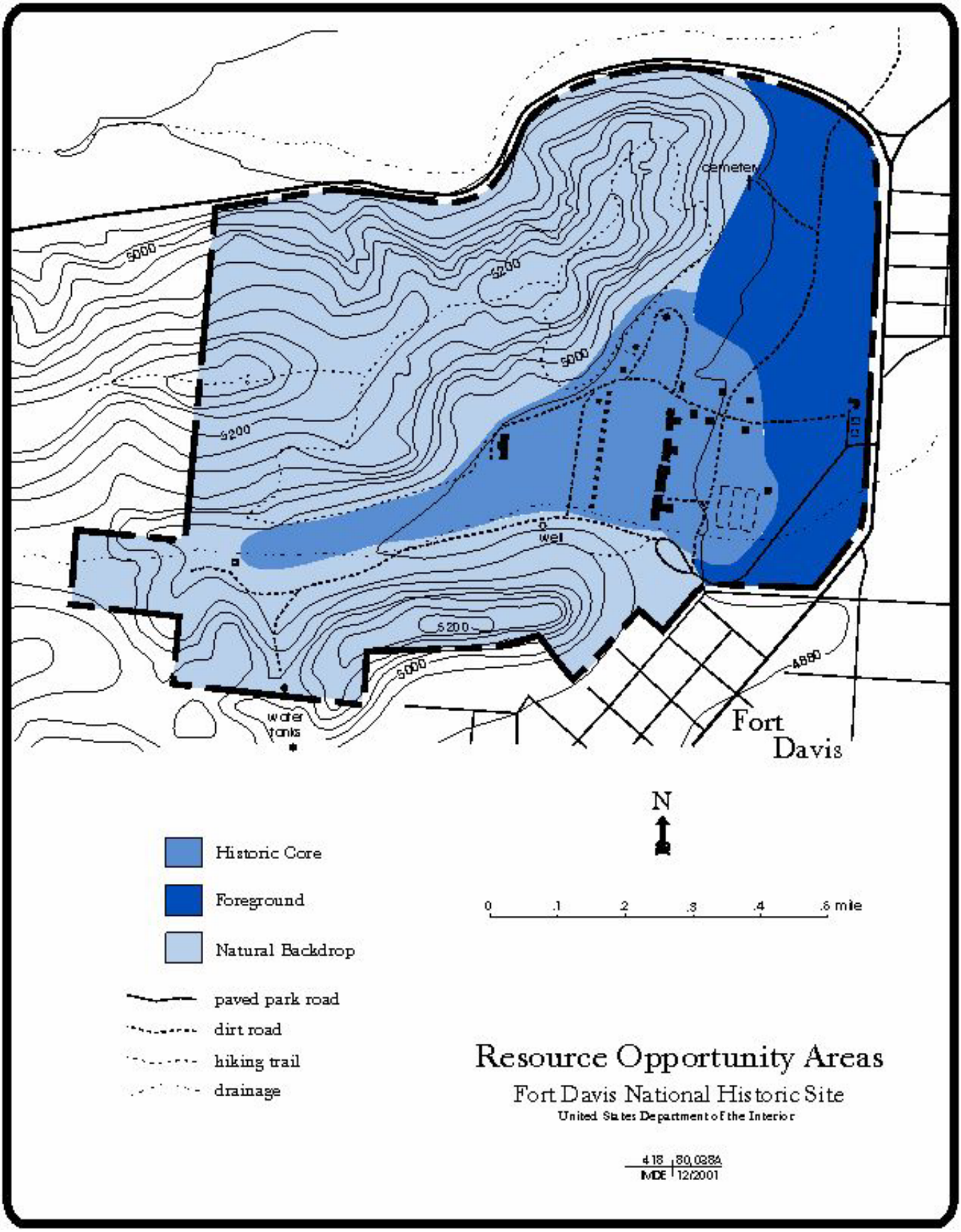
The development of such strategies will enable the park to begin monitoring conditions and to ensure that the goals related to resource management and visitor use can be achieved. The Resource Opportunity Area concept is the first step in incrementally moving the park toward the goal of addressing "carrying capacity." It also helps to define the "suitability" of park lands for the application of management prescriptions.

Resource Opportunity Areas

Parks are composites of a variety of important cultural and natural resources. People value parks for many reasons—inspirational, educational, aesthetic, recreational, scientific, spiritual, and economic, among others. Significant differences relating to resource values and visitor use usually exist within different areas of a park. The uniqueness of these various areas and their relationship to one another, as well as to lands beyond the park boundary, influence visitor use and management of the park. In order to describe the park's affected environment, to outline a set of alternatives, and to ultimately assess impacts on the resource, the resource values of the park must be identified and categorized.

This identification is best accomplished through the designation of areas or zones where similar resources are located. These pieces of the park, or geographic delineations, which may extend beyond the boundaries of the park, are called Resource Opportunity Areas (ROAs). The evaluation of these areas requires the involvement of public and private interests in the area.

At Fort Davis there are three distinct ROAs—Foreground, Historic Core, and Natural Backdrop. Each contributes in a different way to how people use the resources of the site.


cemetery
5000
5200
5000
5200
well
5200
5000
water tanks
4880
Fort Davis
N
Historic Core
Foreground
Natural Backdrop
paved park road
dirt road
hiking trail
drainage
0 .1 .2 .3 .4 .5 mile
Resource Opportunity Areas
Fort Davis National Historic Site
United States Department of the Interior
418 80,038A
MDE 12/2001

It is important to incrementally plan ROAs for the protection of park resources from visitor overuse. ROAs illustrate how visitors might relate to and use park resources and point out the relative importance of each area to the whole. They also provide the basis for understanding visitor experiences available within a park. At the same time, the physical resources and visitor experiences are related to the park's purpose and significance.

The designation of Resource Opportunity Areas helps to specify and identify areas of sensitive resources where damage can occur from overuse. By identifying important resource areas, the park can begin the steps needed to define carrying capacity and "Visitor Experience and Resource Protection (VERP)" planning. Future VERP planning will eventually define carrying capacities needed to protect resources. Each Resource Opportunity Area includes a brief description of the following:

- Outstanding examples of historic, natural, scenic, geological, ecological, floral, faunal, and recreational values for which the park was established.
- Populations of rare plants and animals that are particularly vulnerable because of their small population sizes and genetic isolation.
- Habitats necessary for the survival or reintroduction of federal or state recognized threatened or endangered species or candidate species being considered for listing.
- Resources that are unusually sensitive to human use.
- Major known archeological or important historical resources.

The following paragraphs define each of the three Resource Opportunity Areas (ROAs) at Fort Davis National Historic Site. Although there may be some characteristics shared among ROAs, other characteristics will be unique to one ROA.

Foreground ROA

This Resource Opportunity Area is located on the easternmost edge of the Fort Davis National Historic Site property. An open grassland environment common to the Davis Mountains dominates the area. Historic resources located in the Foreground ROA were auxiliary in nature, but still played an important role in supporting fort functions. The historic resources in this ROA include garden sites, a wood yard, a pump house, laundresses' quarters, a lime kiln, a spring, and remnants of the San Antonio–El Paso Road. One of the garden sites contains a historic grove of cottonwood trees that provides visitors with a shaded area, a pleasant spot for a picnic.

This ROA offers a physical and visual buffer between the site's historic structures and the modern commercial and residential areas of the town of Fort Davis. It also furnishes visitors with the first glimpses of the fort from State Highways 17 and 118. This ROA serves as the entrance to the fort, giving visitors their first impression of the fort and its resources.

Opportunities that are available in the Foreground Resource Opportunity Area include:

- Viewing opportunities— give visitors an outside look at the historic resources and the historic scene. Views from this area afford a picture of how the fort might have first appeared to early settlers.
- Recreational opportunities — provide visitors opportunities to picnic and enjoy the solace of the historic cottonwoods.
- Cultural opportunities —enable visitors to experience resources that supported and maintained the fort's existence.

Historic Core ROA

The Historic Core Resource Opportunity Area is located in the center of the park and contains the primary resources for which the park was created. This area contains the majority of the fort's historic structures, features, and sites and was the location of

most day-to-day activities during its existence.

This ROA provides the visitor with opportunities to view Fort Davis's abundant historic resources and to learn about the history of the fort. The historic buildings, ruins, foundations, and sites provide visitors access to the history of the first and second forts. Military sites and sounds help visitors to imagine what it would have been like during the period when Fort Davis was an active military post. The parade ground and cultural landscape give visitors an experience of times past. Remnants of the San Antonio–El Paso Road, company streets, and historic roads within the fort can be seen.

Because the fort is in the middle of an alluvial floodplain, natural drainages run through this ROA. Historic flood control features, such as ditches and dikes, originally built by the military for flood protection, are also present.

It is in this ROA that most development has occurred. Support facilities are housed within the fort's historic structures and include a visitor center, museum, auditorium, curatorial storage areas, and administrative offices.

Opportunities available in the Historic Core Resource Opportunity Area include:

- Viewing opportunities—give visitors opportunities to see, hear, and learn about the park's prime resource.
- Interpretive opportunities—are provided through personal service programs. Educational materials, audiovisual media programs, exhibits, and other materials are available in the visitor center, museum, and auditorium.
- Cultural opportunities—in this zone contain the prime resources. Visitors can experience the historic resources and the historic essence (parade ground, buildings, foundations, and ruins) on a firsthand and close-up basis.

Natural Backdrop ROA

The Natural Backdrop Resource Area is located along a series of natural geological

Officers' Row from Sleeping Lion Mountain

ridges and outcrops along the western boundary of the site.

It includes the two cliff walls of Hospital Canyon and a rugged steep escarpment running north and south that form the prominent viewscape as seen from lower elevations. Grassland and brush skirt the base of volcanic rock formations. From trails on these ridges, visitors are provided with bird's-eye views of the fort as well as panoramic vistas of the adjacent slopes of the Davis Mountains and flatland areas to the east. This ROA can in turn be viewed from the Foreground ROA and the Historic Core ROA.

Mixed vegetative cover is found throughout this zone. Areas of sagebrush are intermixed with large clusters of mountain scrub, while desert cacti and pinyon juniper woodland dominate other areas. The seasons are highlighted by the color changes that occur throughout this zone, especially during spring and autumn, providing visitors opportunities to see the breathtaking beauty characteristic of the Davis Mountains.

This ROA also contains the bulk of the hiking and natural viewing opportunities. Trails to lookout points traverse the northwest canyon rim. It also contains the majority of the park's archeological resources. This area is most important to the fort's natural setting, ensuring that the fort maintains its late 19th-century appearance, and, therefore, this ROA is the most sensitive to development.

Opportunities that occur within the Natural Backdrop Resource Opportunity Area include:

- Wildlife viewing opportunities—rich in a variety of species, including whitetail and mule deer, squirrel, porcupine, bobcat, ringtail, raccoon, fox, mountain lion, and a variety of birds and reptiles.
- Recreational opportunities—physically demanding trails on the North Ridge provide significant panoramic views and opportunities to explore.

Enlisted Men's Barracks from Sleeping Lion Mountain

Squad Room of Refurnished Enlisted Men's Barracks

- Cultural opportunities—areas of interest include historic resources such as the cemetery and water storage site.
- Rural Texas landscape and Davis Mountains—the area is a reminder of the natural and primitive nature that at one time composed much of the West.

MANAGEMENT PRESCIPTIONS

Management Prescriptions, common to all alternatives, provide direction for managing the resource opportunity areas (specific identified areas of land) within the park. These "Management Prescriptions" also outline proposed management strategies or actions. They are different from Resource Opportunity Areas because they describe the proposed use of areas within the site rather than the resources themselves.

Three management prescriptions have been identified for Fort Davis National Historic Site. They are: Historic Interpretive/Developed, Undeveloped Landscape, and Outlying/Modern Development. Each of the Management Prescriptions is described below and each details desired visitor experience and resource conditions within a broad framework for the human use of the site. The following six components—visitor experience, access, natural resource management, cultural resource management, facilities, and maintenance—have been identified as management prescription categories for Fort Davis.

Historic Interpretative/Developed

The historic interpretive/developed management prescription includes the areas where the majority of interpretation takes place. It encompasses those parts of the park where modern development and/or

intensive use substantially alter the natural environment. The area is managed as a historic district and is the main focus for interpretation at the park.

This area provides an experience that is basically facility dependent (e.g. visitor center, museum, auditorium, restored and refurnished buildings, administrative facilities), which helps to make the visitor's park experience more enjoyable and educational.

This area would accommodate the highest levels of use in the park. Visitor activities would be fairly structured and directed and would involve little challenge. Support services and facilities could be moderate. Visitor contacts and contacts with NPS personnel could be frequent in this area, especially during peak visitor periods. Contacts could be less frequent during the off-peak season but might still be common compared with other management areas. There could be little or no opportunity for solitude. Relatively intensive resource management activity could be required to mitigate impacts associated with high levels of visitor use and development. Although natural processes would be perpetuated wherever possible, a high degree of encroachment and human intrusion to the natural and cultural environment could be evident.

Visitor Experience—This area provides for the primary experience of most visitors, introducing them to many of the park's significant resources. The area also presents the park's primary interpretive themes. Management emphasizes sights and sounds of the military history associated with park resources.

Living history involves visitors in active learning experiences, teaching them about the history and life of the fort. Exhibits emphasize the role of the military during the frontier Indian Wars period.

Films and publications available at the visitor center/auditorium area convey an understanding of the park and its natural and cultural resources. Tours by NPS personnel could be available. Additional orientation information would assist visitors in planning their stay in the park or region.

Access—Access would be easy. Pedestrian access along improved trails would allow for visitor access to a variety of environments. Hardened trails could be provided in areas around the visitor center and in other areas of high use identified to give visitors an overview and familiarity with park resources. Barrier-free design is provided in selected areas to permit visitors with physical impairments to experience representative park settings.

Natural Resource Management—The natural environment, which includes the cultural landscape, is preserved to the greatest extent possible, while accommodating high levels of use and protection of the sensitive historic fabric.

Vista site modifications may be used to improve views in this area. Visitors would be restricted or directed to trails to limit resource impacts. Significant soil and vegetation impacts occurring near high-use sites could be mitigated through periodic closures, the use of natural materials to more clearly define use corridors, and increased enforcement techniques. Native and historically significant species would be used for revegetation. Landscaping would be done with native species or those species documented to have been present during the active fort period. Mowing and selective removal/pruning of trees may also be done where appropriate or to enhance visitor safety, consistent with the park's historic scene.

Cultural Resource Management—Resources or sites that are designated as outstanding cultural features might be restored in accordance with NPS Standards. Resources or sites designated as significant cultural features and cultural landscapes will be preserved or restored depending on the

degree of importance to the visitor's understanding of the purpose of the park or settlement and use of the region. Archeological sites would be protected. Coordination and consultation with the Texas Historical Commission would be a part of the process.

Facilities—Developments must be compatible and consistent with the historic resource. Existing and potential modifications might include unsurfaced access roads, restored dikes and ditches, and other treatments that would enhance the historic scene.

Maintenance—Maintenance activities could involve maintaining existing facilities (cleaning, painting, crack sealing, chip sealing, striping, etc.), landscaping, providing for visitor convenience and comfort, protecting resources, irrigating, and restoring areas disturbed by human activities. Roads, buildings, signs, walks, interpretive displays, landscaping, and other facilities would be maintained on a regular basis. Power tools could be used for routine maintenance activities, and heavy equipment could be used for road and utility system repairs, development, and maintenance.

Undeveloped Landscape

The undeveloped landscape management prescription consists of limiting development and allowing the natural environment to thrive. This management prescription is applied to areas where development would detract from the historic core resource opportunity area.

This management prescription serves to maintain a landscape that is predominantly natural and brings the visitor in direct contact with the park's natural environment. Management accommodates visitors wishing to experience the park's superlative cultural resources on foot. Contacts among visitors and with NPS personnel are less frequent than those in areas managed under the historic interpretive/developed prescription. Contacts are less frequent during midweek and off-season periods, when opportunities for solitude and seclusion would be greater.

The landscape setting appears predominantly natural, although evidence of facilities that blend with surroundings might be present. Emphasis is placed on minimizing human impacts on sensitive environments, cultural resources, habitats, and species.

Areas managed as Undeveloped Landscapes would contain historic ruins of first and second fort structures, the area where the post cemetery was located, nature trails and prehistoric sites.

Visitor Experience—This area brings the visitor in direct contact with the park's natural environment. The integrity of natural and cultural resources, including the cultural landscape, would be preserved. Interpretive media would be limited to small interpretive signs and/or wayside exhibits. This area provides a sense of being immersed in the natural and cultural landscape, creating a sense of oneness with the historical past.

Access—Access can vary from easy to moderately challenging. This area has one main unpaved service road that runs through a portion of it. Public access is restricted to established trails and limited to foot traffic. No bicycles or motorized vehicles are permitted.

Natural Resource Management—The natural environment, which includes the cultural landscape, is preserved. The area is monitored to avoid overuse. Trail use and other intrusive visitor impacts are actively mitigated.

Emphasis is placed on minimizing human impacts on sensitive environments, cultural resources, habitats, and species. Management would reduce or minimize the impacts of all uses. If impairment occurred, mitigating actions, such as temporary

Post Hospital

closures, revegetation, or restrictions on uses, would be implemented as required.

Cultural Resource Management—Resources or sites that are designated as outstanding cultural features are stabilized to protect the integrity of the resource. Other resources designated as significant cultural features or landscapes could be stabilized depending on the degree of importance to the visitor's understanding of the purpose of the park or settlement and use of the region. Archeological sites would be protected. Coordination and consultation with the Texas Historical Commission would be a part of the process.

Facilities—No development is allowed other than those associated with trails, stabilization, and visitor safety.

Maintenance—Activities include protecting cultural resources from excessive visitor use, maintaining and/or stabilizing cultural sites, and providing resource protection. Closure of the area to visitors could occur as well as the restoration of areas disturbed by human activity. Primitive trails would use native materials that blend in with the surrounding environment. Modern materials such as cement and metal guard rails would only be utilized in areas where visitor safety is compromised.

Outlying/Modern Development

This Outlying/Modern Development Prescription is unique because it is not directly related to visitor experience but is necessary for visitor use. The areas where this prescription applies are utilized to facilitate maintenance and preservation of the site. They include the maintenance

complex, housing/office area, a modern building (Bally Building) used for curatorial storage, and an outside area used to stockpile building materials. Areas managed under this prescription frequently would contain maintenance vehicles, and equipment that often conflict with the historic and natural scene.

Visitor Experience—The maintenance and housing complexes and the Bally Building could be viewed as somewhat detrimental to the visitor experience. They partially obstruct a view of the park for visitors entering the fort from Highway 17-118 north, therefore, infringing on the cultural and natural landscape of the site. On the reverse, they served to block a view of modern business development outside the site for those visitors already in the park. They also serve to muffle modern highway sounds from the historic core area.

The maintenance "stock pile" area, located in Hospital Canyon can be seen by visitors hiking the Hospital Canyon Nature Trail. This area also may be seen as an encroachment to the resource as well as on the historic scene.

Access—Access to these areas is easy, but restricted. Visitors would not normally be in these areas unless they had business, had special collecting permits, or were researchers desiring to see museum collection items or historic records.

Natural Resource Management—The natural environment, which includes the cultural landscape, is preserved to the maximum extent possible while accommodating the maintenance/housing/ curatorial facilities necessary for the operation of the park.

Cultural Resource Management—Cultural resources, which include the cultural landscape, is preserved to the maximum extent possible while accommodating the maintenance/housing/ curatorial facilities necessary for the operation of the park.

Facilities— This management prescription allows for modern developments and activities related to park operations and maintenance.

Such uses may modify and detract from the natural and cultural environments. Even though modern developments and activities are allowed, they should be kept to a minimum and only allowed if they are necessary for the operation and maintenance of the park

Maintenance—Maintenance activities serve to protect the natural and cultural resources of the park and, where possible, to restore areas disturbed by human activities to their historic appearance. Activities must not conflict with park values.

CHAPTER 3: ALTERNATIVES

This document presents four alternatives for the management of Fort Davis NHS, including the NPS proposal. Alternatives are broad and conceptual in nature. Each alternative provides for a distinctly different method of achieving the Desired Future Conditions outlined under the Purpose and Need for the Plan.

Volunteers and Staff Members Conducting an Artillery Demonstration

The four alternatives include (A) a "no-action" alternative, (B) a compliance alternative, (C) a two-phased enhanced visitor services and resource management alternative, (D) an improved visitor services and resource management with emphasis on expansion and relocation. The National Park Service's preferred proposal is Alternative C.

In each of the four alternatives, the following categories or topics are addressed: General Emphasis, Outreach and Partnership, Cultural Resource Management, Land Use Management, Interpretation, Natural Resource Management, Resource Protection, Possible Future Facility and Development Changes, Costs, and Future Plans and Studies.

The final plan, when adopted, will serve as the park's general management plan. The plan will guide the management and development of Fort Davis for the next 10 to 15 years.

ALTERNATIVE A — NO ACTION

This alternative describes the no-action alternative. It is presented conceptually as if the existing management was to continue without any significant changes. This alternative serves as a baseline for evaluating the changes and impacts of the three proposed action alternatives.

General Emphasis

Under the no-action alternative, existing administrative, maintenance, land use, and resource management activities would continue. Minimal changes, subject to available funding, would be implemented to bring unsatisfactory conditions into compliance with current regulations and policies. Present use patterns would serve as the basis for mapping management prescriptions. Existing levels of resource protection and interpretation would continue.

Existing visitor facilities would be maintained to support current activities, and no new facilities would be considered or built. Required improvements to safety, sanitation, and access for persons with disabilities would be completed as funding permitted.

Outreach and Partnerships

In keeping with advances in technology, a web site would be established that provides basic information about the park. It would be updated on an as-needed basis and would contain information on upcoming events and programs. Current partnerships with the Friends of Fort Davis National Historic Site and other local and area organizations, whose focus is resource protection, would continue to be encouraged.

The park would continue to encourage adjacent landowners to use their land in ways that complement park values, thereby promoting the natural and scenic character of the landscapes.

The existing research/library facility would be maintained and would continue to be accessible to the general public. New publications and documents would be added, but without expansion or change to the facility.

Cultural Resource Management

Curatorial—The park would continue to maintain the collection in the current condition. Deficiencies identified in the National Park Service's checklist for Preservation and Protection of Museum Collections for Fort Davis National Historic Site would be addressed only as resources became available.

The park would continue to catalog and enter into the National Park Service Automated National Catalog System a small number of significant museum objects each year, but would be unable to catalog the backlog of uncataloged field collections without special funding. Exhibits would be maintained in their current conditions. Temporary exhibits would be changed periodically, and items in permanent exhibits rotated at regular intervals in order to help protect and preserve them.

Archeology—Archeological sites would be preserved and protected, using existing monitoring and conservation methods.

Historic Preservation—Much of the historic fabric of Fort Davis National Historic Site consists of adobe and stone buildings, ruins, and foundations. Current preservation techniques and practices would continue to be used in the conservation of these remains. Loss of some original fabric could be expected. Progress on maintaining or raising the condition of structures to a good condition would be dependant on special project funding.

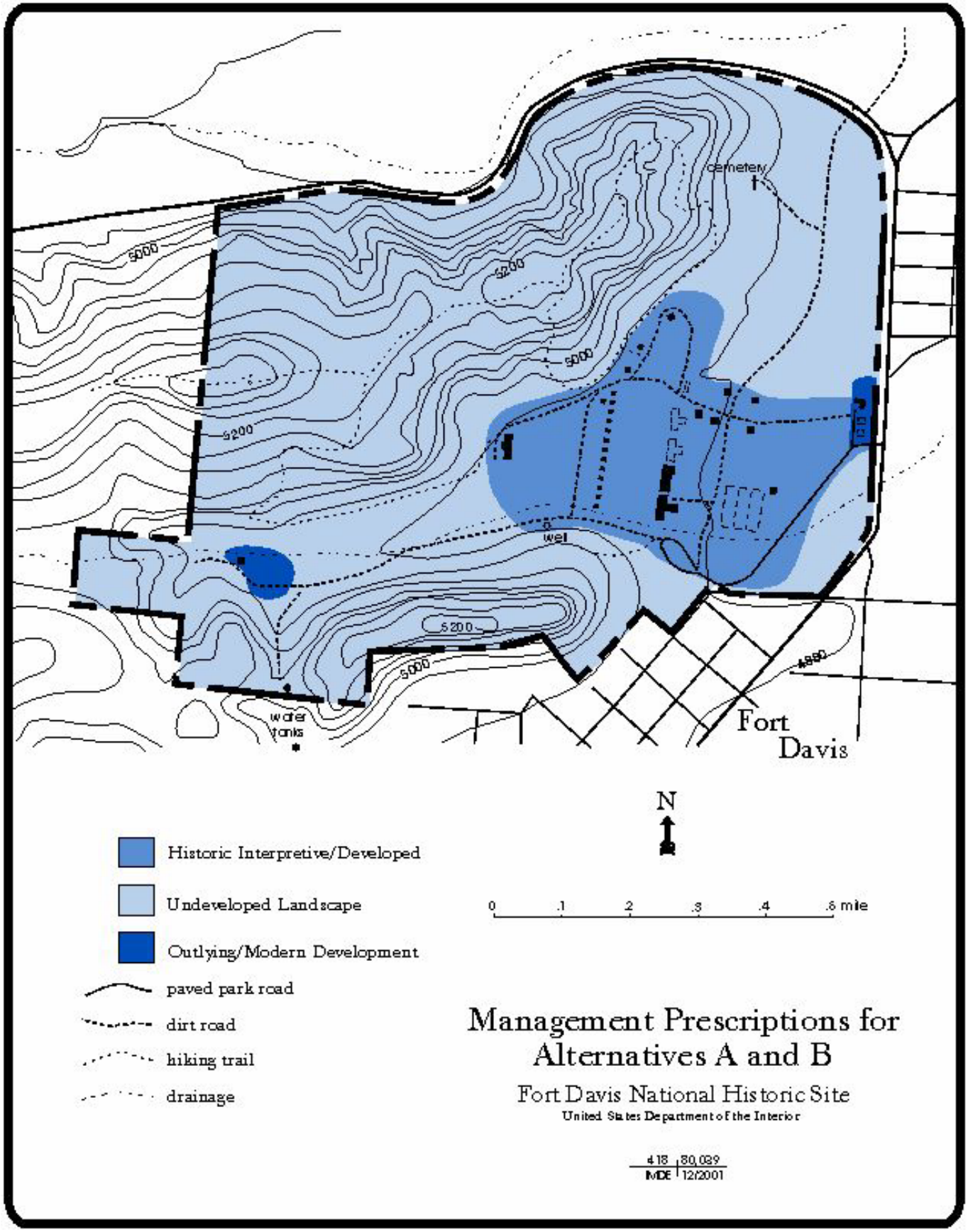
The national database lists 110 structures in Fort Davis National Historic Site on the List of Classified Structures. According to park records, many more structures exist. The inconsistencies between the park's data and the national database would continue to exist. Historic structures and ruins would be monitored and evaluated periodically.

Land Use Management

This alternative would provide no change in existing uses. The land would continue to be managed for the protection of the resources and the historic fabric.

Foreground Resource Opportunity Area (ROA)—The majority of the Foreground ROA would continue to be managed under the Undeveloped Landscape Management Prescription. No new developments, either interpretive or resource management related, would be introduced into this area.

The maintenance and housing complexes and museum storage facility (Bally Building) located near the entrance to the park would continue to be managed under the Outlying/Modern Development Management Prescription. No additions or


cemetery
5000
5200
5000
5200
well
5200
5000
water tanks
4880
Fort Davis
N
Historic Interpretive/Developed
Undeveloped Landscape
Outlying/Modern Development
paved park road
dirt road
hiking trail
drainage
0 .1 .2 .3 .4 .5 mile
Management Prescriptions for Alternatives A and B
Fort Davis National Historic Site
United States Department of the Interior
418 80,039
MDE 12/2001

changes to this area would be implemented.

A garden site and unique stand of historic cottonwood trees, dating from the mid-to-late 19th century, would continue to be used as a picnic and rest area and would be managed under the Historic Interpretive/Developed Management Prescription.

Historic Core Resource Opportunity Area (ROA)— The majority of the Historic Core ROA would continue to be managed under the Historic Interpretive/Developed Management Prescription. The area would remain the main focal area for interpretation and visitor services. The natural quiet would be maintained to serve as a backdrop for the daily presentation of historic bugle calls and the sounds of a dress retreat parade. Park staff will continue to maintain this setting within the park. No alterations would be made to change either the recordings or the amplifying equipment used to project these sounds.

The western reaches of the Historic Core ROA, located in hospital canyon, contain many first fort structures. These would continue to be managed under the Undeveloped Landscape Management Prescription. The natural and cultural environment of this area would be maintained and the existing natural processes and conditions perpetuated. This area, however, is affected by the presence of a maintenance storage yard that is managed under the Outlying/Modern Development Management Prescription. This site is physically and visually incompatible with the natural and cultural environment of the rest of the canyon. Under this alternative, it would continue to be managed as a maintenance yard. The remainder of the canyon would be managed under the undeveloped landscape prescription.

The present parking area, which contains spaces for cars, buses, motor homes, and two spaces for visitors with disabilities, would not be modified or changed.

Backdrop Resource Opportunity Area (ROA)— For the most part, the appearance and environment of the natural backdrop of Fort Davis National Historic Site is rugged, with cliff walls featuring steep slopes that form prominent landmarks. This is the area that offers the majority of hiking and nature viewing opportunities. The natural landscape of this backdrop is important to the fort's historic setting, and it also helps visitors visualize its 19th-century appearance.

The Backdrop ROA would be managed under the Undeveloped Landscape Management Prescription. The natural and cultural environment of this area would be maintained and the existing natural processes and conditions perpetuated.

No development would be permitted other than those associated with trails and visitor safety and these would result only in minimum modification to the natural environment. Signs that blend well with the environment and semi-primitive trails might be present. Primitive trails would be maintained to NPS unpaved standards.

Interpretation

Interpretive programs would continue to focus on the history of Fort Davis, and life at the fort, primarily from the military perspective. The current informational video, which highlights the role played by Fort Davis during the frontier Indians Wars of the late 19th century, the current bugle call and dress retreat sound programs would continue to be enjoyed by visitors. Interpretive messages, including information on resource protection, would continue to be provided to all visitors.

Training would be provided based on available funding in order that employees in the interpretive division would have the opportunity to achieve essential or basic level competencies identified in their career

field. Educational programs and services would continue to focus on curriculum for grades 4 through 7.

Research into 19th-century military and civilian records would continue to ensure the accuracy and quality of interpretive programs, interpretive literature, and interpretive exhibits.

Living history clothing and equipment would be sustained at the current levels of maintenance.

The park would make every effort to maintain the current cadre of volunteers and to continue to recruit new volunteers for the program.

Natural Resource Management

Wildlife—Wildlife would be managed to protect the natural habitat of species known to inhabit the park at the current level.

Vegetation—Vegetation would be managed at the current level to preserve the historic appearance/landscape of the park. The unique stand of historic cottonwoods would be perpetuated and protected.

Wetlands/Floodplain/Flash Flood—Since the establishment of Fort Davis in 1854, the periodic flash flooding of the site has plagued military personnel and now park managers. Given the small size of the watershed and the fort's position on an alluvial fan, some flooding may occur during summer months when rainfall is average or above average.

During the second fort period (1867-1891), the army constructed a series of dikes and ditches to alleviate flooding of the fort. These protective structures are still in use, but because of limited effectiveness (less than 100-year flood protection), erosion, human disturbances, and extensive maintenance requirements; these safeguards are not adequate to protect the area. Under this alternative, these insufficient structures would not be upgraded to protect park resources from flash flooding and therefore all great storm events would cause some flooding damage to historic structures close to the channel.

Fort Davis has two ephemeral drainage corridors that transport precipitation run-off from the historic ditch/dike system to ephemeral streams outside of the park. Low-lying areas of these drainage corridors meet NPS criteria for a wetland. Under this proposal these seasonal wetland areas would not be changed.

Intrusive Noise—The bugle calls and dress retreat parade sound programs would continue to be used to help cover up or drown out modern sounds from the parking area and adjacent highway. The parking area would be periodically monitored in order to reduce noise levels.

Air Quality—The air quality of the park is good, even though on some days, particularly those when air currents are from the southeast, the site experiences visibility impairments. Fort Davis National Historic Site would continue to support air quality programs, both in the public and private sectors.

Resource Protection

In order to ensure protection of the resources as well as the safety of the visitors, routine patrols of the grounds and structures would be maintained at the current level.

Only one of the park's historic structures is equipped with a sprinkler system for fire suppression. Under this alternative, no other historic structures would be outfitted with fire suppression systems.

The park's water lines are in fair condition, but are not large enough in diameter to provide necessary water volume for fire protection of the historic buildings. This inadequate water system/supply to meet the protection needs of the park would remain status quo.

The park does not have a fire truck serviceable to fight structural fires, and not all employees who have been red-carded have had proper fire suppression training. These conditions would remain the same under the no-action alternative.

The fort's historic buildings that have been modified for electricity do not have electrical systems that meet National Electrical Code (NEC) standards. The electrical systems would not be upgraded to meet national code standards.

Two-Story Shared Officers' Quarters

Possible Future Facility and Development Changes

There would be no changes to facilities. The no-action alternative would retain current uses of park resources and the status quo on development and organization. Facilities would be improved to meet standards as funding permits. No construction or restoration work would be undertaken. Existing facilities and structures would continue to serve their present functions. Only routine maintenance would be carried out.

Operational Costs

Current Budget and Staff—The FY2000 budget for Fort Davis National Historic Site is $942,000 as compared with $774,000 in FY1999. In addition to the standard increase for inflation, the FY2000 budget reflects an increase of $110,000 for a new cultural resource management position and for 2 subject-to-furlough cultural resource preservation worker positions.

Current staffing levels include 19 permanent (P) and 5 seasonal (S) full-time equivalencies (FTEs), for a total of 24. The breakdown is as follows: Interpretation and Visitor Services (4 P, 1 S), Facility Management (6 P, 3.5 S), Cultural Resource Management (5 P – which includes 2 – 6 month subject- to-furlough positions), Historian (1 P), Administration (2 P, .5 S), and Superintendent (1 P).

All employees share visitor service, protection, and conservation functions. These functions are:

- **Superintendent (1 P)**. Responsible for the general management and oversight of the park, including establishing long-term mission goals and objectives, setting and or ensuring appropriate policy and procedure, and serving as the liaison with other agencies, government officials, and other entities and organizations.
- **Facility Management (6 P, 3.5 S)**. Responsible for design, construction, maintenance, and general oversight of all area facilities, including nature trails, picnic area, public rest rooms, interpretive facilities, roads and trails, historic and non-historic buildings, and utilities.
- **Interpretation and Visitor Services (4 P, 1 S)**. Responsible for the operation of the visitor center, interpretive waysides and exhibits, audio and audiovisual presentations, five furnished structures, publications, environmental and curriculum-based education and outreach, and interpretive programs and demonstrations.

Responsibilities for providing law enforcement (with an emphasis on protecting park resources and visitors), search and rescue, fire suppression, fee collection, monitoring and research of natural resources, including wildlife, flora, and air and water quality, are also provided for under this grouping.

- **Cultural Resource Management (5 P)**. Provides monitoring and research of cultural resources, including archeological and historical resources. Responsible for preservation, stabilization, and documentation of historic ruins, buildings, and features. Responsible for the accountability, preservation, and protection of the museum collection.
- **Historian (1 P)**. Responsible for planning and conducting historic research and, in conjunction with resource management, monitoring cultural resources.
- **Administration (2 P, .5 S)**. Provides essential support in personnel services, payroll, property, contracting, purchasing, and budget.

Development Costs

There are no development costs for the no-action alternative.

Future Plans and Studies

There would be no change to currently scheduled plans and studies.

ALTERNATIVE B—SAFETY, PROTECTION, AND ACCESSIBILITY COMPLIANCE

Under this alternative required improvements to safety, resource protection, sanitation, and access for persons with disabilities would be emphasized.

General Emphasis

Existing levels of resource protection and interpretation would continue.

The fort's historic setting and historic viewscape would be protected and preserved and modern intrusions would be minimized in the historic core area.

Historic fabric would be restored on a piecemeal basis, contingent on the availability of funding. Loss of original ruins and portions of structures could result. Progress on maintaining or raising the condition of structures to good would be minimal.

Interpretive programs would continue to focus on the history of the fort, primarily from a military perspective. The current informational video, which highlights the role played by Fort Davis during the frontier Indian Wars of the late 19th century, the current bugle call tape, and sounds of a dress retreat program, would continue to be enjoyed by visitors. Interpretive messages, including information on resource protection, would continue to be provided to all visitors. New programs would be limited to meet interpretive, research, and educational needs.

In this alternative (as with Alternatives C and D), the interior of the post hospital would be partially restored and refurnished to more fully tell the story of Fort Davis and therefore provide the visitors with a more comprehensive learning experience. This restoration and refurnishing project would be dependent on partnerships resulting in private sector funding.

The park would continue to encourage adjacent landowners to use their land in ways that complement park values.

Outreach and Partnerships

In keeping with advances in technology, a web site would be established that provides basic and educational information about the park. Included would be a web page

Commanding Officer's Quarters Parlor

containing basic information on the Buffalo Soldiers as well as links to other authoritative sources on the Internet containing information on these soldiers of African-American descent who served in the late 19th-century army.

Basic education programs emphasizing the general history of the fort would be available. Current partnerships with the Friends of Fort Davis National Historic Site and other local and area organizations, whose focus is resource protection, would continue to be encouraged. The existing research/library facility would be maintained and would continue to be accessible to the general public. New publications and documents would be added, but without expansion or change to the facility.

Cultural Resource Management

Curatorial—As with Alternative A, the park would continue to maintain the collection in the current condition. Deficiencies identified in the National Park Service checklist for Preservation and Protection of Museum Collections for Fort Davis NHS would be addressed. The park would continue to catalog a small number of museum objects each year, but would be unable to process the backlog of uncataloged field collections without special funding.

Exhibits would be maintained in their current conditions. Temporary exhibits would be changed periodically, and items in permanent exhibits rotated at regular intervals in order to help protect and preserve them.

The park would continue to explore new opportunities for partnerships and funding to ensure current levels of preservation, protection, and other curatorial work.

Archeology—As with Alternative A, archeological sites would be preserved and protected using existing monitoring and conservation methods.

Historic Preservation—As with Alternative A, current preservation techniques and practices would continue to be used in the conservation of historic remains. Loss of some original fabric could be anticipated. Progress on maintaining or raising the condition of structures to a good condition would be dependant on special project funding.

The national database lists 110 Fort Davis National Historic Site structures on the List of Classified Structures. According to park records many more structures exist. The inconsistency between the park records and the national listing would be resolved. The database would be completed, providing information on all known structures, ruins, and sites. The information would be updated continually and monitoring would be provided through analysis of the data.

Land Use Management

This alternative would provide no significant change in existing land use prescriptions. Under this alternative, a Cultural Landscape Inventory for Fort Davis National Historic Site would be developed and recommendations would be implemented as appropriate.

Minor facility changes, such as modifying the existing parking area to increase capacity, would not change land use.

The proposed land use and management prescriptions for each Resource Opportunity Area are described below.

Foreground Resource Opportunity Area (ROA)—As in Alternative A, the majority of the Foreground ROA would continue to be managed as an Undeveloped Landscape. No new developments or interpretive programs would be introduced into this area.

The maintenance and housing complexes located near the entrance of the park would continue to be managed under the Outlying/Modern Development Management Prescription. No additions or changes to this area would be implemented.

A garden area and unique stand of historic cottonwood trees, dating from the mid-to-late 19th century, would be managed under the Historic Interpretive/Developed Management Prescription and would continue to be used as a picnic and rest area.

Historic Core Resource Opportunity Area (ROA)— As in Alternative A, the majority of the Historic Core ROA would continue to be managed under the Historic Interpretive/Developed Management Prescription. This area would continue to be used as the main focal point of interpretation at the fort and would provide visitor services through the visitor center, administration offices, auditorium, furnished buildings, and living history programs. The natural quiet would be maintained to serve as a backdrop for the daily presentation of historic bugle calls and the sounds of a dress retreat parade. No alterations will be made to change either the recordings or the amplifying equipment used to project these sounds.

The western reaches of the Historic Core ROA, located in hospital canyon, contain many first fort structures. These would continue to be managed under the Undeveloped Landscape Management Prescription. The natural and cultural environment of this area would be maintained and the existing natural processes and conditions perpetuated. This area is marred, however, by the presence of a maintenance storage yard that is managed under the Outlying/Modern Development Management Prescription. This area is physically and visually incompatible with the natural and cultural environment of the rest of the canyon. Under Alternative B this area

would continue to be used as a maintenance yard. The remainder of the canyon would be managed under the Undeveloped Landscape Prescription and would not receive any further development or be interpreted for the visitors.

The present parking area contains spaces for cars, buses, motor homes, and two spaces for visitors with disabilities. Under this alternative, the parking area would not be enlarged, but would be modified to allow for the accommodation of more vehicles.

Backdrop Resource Opportunity Area (ROA)— As in Alternative A, the Backdrop ROA will be managed under the Undeveloped Landscape Management Prescription. The natural and cultural environment of this area would be maintained and the existing natural processes and conditions perpetuated. This area is reserved for hiking and natural observation. No developments would be permitted other than those associated with trails and visitor safety. Signs that blend well with environment and semi-primitive trails would be permitted. Primitive trails would be maintained to an unpaved NPS standard.

Interpretation

The history of Fort Davis would be presented so as to include the story of the various cultural groups associated with it. Guided by the Comprehensive Interpretive Plan, the main focus would continue to be from the military perspective, but interpretive programs, literature, and exhibits would additionally include the story from the perspectives of American Indians and civilians.

Training would be provided based on available funding in order that employees in the interpretive division would have the opportunity to achieve essential or basic level competencies identified with their career field.

Educational programs and services would continue to focus on enriching curriculum for grades 4 through 7. Orientation talks and interpretive programs would include a resource protection message and information about natural resources. Research into 19th-century military and civilian records would continue to ensure the accuracy and quality of interpretive programs, interpretive literature, and interpretive exhibits.

As with Alternative A, the living history clothing and equipment would be sustained at the current levels of maintenance.

The park would make every effort to retain the current cadre of volunteers and to recruit new volunteers for the program.

Natural Resource Management

Wildlife—Programs to manage and protect the known species that inhabit the park and their natural habitat in the park will be increased. As a member of the Chihuahuan Desert Network, whose purpose is to inventory and monitor vertebrates and vascular plants within the member parks' boundaries, the park will complete a 90% inventory and then submit annual proposals as part of the network to receive funding to complete monitoring projects.

Vegetation — Vegetation would be managed at the current level to preserve the historic appearance/landscape of the park. Recommendations proposed in the CLI and CLR would be implemented as appropriate. An inventory and monitoring program for vascular plants would be implemented through the Chihuahuan Desert Network once funding has been approved at the national level. The unique stand of historic cottonwoods would continue to be perpetuated and protected.

Wetlands/Floodplain/Flash Flood — The Water Resources Division of the National Park Service has identified options for improving the management of floodwaters in and around Fort Davis

National Historic Site. One of these options involves the modification of the North Ditch to maximize its conveyance of water. This would reduce flooding at the south end of the site for flooding events of less than 100-year flood, thus providing more protection for the historic buildings, foundations, and ruins located in this area. Since the South Channel can only carry the 25 to 50-year flood flow, all greater storm events would cause some flooding damage to historic structures close to the channel.

Under this alternative, the North Ditch Option would be used to protect park resources. Periodic maintenance of the North Ditch after flooding events would be required.

Wetlands located downstream of both the North Ditch and South Channel dike system would not be modified in this alternative.

Intrusive Noise—As with Alternative A, the parking area would be periodically monitored in order to reduce the noise levels.

The sound system projecting military recordings would continue to be used to give visitors an appreciation and understanding of the fort and to drown out modern intrusive sounds. Improvements would be made to maintain a high-quality sound system for these recordings.

As with Alternative A, should overflights become a noise problem in the future, appropriate studies would be undertaken and a recommendation proposed.

Air Quality—As in Alternative A, Fort Davis National Historic Site would continue to support air quality programs both in the private and public sectors.

Resource Protection

In order to ensure protection of the resources as well as visitor safety, routine patrols of the grounds and structures are conducted. The current level of these patrols would be maintained. Restored historic structures in which historic artifacts or historic furnishings are located, or in which park functions are conducted, would be installed with sprinkler systems for fire suppression.

In order to provide necessary water volume for the fire protection of historic buildings, the park's water systems would be upgraded. This would involve upgrading water lines that supply water from the town of Fort Davis. It also would involve making operational the park's own water system. Approved fire suppression equipment, including a fire truck serviceable to fight structural fires, would be acquired, and training for employees would be increased to meet fire suppression needs.

The fort's historic buildings that have been modified for electricity do not have electrical systems that meet National Electrical Code (NEC) standards. Under this alternative, the electrical systems in all buildings would be upgraded to meet NEC standards.

Possible Future Facility and Development Changes

Under this alternative, facilities relating to safety, resource protection, sanitation, and disability access would be improved. The following is a list of proposed facility changes under this alternative chosen.

- The park's water systems would be upgraded.
- The fire suppression system, which includes sprinkler systems in all buildings, would be upgraded.
- The electrical systems would be upgraded.
- Building standards to meet ADA requirements in the post hospital would be improved.
- Buildings within the existing maintenance area would be upgraded to meet CFR and OSHA standards.
- The parking area would be modified to increase capacity within the existing space.
- The post hospital would be partially restored and refurnished with private sector funding.

Operational Costs

Current staff and budget would be maintained.

Development Costs

There would be an expenditure of $612,000. (See Table 2)

Future Plans and Studies

- New Comprehensive Archeological Survey
- Condition Assessments of Archeological Sites
- Cultural Landscape Inventory
- Cultural Landscape Report
- Ethnographic Study
- Comprehensive Interpretive Plan
- Natural Resource Management Plan and Fauna Study
- Cultural Resource Management Plan
- Safety Plan
- Flash Flood Plan (includes Floodplain Map)
- Historic Preservation Plan identifying types and levels of treatment
- Structural Fire Management Plan
- Wildland Fire Management Plan
- Transportation Study: Should visitation reach 125,000 visitors a year, a study would be initiated to evaluate the feasibility of a transportation system from the town of Fort Davis.

ALTERNATIVE C—IMPROVED VISITOR SERVICES AND RESOURCE MANAGEMENT (NPS PROPOSAL)

This is the preferred alternative and is the plan the National Park Service is proposing to implement for Fort Davis National Historic Site over the next 10 to 15 years. This alternative has two phases: Phase 1 and Phase 2. Both phases are identical except that in Phase 2 the administrative offices, maintenance complex, maintenance storage yard in Hospital Canyon, employee housing, and curatorial "Bally" building would be moved outside of the park. Phase 2 could be accomplished with private sector funding.

General Emphasis

In this alternative quality visitor services would be enhanced and at the same time the preservation and protection of culture and natural resources would be prudently broadened. This alternative provides the balance and flexibility necessary to accomplish both of these objectives in a realistic manner.

Change in the fort's outward appearance would be minimal. There would be no further major exterior restoration or modern development. Well-balanced preservation, resource protection, and interpretive programs would complement one another. Existing buildings, ruins, and foundations would undergo stabilization and conservation measures so as to preserve their historical integrity.

Broader interpretive themes highlighting the more complex role of Fort Davis in the history of the American West would complement existing interpretive programs.

In this alternative (as with Alternatives B and D), the interior of the post hospital would be partially restored and refurnished to more fully tell the story of Fort Davis and therefore provide the visitors with a more comprehensive learning experience. This restoration and refurnishing project would be dependent on partnerships resulting in private sector funding.

The park would continue to encourage adjacent landowners to use their land in ways that complement park values, thereby promoting the natural and scenic character of the landscape.

Outreach and Partnerships

With an additional staff person (an educational specialist), a web site would be established that provides curriculum-based educational materials for grades K–12 for on-site and off-site use. In addition, the web site would have updated and detailed park information. It would contain web pages that provide authoritative information on the Buffalo Soldiers who served at Fort Davis. The web site would also provide links to other authoritative sources on the Internet containing information on these soldiers of African-American descent who served in the late 19th-century army.

Current partnerships with the Friends of Fort Davis National Historic Site and other local and area organizations, whose focus is resource protection, would be expanded. In addition, new partnerships with other preservation organizations and agencies (including the Texas Parks and Wildlife Department), educational institutions, and individuals would be actively developed.

The existing research and library facility would be expanded and upgraded. New publications and documents would continue to be added, but the facility would be made more accessible and more user-friendly for researchers as well as for the general public.

Cultural Resource Management

Curatorial—Under this alternative, all deficiencies identified in the National Park Service Checklist for Preservation and Protection of Museum Collections would be corrected with appropriate funding. Improved storage and office space and the installation of environmental controls in buildings that house artifacts would be provided.

Under this alternative, more artifacts (above the park's current goal of cataloging 250 items per year) would be cataloged, conserved, and preserved through staff increases (seasonal museum aide). Funding for a Cooperative Ecosystem Studies Unit (CESU), and an internship program would be actively solicited. Display space for temporary and permanent exhibits would be increased and modernized.

Archeology—Archeological sites would be preserved and protected using existing as well as more advanced methods of monitoring and conservation. Information gathered from analyzing, evaluating, and identifying artifacts from the sites would be shared with the public through exhibits and publications. Interns would be actively sought to assist with the recording of data and evaluation of the sites.

Historic Preservation—Current conservation practices would be continued, but in addition, new state-of-the-art preservation techniques could be applied.

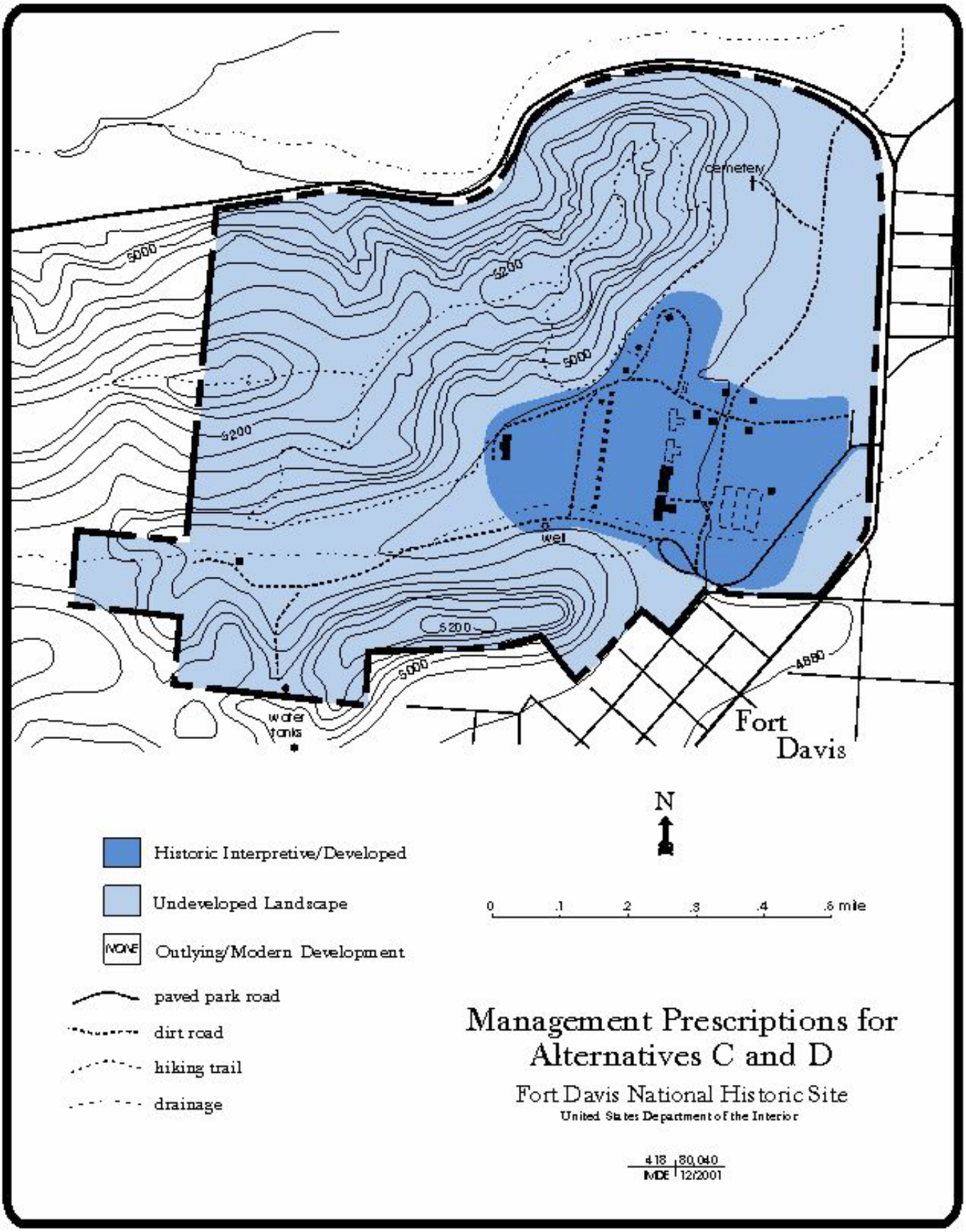
The addition of a cultural resource specialist (historic architect, architectural conservator, exhibit specialist, or historic craft specialist) would provide additional support with historic preservation, documentation, and condition monitoring.

Inconsistencies between the number of structures in the national database's List of Classified Structures and the number of historic structures listed in the park's records would be resolved. The database would be completed, providing information on all known structures, ruins, and sites. The information would continually be updated, and monitoring would be provided through analysis of this data.

The addition of a clerk/typist for the Cultural Resource and Maintenance Divisions would facilitate better record keeping and documentation.

Land Use Management

In Phase 1 of this alternative, some facilities would be redesigned. In Phase 2, in addition to the redesign of some facilities, other facilities would be relocated outside the park boundary.


cemetery
5000
5200
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5200
well
5200
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4880
water tanks
Fort Davis
N
0 .1 .2 .3 .4 .5 mile
Historic Interpretive/Developed
Undeveloped Landscape
NONE
Outlying/Modern Development
paved park road
dirt road
hiking trail
drainage
Management Prescriptions for Alternatives C and D
Fort Davis National Historic Site
United States Department of the Interior
418 80,040
MDE 12/2001

Foreground ROA— Current natural resource management policies would be maintained, thereby helping to ensure the perpetuation of the unique stand of historic cottonwood trees located adjacent to the paved entrance roadway. Recommendations contained in the Cultural Landscape Inventory (CRI) and Cultural Landscape Report (CLR) would be implemented as appropriate.

In this ROA, if Phase 2 is implemented, the maintenance complex, the curatorial "Bally" building, and the employee housing units would move to a location outside the park. The area would then be managed under the Undeveloped Landscape Management Prescription.

Historic Core ROA—The natural quiet that serves as a backdrop for the daily presentation of historic bugle calls and the sounds of a dress retreat parade would continue to be maintained. The recordings, however, would be revised to more closely reflect the military sounds of the 1880s, and the amplifying equipment used to project these sounds would be upgraded.

If Phase 2 is implemented, the administrative offices would be moved from their current location inside an historic enlisted men's barracks to outside the park. The space vacated would be redesigned and used for interpretive, library and curatorial functions.

The maintenance storage yard in hospital canyon would be removed and the area would be managed under the Undeveloped Landscape Management Prescription.

The parking area would be redesigned to provide for more vehicles.

Recommendations in the CLI and CLR for Fort Davis National Historic Site would be implemented as appropriate.

Backdrop Resource Opportunity Area (ROA)—As with Alternatives A and B, the Backdrop ROA would be managed under the Undeveloped Landscape Management Prescription. The natural appearance and environment of this ROA would be maintained.

Interpretation

As with Alternative B, the history of Fort Davis would be presented so as to include the story of the various cultural groups associated with it. Guided by the Comprehensive Interpretive Plan, the main focus would continue to be from the military perspective, but interpretive programs, literature, and exhibits would additionally include the story from the viewpoint of American Indians and civilians. In addition, more emphasis would be placed on interpreting the story of the first fort.

The current informational video would continue to be enjoyed by visitors, but improvements would be made in the dress retreat parade and bugle calls sound programs.

Curriculum-based educational programs and services would be developed for all grades K–12.

Training would be provided so that all interpreters would achieve the full competencies identified in their career field. Staff increases (2 full-time seasonal Park Guides) would provide additional support for the Division of Interpretation during periods of high visitation.

Orientation talks and interpretive programs would include a resource protection message and information about natural resources.

Research into 19th-century military and civilian records would be ongoing to ensure the accuracy and quality of interpretive programs, interpretive literature, and interpretive exhibits.

Living History clothing and equipment would be upgraded and adequate storage provided.

In Phase 2, a part of the space freed-up by the administrative offices moving off the park grounds would be used for an expanded research facility for historians, researchers, and the general public.

The park would continue to retain the current cadre of volunteers and at the same time develop new strategies for the recruitment of additional volunteers.

Support to "living history reenactors" and resource management groups would be a focus of the new strategies.

Natural Resource Management

Wildlife—Programs to manage and protect the known species that inhabit the park and their natural habitat in the park would be increased. As a member of the Chihuahuan Desert Network (the purpose of the network is to inventory and monitor vertebrates and vascular plants within the member parks' boundaries) the park will complete a 90% inventory and then submit annual proposals as part of the network to receive funding to complete monitoring projects. Corrective action will be taken as needed to ensure a healthy environment exists for wildlife based on the results of the monitoring projects.

The park will also implement an inventory and monitoring program for invertebrates as part of a network once the national program is established and funded.

Vegetation — Efforts would be increased to manage and preserve the historic appearance/landscape of the park. Recommendations proposed in the CLI and CLR would be implemented as appropriate. An inventory and monitoring program for vascular plants would be implemented through the Chihuahuan Desert Network once funding has been approved at the national level.

The park is a member of the Chihuahuan Desert-Shortgrass Prairie Exotic Plants Management Team. A more active program would be established to monitor and eradicate exotic plants through the use of this team. The unique stand of historic cottonwoods would be perpetuated and protected.

Wetlands/Floodplain/Flash Flood— In this alternative, the South Channel, actually the original and main drainage feature on site, would still carry the majority of the runoff on site, but both the North Ditch and the South Channel dike would be reconstructed to aid in flood protection during low to moderate floods. Wetlands along the ephemeral South Channel would remain largely unchanged with these flows. Wetlands that receive run-off from the North Ditch and the South Channel dike system would remain in place and receive periodic water during all flood events. No major impact to habitat or function is anticipated. Both the North Ditch and the South Channel dike system would be overwhelmed by flood flows of 50–100 year-events, since they are very light-duty structures.

Because of the nonconfining nature of the alluvial fan, the overbank flows are likely to occur as sheet flows and should not attain substantial depth. Since the South Channel can only carry the 25–50 year flood flow, all greater storm events would cause some flooding damage to historic structures close to the channel.

Protection would be provided to historic resources and to the enlisted men's barracks building that house the administrative offices, visitor center and museum.

Maintenance of the North Ditch and the South Channel dike system would be required after moderate-to heavy-flooding events, causing some short-term wetland and vegetation disturbance. Periodic grading, ditch cleaning, levee replacement, grade control installation, stone placement, and revegetation would be required.

Intrusive Noise—The bugle calls and dress retreat parade recordings would continue to be used to help cover up or drown out

modern sounds from the parking area and the adjacent highway. Interpretive messages would be used and enforcement increased to reduce the noise levels in the parking area.

The park would continue to maintain the high-quality visitor experience and ensure the protection of resources from detrimental effects caused by overflights. A problem with overflights does not exist at the present time. Should a situation arise in the future, appropriate studies would be undertaken and a recommendation proposed.

Air Quality—The air quality of the park is currently good. The site would continue to monitor the air quality and to support air quality programs both in the private and public sectors. Messages addressing air quality would be incorporated into interpretive programs.

Resource Protection

Under this alternative, there would be an increase in the number of routine patrols of the grounds and structures. Restored historic structures in which historic artifacts and furnishings are located, or in which park functions are conducted, would be equipped with sprinkler systems for fire suppression.

As with Alternative B, the park's water systems would be upgraded, additional fire suppression equipment acquired, and training for employees would be increased to meet fire suppression needs. As also proposed in Alternative B, the electrical systems in all buildings would be upgraded to meet NEC standards.

Possible Future Facility and Development Changes

The following possible future facility developments would be proposed under this alternative.

Phase 1

- The post hospital would be partially restored and refurnished with private sector funding.
- The fire suppression system, including sprinkler systems in all buildings, would be upgraded.
- The park's water systems would be upgraded.
- The electrical systems would be upgraded.
- Building standards to meet ADA requirements in the post hospital and other restored buildings, where practical, would be improved.
- Buildings within the existing maintenance area would be upgraded and expanded to meet CFR and OSHA standards.
- Parking area would be redesigned to increase capacity.

Phase 2

- The administrative offices would be relocated outside of the park. Vacated space would be used for interpretation, expansion of library services, and curatorial storage.
- Existing employee housing and maintenance complexes would be removed. The curatorial "Bally" building would be dismantled and moved outside of the park. Maintenance storage yards and areas located on the park would also be moved off-site. The moving of these functions outside of the park would enhance the historic scene and cultural landscape of the fort.

Operational Costs

Under this alternative funding would be sought for an increase of 6.5 FTEs, or an additional $194,000 in base funding would be required. (See Table 1, Operational Costs.)

Development Costs

Phase 1—This alternative would require an expenditure of about $1,017,500 for development-related improvements. (See Possible Future Development Costs, Table 2.)

Phase 2—This alternative would require an additional expenditure of $1,122,000 for development-related improvements,

including funding for advanced planning. These improvements could be funded through partnerships as appropriate. (See Table 2.)

Future Plans and Studies

- New Comprehensive Archeological Survey
- Condition Assessments of Archeological Sites
- Cultural Landscape Inventory
- Cultural Landscape Report
- Ethnographic Study
- Comprehensive Interpretive Plan
- Natural Resource Management Plan and Fauna Study
- Cultural Resource Management Plan
- Safety Plan
- Flash Flood Plan (includes Floodplain Map)
- Historic Preservation Plan identifying types and levels of treatment
- Structural Fire Management Plan
- Wildland Fire Management Plan
- Transportation Study: Should visitation reach 125,000 visitors a year; a study would be initiated to evaluate the feasibility of a transportation system from the town of Fort Davis.

ALTERNATIVE D — IMPROVED VISITOR SERVICES AND RESOURCE MANAGEMENT WITH EXPANSION AND RELOCATION

General Emphasis

In this alternative (as with Phase 2 of Alternative C), the administrative, maintenance, curatorial "Bally" building, and employee housing facilities would be relocated outside the park. Maintenance yards and storage areas would also be moved off-site. The vacated administrative office space would be redesigned to house additional interpretative, library, and curatorial functions. The maintenance and employee housing complexes would be removed, while the curatorial "Bally" building would be disassembled and moved off site for use. This alternative would reduce modern intrusions in the park, thus better preserving its historic integrity and cultural landscape.

Officers' Quarters

The museum would be completely redesigned and new exhibits/displays would be installed.

As with the other alternatives, change in the fort's outward appearance would be minimal. There would be no further major exterior restoration or modern development in the historic core. Well-balanced preservation, resource protection, and interpretive programs would be emphasized. Existing buildings, ruins, and foundations would undergo stabilization

and conservation measures so as to preserve their historical integrity.

As with Alternatives B and C, the interior of the post hospital would be partially restored and refurnished to enhance the fort's story. This project would be dependent on partnerships resulting in private sector funding.

The park would continue to encourage adjacent landowners to use their land in ways that complement park values.

Outreach and Partnerships

As with Alternative C, an additional person (educational specialist) would be added to the staff. A web site would be established that provides curriculum-based educational materials for grades K–12 for on-site and off-site use. It would have updated and detailed park information, authoritative information on the Buffalo Soldiers who served at Fort Davis, and links to other authoritative sources on the Internet containing information on these soldiers.

Current partnerships with the Friends of Fort Davis National Historic Site and other local and area organizations whose focus is resource protection would be expanded. As with Alternative C, new partnerships with other preservation organizations and agencies (including the Texas Parks and Wildlife Department), educational institutions, and individuals would be actively developed.

An improved research facility requiring dedicated space and state-of-the-art technology would be provided to serve and support individuals/groups interested in the history of Fort Davis.

Cultural Resource Management

Curatorial— The museum would be completely redesigned and new exhibits/displays installed. All deficiencies identified in the National Park Service Checklist for Preservation and Protection of Museum Collections would be corrected with appropriate funding. Office and storage space would be expanded. Environmental controls would be installed in buildings that house artifacts.

Under this alternative, more artifacts would be conserved, catalogued, and preserved through staff increases (seasonal museum aide). Partnerships and funding for a CESU and new internships would be actively solicited.

Archeology—Archeological sites would be preserved and protected using existing as well as more advanced methods of monitoring and conservation. Information gathered from analyzing, evaluating, and identifying artifacts from the sites would be shared with the public through exhibits and publications. Interns would be actively sought to assist with the recording of data and evaluation of the sites.

Historic Preservation—Current conservation practices would be continued, but in addition, new state-of-the-art preservation techniques could be applied.

The addition of a cultural resource specialist (historic architect, architectural conservator, exhibit specialist, or historic craft specialist) would provide additional support with historic preservation, documentation, and condition monitoring.

Inconsistency between the number of structures in the national database's List of Classified Structures and the number of historic structures listed in the park's records would be resolved. The database would be completed, providing information on all known structures, ruins, and sites. The information would continually be updated, and monitoring would be provided through analysis of this data.

The addition of a clerk/typist for the Cultural Resource and Maintenance Divisions would facilitate better record keeping and documentation.

Land Use Management

This alternative would provide for a decrease in facilities inside the park. Some facilities would be redesigned, moved, or relocated outside the park boundary. The removal of modern facilities from the park would help to better preserve the integrity of the historic scene, thus providing the visitor with a better historical perspective of the site.

Foreground ROA— As with Alternative C, current natural resource management policies would be maintained, thereby helping to ensure the perpetuation of the unique stand of historic cottonwood trees located adjacent to the paved entrance roadway. The Cultural Landscape Inventory (CRI) and Cultural Landscape Report (CLR) recommendations would be implemented as appropriate.

In this ROA, the maintenance complex, the curatorial "Bally" building, and the employee housing units would move to a location outside the park. The area would then be managed under the Undeveloped Landscape Management Prescription.

Historic Core ROA—As with Alternative C, the natural quiet would continue to be maintained. Historic bugle calls and dress retreat parade recordings would be revised to more closely reflect the military sounds of the 1880s, and the amplifying equipment used to project these sounds would be upgraded.

The administrative offices would be moved from their current location inside an historic enlisted men's barracks to outside the park. The space vacated would be redesigned and used for interpretive, library and curatorial functions.

The maintenance storage yard in hospital canyon would be removed and the area would be managed under the Undeveloped Landscape Management Prescription.

Recommendations in the Cultural Landscape Inventory (CLI) and the Cultural Landscape Report (CLR) would be implemented as appropriate.

The parking area would be redesigned and slightly expanded to provide for more vehicles.

Backdrop ROA— As with Alternatives A, B, and C, the Backdrop ROA would be managed under the Undeveloped Landscape Management Prescription. The natural appearance and environment of this ROA would be maintained.

Interpretation

As with Alternatives B and C, the story of Fort Davis would be presented from different viewpoints so as to incorporate the various cultural groups associated with its history. The main focus would continue to be from the military perspective, but interpretive programs, literature, and exhibits would additionally include the story from the viewpoint of American Indians and civilians. In addition, more emphasis would be placed on interpreting the story of the first fort.

The current informational video would continue to be enjoyed by visitors, but improvements would be made in the dress retreat parade and bugle calls sound programs.

Curriculum-based educational programs and services would be developed for all grades K–12.

Training would be provided so that all interpreters would achieve the full competencies identified in their career field. Staff increases (2 full-time and 1 part-time seasonal Park Guides) would provide additional support for the Division of Interpretation during periods of high visitation.

Orientation talks and interpretive programs would include a resource protection

message and information about natural resources.

Research into 19th-century military and civilian records would be ongoing to ensure the accuracy and quality of interpretive programs, interpretive literature, and interpretive exhibits.

Living History clothing and equipment would be upgraded and adequate storage provided.

A part of the space freed-up by the administrative offices moving off the park grounds would be used for expanded research facilities for historians, researchers, and the general public.

The park would continue to retain the current cadre of volunteers and at the same time develop new strategies for the recruitment of additional volunteers. As with Alternative C, support to "living history" reenactors and resource management groups would be a focus of the new strategies.

Natural Resource Management

Wildlife—Programs to manage and protect the known species that inhabit the park and their natural habitat in the park will be increased. As a member of the Chihuahuan Desert Network (the purpose of the network is to inventory and monitor vertebrates and vascular plants within the member parks' boundaries) the park will complete a 90% inventory and then submit annual proposals as part of the network to receive funding to complete monitoring projects. Corrective action will be taken as needed to ensure a healthy environment exists for wildlife based on the results of the monitoring projects.

The park will also implement an inventory and monitoring program for invertebrates as part of a network once the national program is established and funded.

Vegetation—Efforts would be increased to manage and preserve the historic appearance/landscape of the park. Recommendations proposed in the CLI and CLR would be implemented as appropriate. An inventory and monitoring program for vascular plants would be implemented through the Chihuahuan Desert Network once funding has been approved at the national level.

The park is a member of the Chihuahuan Desert - Shortgrass Prairie Exotic Plants Management Team. A more active program would be established to monitor and eradicate exotic plants through the use of this team. The unique stand of historic cottonwoods would be perpetuated and protected.

Wetlands/Floodplain/Flash Flood—In this alternative, the South Channel, actually the original and main drainage feature on site, would be optimized for water conveyance and flood protection. Wetlands that receive run-off from the South Channel would remain largely unchanged, even with increased flows. Wetlands that receive run-off from the North Ditch system would remain in place, but would be drier during low to moderate runoff events. No major impact to habitat or function is anticipated. The South Channel dike system would incur some disruption during periodic moderate to heavy flooding events.

As this alternative involves the concentration of runoff into the South Channel, historic diversions to the North Ditch would be structurally prevented. Since the South Channel can only carry the 25–50 year flood flow, all greater storm events would cause some flooding damage to historic structures close to the channel.

Intrusive Noise — The bugle calls and dress retreat parade recordings would continue to be used to help cover up or drown out modern sounds from the parking area and the adjacent highway. Interpretive messages would be used and enforcement increased to reduce the noise levels in the parking area.

The park would continue to maintain the high-quality visitor experience and ensure the protection of resources from detrimental effects caused by overflights. A problem with overflights does not exist at the present time. Should a situation arise in the future, appropriate studies would be undertaken and a recommendation proposed.

Air Quality—The air quality of the park is currently good. The site would continue to monitor the air quality and to support air quality programs both in the private and public sectors. Messages addressing air quality would be incorporated into interpretive programs.

Resource Protection

As with Alternative C, routine patrols of the grounds and structures would be continued. Restored historic buildings, in which artifacts and furnishings are located, or in which park functions are conducted, would be equipped with sprinkler systems for fire suppression.

As with the other action alternatives, the park's water systems would be upgraded, and additional fire suppression equipment acquired. Training for employees would be increased to meet fire suppression needs, and electrical systems in all buildings would be upgraded to meet NEC standards.

Possible Future Facility and Development Changes

The following possible future facility developments would be proposed under this alternative.

- The post hospital would be partially restored and refurnished with private sector funding.
- The fire suppression system, including sprinkler systems in all buildings, would be upgraded.
- The park's water systems would be upgraded.
- The electrical systems would be upgraded.
- Building standards to meet ADA requirements in the post hospital and other restored buildings, where practical, would be improved.
- Existing maintenance and employee complexes, and the curatorial "Bally" building would be removed. These functions would be moved outside of the park, thus enhancing the historic scene.
- The administrative offices would be relocated outside of the park. Vacated space would be used to increase the space for visitor services, research, and curatorial storage.
- Parking area would be slightly increased and redesigned to increase capacity.

Operational Costs

Under this alternative funding would be sought for an increase of 7 FTEs, or $206,500 in base funding. (See Table 1, Operational Costs.)

Development Costs

This alternative would require an expenditure of about $2,773,500 for development-related improvements. (See Table 2, Possible Future Development Costs.)

Future Plans and Studies

- New Comprehensive Archeological Survey
- Condition Assessments of Archeological Sites
- Cultural Landscape Inventory
- Cultural Landscape Report
- Ethnographic Study
- Comprehensive Interpretive Plan
- Natural Resource Management Plan and Fauna Study
- Cultural Resource Management Plan
- Safety Plan
- Flash Flood Plan (includes Floodplain Map)
- Historic Preservation Plan identifying types and levels of treatment
- Structural Fire Management Plan
- Wildland Fire Management Plan
- Transportation Study: Should visitation reach 125,000 visitors a year, a study would be initiated to evaluate the feasibility of a transportation system from the town of Fort Davis

TABLE 1 — OPERATIONAL COSTS
(Increases in FTEs by Alternative)

Description	A	B	C*	D*
Cultural Resource Specialist, GS-9			1.0	1.0
Education Specialist, GS-9			1.0	1.0
Clerk Typist, CR & Maint., GS-4			1.0	1.0
Interpretation, Seasonals, GS-4			1.0	1.5
Seasonal Museum Aide, GS4			0.5	0.5
Custodial, WG-2			1.0	1.0
Budget Clerk, GS-7			1.0	1.0
TOTAL			6.5	7.0

Alternative C: funding sought for an additional 6.5 FTEs, or $194,000 for increased staff.

Alternative D funding sought for an additional 7 FTEs, or $206,500 for increased staff.

* Indicates Additional Full-Time Equivalents (FTE)

TABLE 2 — POSSIBLE FUTURE DEVELOPMENT COSTS

Description	A	B**	C**	D**
Sprinkler Systems		$270,000	$270,000	$270,000
Water System		$95,000	$95,000	$95,000
Upgrade Electrical System		$25,000	$25,000	$ 25,000
Improved ADA Stds. For Hospital		$ 8,000		
Improved ADA Stds. For Hospital/Other			$ 16,500	$ 16,500
Expansion & upgrade of Existing Maint. Buildings		$ 60,000	$60,000	
Move Facilities in Foreground ROA outside park/Demolition/New Facilities			($818,000)*	$ 818,000
Remodel vacated Administrative Facilities				$65,000
Move Admin. Facilities			($ 304,000)*	$ 304,000
Manage Parking		$ 4,000	$ 85,000	$ 112,000
Complete redesign of Museum/New Displays				$ 365,000
Environmental Controls & new Cabinets			$107,000	$ 107,000
Upgrade Museum Displays			$75,000	
Flash Flood Mitigation		$ 20,000	$ 75,000	$ 75,000
SUBTOTAL		$482,000	$808,500	$2,252,500
Equipment Cost (Fire Truck and Hoses)		$74,000	$74,000	$74,000
Project Planning and Advance Cost		$56,000	$135,000	$447,000
TOTAL		$612,000	$1,017,500	$2,773,500
*Phase 2 *(Partnership/other funding, including 25% for Project Planning and Advance Cost)*			($1,122,000)	

** Note: Alternatives B, C and D include the partial restoration and refurnishing of the post hospital from private funding sources. Alternative C, Phase 2, includes funding (which could be from the private sector) for maintenance facility/employee housing, curatorial building (Bally), and administrative offices relocation.

TABLE 3 — COMPARISON OF ALTERNATIVES

	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
General Emphasis	+ Under the no-action alternative, existing administrative, maintenance, land use, and resource management activities would continue—with current use serving as the basis for mapping management prescriptions.	+ In this alternative, the park would only complete necessary upgrades or changes required for compliance with safety and security codes and regulations. Existing administrative, maintenance, land use, and resource management activities would continue.	+Resource management activities would be increased to ensure the historical integrity of the site. There would be no major exterior restoration or modern development inside the park. With Phase 2 of this alternative, administrative, maintenance, and some curatorial functions would be moved outside the park.	+ The administrative, maintenance, and some curatorial functions would be moved outside the park. There would be no major exterior restoration or modern development inside the park.
	+ Existing visitor facilities would be maintained to support current activities and no new facilities would be considered or built.	+A portion of the interior of the post hospital (with private sector funding) would be restored and refurnished.	+ Same as Alternative B.	+ Same as Alternative B.
	+ Existing levels of interpretation and resource protection would continue.	+Except for the hospital project, which would increase the level of interpretation in this area, existing levels of interpretation and resource protection would continue.	+This alternative would broaden the interpretive themes to highlight the more complex role of Fort Davis in the history of the American West.	+Same as Alternative C.
	+ No change from current historic preservation methods.	+ Same as Alternative A.	+Existing buildings, ruins, and foundations would undergo stabilization and conservation measures so as to preserve their historical integrity.	+Same as Alternative C.
	+ Continue to encourage adjacent landowners to use their land in ways that complement park values.	+Same as Alternative A.	+Same as Alternative A.	+ Same as Alternative A.
Outreach & Partnerships	+ The current web site would continue to provide basic information about the park.	+ The current web site would be improved to provide basic as well as educational information about the park. It would provide basic information on the Buffalo Soldiers as well as links to other authoritative sources on the Internet.	+ The current web site would be improved to provide curriculum-based grades K–12 educational materials for educators for on-site and off-site use. In addition, the web site would have updated and detailed park information. It would contain web pages that provide authoritative information on Buffalo Soldiers at Ft. Davis.	+Same as for Alternative C.
	+Basic education programs would be available.	+Same as Alternative A.	+ Curriculum-based education programs/materials for grades K–12 would be available.	+Same as for Alternative C.
	+Existing partnerships that are mutually beneficial would continue to be fostered.	+ Existing partnerships that are mutually beneficial would continue to be fostered and improved.	+New partnerships would be sought. These, along with existing partnerships, would be developed.	+ Same as for Alternative C.

TABLE 3 — COMPARISON OF ALTERNATIVES				
	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Outreach & Partnerships	+ The existing research facility would be maintained and would continue to be accessible to the general public.	+ Same as Alternative A.	+The existing research and library facility would be expanded and upgraded.	+ An improved research facility (dedicated space/state-of-the-art technology) would be provided.
Cultural Resource Management	Curatorial	Curatorial	Curatorial	Curatorial
	+ Existing deficiencies in preservation and protection standards would continue to exist.	+ Some improvements would be made to correct deficiencies.	+ Deficiencies would be corrected with appropriate funding. This would involve the acquisition of new cabinets, expanded storage space, improved office space, and the installation of environmental controls in buildings that house artifacts.	+ Same as Alternative C.
	+ Existing levels of curatorial work would continue.	+ Existing levels of curatorial work would continue.	+ More artifacts would be conserved, catalogued, and preserved through staff increases.	+Same as Alternative C.
	+The park would continue to explore new opportunities for partnerships and funding.	+Same as Alternative A.	+ Partnerships and funding for CESUs and new internships would be actively solicited.	+Same as Alternative C.
	+ Exhibits would be maintained and rotated periodically.	+ Same as Alternative A.	+ Display space would be increased and modernized.	+ Museum facility would be completely redesigned with new exhibits.
	Archeology	Archeology	Archeology	Archeology
	+Archeological Sites would simply be monitored and preserved	+ Same as Alternative A.	+ Information on archeological sites and artifacts would be shared with the public through exhibits and publications.	+Same as Alternative C.
	+No internship programs would be developed.	+ A limited internship program would be developed.	+ Internship programs would be actively sought.	+ Same as Alternative C.
	Historic Preservation	Historic Preservation	Historic Preservation	Historic Preservation
	+ Current practices would be continued.	+ Same as Alternative A.	+ Current practices would be continued. State-of-the-art preservation techniques would be applied.	+ Same as Alternative C.
	+ Database would remain incomplete. Monitoring would be conducted periodically.	+ Database would be completed, providing information on all known structures, ruins, and sites. Monitoring would be provided through data analysis of this information.	+ Same as Alternative B.	+Same as Alternative B.

TABLE 3 — COMPARISON OF ALTERNATIVES

	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Land Use Management	+No change from existing management.	+ Same as Alternative A.	+ Same as Alternative A. Phase 2. + Maintenance complex, employee housing units, curatorial “Bally” building, and maintenance yard in Hospital Canyon would be moved to a location outside the park and management prescription of these areas would be changed to undeveloped landscape.	+Same as Phase 2 of Alternative C.
	+ In the Foreground ROA, the perpetuation of the cottonwood grove would be emphasized.	+Same as Alternative A.	+Same as Alternative A.	+Same as Alternative A.
	+No change to the landscape.	+ Recommendations in the proposed Cultural Landscape Inventory and Cultural Landscape Report would be implemented as appropriate.	+Same as Alternative B. Phase 2. The maintenance complex, employee housing units, curatorial “Bally” Building, and maintenance yard in Hospital Canyon would be moved to a location outside the park.	+Same as Phase 2 of Alternative C.
	+No change to parking area.	+Parking area would be slightly modified to accommodate more vehicles.	+Parking area would be redesigned (not enlarged) to accommodate more vehicles.	+Parking area would be redesigned and slightly enlarged.
	+The natural appearance and environment in the Backdrop ROA would be maintained. Existing management would continue.	+Same as Alternative A.	+Same as Alternative A.	+Same as Alternative A.
Interpretation	+ The story of Fort Davis would continue to be presented from viewpoint of the military.	+ The story of Fort Davis would continue to be presented from the military perspective, but programs would additionally include the story from the viewpoint of other groups associated with the fort’s history.	+ Same as Alternative B.	+ Same as Alternative B.
Interpretation	+ Training would be provided based on available funding.	+ Basic competency level of interpretive staff would be achieved through training, as funding became available.	+ Staff would be increased, and training would be provided so that interpreters achieve a full performance competency level.	+ Same as Alternative C.
	+ Existing curriculum would be provided through educational programs and services.	+ Same as Alternative A.	+ Curriculum-based educational programs and services would be developed for grades K–12.	+ Same as Alternative C.

TABLE 3 — COMPARISON OF ALTERNATIVES

	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Interpretation	+ Interpretation would include a resource protection message and information about natural resources.	+ Interpretation would include a resource protection message and information about natural resources.	+ Same as Alternative B.	+ Same as Alternative B.
Interpretation	+ Ongoing research would ensure the accuracy and quality of interpretation.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.
	+ Living history clothes and equipment would be maintained.	+ Same as Alternative A.	+ Living history clothes and equipment would be upgraded and adequate storage provided.	+ Same as Alternative C.
	+ The current cadre of volunteers would be maintained. New volunteers would be recruited.	+ Same as Alternative A.	+ Volunteers would be actively solicited. Support for living history and resource management groups would be provided.	+ Same as Alternative C.
Resource Protection	+ The current level of patrols would be maintained.	+Same as Alternative B.	+ The level of patrols would be increased.	+ Same as Alternative C.
	+ One structure would be protected with a sprinkler system (for fire suppression).	+ Required sprinkler systems would be installed in all buildings for fire suppression.	+ Same as Alternative B.	+ Same as Alternative B.
	+ An inadequate water system/supply to meet protection needs would remain.	+ The water system/supply would be upgraded to meet protection needs.	+ Same as Alternative B.	+ Same as Alternative B.
	+ Inadequate equipment and training to meet fire suppression needs would remain.	+ Equipment and training for fire suppression would be increased to meet fire suppression needs.	+ Same as Alternative B.	+ Same as Alternative B.
	+ Electrical systems that do not meet National Electrical Code (NEC) standards would remain.	+ All electrical systems would be upgraded to meet codes.	+ Same as Alternative B.	+ Same as Alternative B.
Natural Resource Management	Wetlands/Floodplain/Flash Flood	Wetlands/Floodplain/Flash Flood	Wetlands/Floodplain/Flash Flood	Wetlands/Floodplain/Flash Flood
	+ No change from current management. Periodic flooding would cause damage to historic resources.	+ The north ditch would be modified to carry a greater flow of water. Periodic flooding would cause minimal damage to historic resources.	+ Both the north and South Channel systems would be reconstructed/modified to carry a greater flow of water. South Channel system would be used as main water flow. 50 or 100 year flood events would cause some damage to historic resources.	+ The south Channel stream corridor would be reconstructed/modified to be the main drainage. Periodic flooding would cause minimal damage to historic resources.
	+ Seasonal wetland areas would not be changed.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.
	Intrusive Noise	Intrusive Noise	Intrusive Noise	Intrusive Noise
	+Periodic monitoring of parking area would be used to reduce noise.	+Same as Alternative A.	+ Interpretive messages used and enforcement increased to reduce noise in parking area.	+Same as Alternative C.

TABLE 3 — COMPARISON OF ALTERNATIVES

	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Natural Resource Management	+ A sound system for military recordings would continued to be used.	+Improvement would be made to maintain a high-quality sound system for military recordings.	+ Sound system would be upgraded to the latest digital recordings for military sounds.	+Same as Alternative C.
	Air Quality	Air Quality	Air Quality	Air Quality
	+ Park supports air quality programs.	+ Same as Alternative A.	+ Park supports air quality programs. Message would be incorporated into interpretive programs.	+ Same as Alternative C.
	Vegetation	Vegetation	Vegetation	Vegetation
	+ No changes from current management practices.	+ Recommendations in the Cultural Landscape Inventory would be implemented.	+ Same as Alternative B.	+ Same as Alternative B.
	+Limited vegetation inventories would be completed as staff and budget allow.	+ Inventory and monitoring program implemented through the Chihuahuan Desert Network.	+Inventory and monitoring program implemented through the Chihuahuan Desert Network. Active program established to eradicate exotic plants.	+ Same as Alternative C.
	Wildlife	Wildlife	Wildlife	Wildlife
	+ No changes from current management practice.	+ Programs to manage and protect known species would be increased.	+ Same as Alternative B.	+ Same as Alternative B.
	+Limited wildlife inventories would be completed as staff and budget allow.	+ 90% inventory of wildlife would be completed as a part of the Chihuahuan Desert Network. Monitoring projects on known species would be implemented as funding is provided.	+ Same as Alternative B.	+ Same as Alternative B.
Possible Future Facility and Development Changes	+ There would be no changes to facilities.	+ Upgrade sprinkler systems.	+ Same as Alternative B.	+ Same as Alternative B.
		+ Upgrade water system.	+ Same as Alternative B.	+ Same as Alternative B.
		+ Upgrade electrical system.	+ Same as Alternative B.	+ Same as Alternative B.
		+ Improved ADA standards for the post hospital.	+ Improved ADA standards for the post hospital and other restored buildings where practical.	+ Same as Alternative C.
		+ Expansion of existing maintenance buildings within existing area to meet CFR and OSHA standards.	+ Same as Alternative B.	
		+ Modify parking area within the existing space to increase capacity.	+Redesign parking area within the existing space to increase capacity.	+ The parking area would be slightly increased and redesigned to increase overall capacity.
		+ Partial Restoration of post hospital (private funding).	+ Partial restoration of post hospital (private funding).	+Partial restoration of post hospital (private funding).
			Phase 2 + The administrative offices would be relocated outside of the park.	+Same as Alternative C, Phase 2.

TABLE 3 — COMPARISON OF ALTERNATIVES				
	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Possible Future Facility and Development Changes			Vacated space would be used to increase the space for visitor services, research, and curatorial storage. - Existing maintenance and employee housing complexes and the curatorial "Bally" building would be moved outside of the park.	+Same as Alternative C, Phase 2.
Operational Costs	+ Current Budget and Staff.	+ Same as Alternative A.	+ Increase of 6.5 FTEs, or $194,000 in base funding. (See Table 1, Operational Costs.)	+ Increase of 7 FTEs or $206,500 in base funding. (See Table 1, Operational Costs.)
Development Costs	+ Current Budget.	+ Increase of $612,000. (See Table 2, Possible Future Development Costs.)	Phase I + Increase of $1,017,500. Phase 2 + Increase of $1,122,000. (See Table 2, Possible Future Development Costs.)	+ Increase of $2,773,500. (See Table 2, Possible Future Development Costs.)
Future Plans and Studies	+ No Change	+ New Comprehensive Archeological Survey + Condition assessments for archeological sites + Cultural Landscape Inventory + Cultural Landscape Report + Structural Fire Management Plan + Wildland Fire Management Plan + Comprehensive Interpretive Plan + Natural Resource Management Plan and Fauna Study + Cultural Resource Management Plan + Safety Plan + Flash Flood Plan (includes Floodplain Map) + Historic Preservation Plan identifying types and levels of treatment + Transportation Study (Should visitation reach 125,000 visitors a year)	+ New Comprehensive Archeological Survey + Condition assessments for archeological sites + Cultural Landscape Inventory + Cultural Landscape Report + Structural Fire Management Plan + Wildland Fire Management Plan + Comprehensive Interpretive Plan + Natural Resource Management Plan and Fauna Study + Cultural Resource Management Plan + Safety Plan + Flash Flood Plan (includes Floodplain Map) + Historic Preservation Plan identifying types and levels of treatment + Transportation Study (Should visitation reach 125,000 visitors a year)	+ New Comprehensive Archeological Survey + Condition assessments for archeological sites + Cultural Landscape Inventory + Cultural Landscape Report + Structural Fire Management Plan + Wildland Fire Management Plan + Comprehensive Interpretive Plan + Natural Resource Management Plan and Fauna Study + Cultural Resource Management Plan + Safety Plan + Flash Flood Plan (includes Floodplain Map) + Historic Preservation Plan identifying types and levels of treatment + Transportation Study (Should visitation reach 125,000 visitors a year)

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is the alternative that will best promote the national environmental policy as expressed in Section 101 of the National Environmental Policy act of 1969 (as amended).

The environmentally preferred alternatives for the Fort Davis General Management Plan consist of Alternative C (Phase 2) and Alternative D. Both alternatives are very similar in scope and will affect the environment in the same way. The environmental affects and advantages of the alternatives are discussed below.

Alternative C (Phase 2) and Alternative D

Both Phase 2 of Alternative C and Alternative D emphasize the need to restore the park grounds to their historical uses. This requires that the maintenance complex, housing units, curatorial "Bally" building, and maintenance yard in Hospital Canyon all be removed to a location outside of the park. The removal of the modern buildings and maintenance materials from these locations would allow the areas to be managed under the Undeveloped Landscape Management Prescription. This prescription provides for native plants and animals to thrive unencumbered by human intervention and impacts. In addition, the removal of maintenance equipment and materials from both the maintenance complex and the storage yard in Hospital Canyon would remove the threat of minor contamination issues related with the use of modern materials and vehicles, such as vehicle fluid leaks, material spills, and construction debris.

Alternative C (Phase 2) and Alternative D also emphasize the need to increase natural resource programs which inventory, manage, and protect native plant and animal species within the park. Such programs would monitor the stability of native species and develop projects to remove encroaching or harmful exotic species.

Alternative C (Phase 2) and Alternative D also provide a baseline for managing the cultural resources in a manner which complies with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68). These alternatives emphasize the need to follow the National Park Service Organic Act of 1916 which states that the purpose of the National Park Service is to "conserve the scenery and the natural and historic objects and the wildlife therein" (16 USC 1).

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

Foundations and Ruins of an Enlisted Men's Barracks with Two-Story Officers' Quarters in Background

The alternatives in this plan encompass allocation of resources consistent with the park's purpose and significance and also might include future actions in the park by non-government entities. Only those areas of the park that could be affected are described. Future site-specific proposals after approval of this plan may require further surveys and environmental compliance.

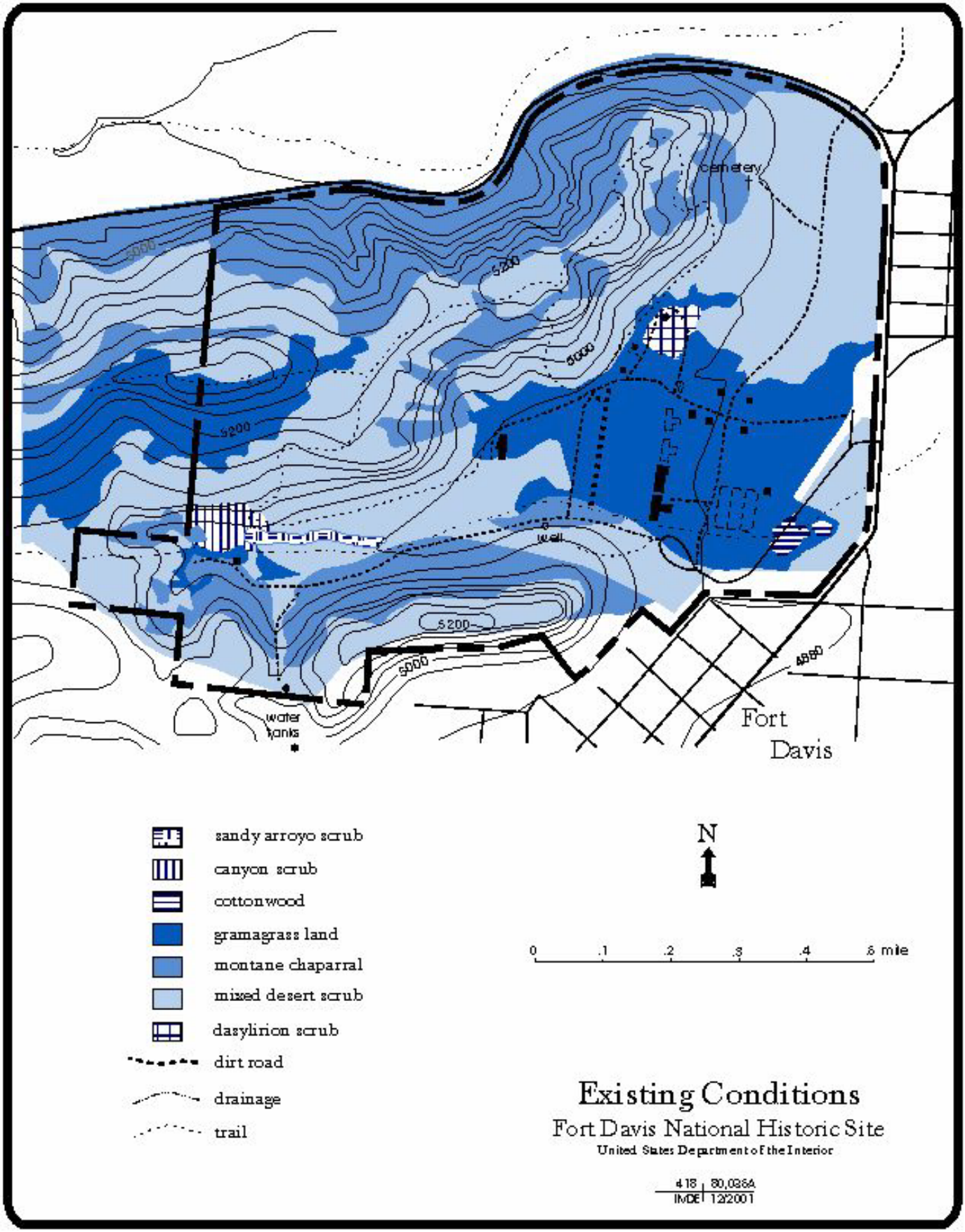
All action alternatives meet the desired future conditions described in the first chapter in different ways. Management prescriptions are applied to different areas of the park based upon the general emphasis of the alternative.

Effects are documented in general terms in this section and are related to the descriptions of the resources described in previous sections. Impact topics have been selected on the basis of the significance of the adverse effects or potential benefit to resources. Items that would not be impacted under any of the alternatives are not discussed. Impacts may be direct, indirect, or cumulative.

Direct effects are caused by a specific action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or farther removed from the place, but are still reasonably foreseeable. Cumulative effects are the impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor or collectively significant actions taking place over a period of time.

EXISTING CONDITIONS

Fort Davis NHS encompasses the buildings, ruins, foundations, and cultural landscape of two frontier military posts active from 1854–1862 and 1867–1891. The forts were built in and around the mouth of a natural box canyon. Today, Fort Davis NHS consists of 473.87 acres, having a blend of natural and cultural resources.


cemetery
5200
5000
well
water tanks
Fort Davis
sandy arroyo scrub
canyon scrub
cottonwood
gramagrass land
montane chaparral
mixed desert scrub
dasylirion scrub
dirt road
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N
0 .1 .2 .3 .4 .5 mile
Existing Conditions
Fort Davis National Historic Site
United States Department of the Interior
418 80,036A
IMDE 12/2001

The elevation of Fort Davis NHS is 4,880 feet, slightly under one mile, with the surrounding hills rising to approximately 340 feet, bringing the maximum elevation to 5220 feet. Limpia Creek, which was a vital water source for the fort, flows eastward and northward along the site's north boundary. Boundaries on the south side consist of Sleeping Lion Mountain and on the north, of an irregular parcel of land bordered by State Highway 118. The Davis Mountains State Park defines the site's western boundary; and State Highway 17 creates its eastern boundary. Adjacent to the fort is the town of Fort Davis, a small, unincorporated town of approximately 1,200 people. There is no zoning to govern the appearance or uses of the town.

The summer months are dry and hot, with afternoon showers frequently occurring during July and August. Winters tend to be mild with very little snowfall. The mean daily minimum temperature averages 37 degrees in winter, and the mean daily maximum temperature is 88 degrees in summer. Average yearly precipitation is 13–15 inches, with July usually being the wettest month. Humidity generally tends to be very low. Historical extremes in rainfall occurred in 1871, when only 6.78 inches of rain fell, and in 1881, when the rainfall totaled 27.54 inches. Flooding from extreme weather conditions has occurred frequently.

VISITOR EXPERIENCE

Affected Environment

Visitation patterns have remained fairly stable. Generally, the park attendance averages 60,000–70,000 people per year. The 10-year total for calendar years 1990 through 1999 is 653,369. The average time spent at the park by visitors is 1.8 hours. The shortest visits tend to be in December and January when colder temperatures limit walking around the site.

Peak visitation usually occurs during March when many schools are not in session because of spring break. The majority of visitors to Fort Davis NHS are from Texas. Most of the fort's European visitors come from Germany, while the majority of Asian visitors are from Japan. Visitors to the fort could experience crowding, generally on weekends, holidays, and busy periods during the spring.

Entry to the fort area brings visitors in contact with the visual beauty of Fort Davis. The mood created by military sounds and sights enhances awareness of the fort's historic past. Visitors have an opportunity to experience the site on their own or through organized interpretive programs.

The current level of development strikes a balance between ruins and restored historic buildings—a balance that provides visitors with both a story and a provocative introduction to a significant part of America's frontier history.

Impacts of the No-Action Alternative—Alternative A

There would be no change to visitor experience.

Impacts of Alternative B

This alternative is the same as Alternative C, but with less emphasis on expanded programs.

Impacts of Alternative C—NPS Proposal

Visitor experience would be enhanced by the proposal, because it focuses on improving visitor services and access to information via outreach and park programs.

Visitor flow and use patterns will not change. Access routes permit walking tours through the fort and its historic resources in a logical, topic-oriented

manner, with initial orientation provided at the visitor center.

Improvements in parking will increase capacity within certain limits. If visitation remains below 125,000 recreation visits per year, it is estimated that visitors can be accommodated in a relatively uncrowded environment. Because the park has a small parking area, larger vehicles such as tour buses and touring vans or motor homes are not accommodated easily. A transportation study is proposed should visitation exceed 125,000. The study would evaluate alternative means of accessing the fort in order to maintain a quality visitor experience and minimize the impact of larger vehicles on the historic scene.

Access to the park will continue to be essentially via private vehicle. The historic area is easily accessible by foot from the town of Fort Davis. Modifications may be necessary in the future to access interior park paths and trails, to improve circulation, and to orient visitors to other park resources, such as historic roads. This would be done in a manner consistent with the management prescriptions. The close relationship to the town makes this a practical solution to overcrowding, but solutions need to be adequately evaluated in the transportation study.

No overnight accommodations would be permitted. Visitation will probably level off at about 75,000 per year. With improved programs, the visitor's length of stay at the fort is expected to increase. This increase could be as much as 3 hours, with an estimated average length of stay of about 2.0–2.2 hours. The quality of stay is also expected to improve through program enrichment.

Phase 2 impacts are documented in Alternative D.

Impacts of Alternative D

This alternative would improve visitor experience slightly more than Alternative C, because more emphasis would be placed on facility and space improvements to accommodate visitors and improve the historic scene. No overnight accommodations would be permitted.

ARCHEOLOGICAL RESOURCES

Affected Environment

Archeological Sites

Prehistory Overview—People first came to Texas about 12,000 years ago. These inhabitants banded together in small groups, moving from camp to camp in search of food, depending on availability of game and wild plants. Each group probably moved around in the same area year after year. The arid climate provided few trees for firewood or building. The region is classified as “mountain and basin,” therefore, there were wide differences in the living patterns of the American Indians who inhabited the area.

During Archaic times (6,000 B.C. to A.D. 500) the food supply shifted toward plants and smaller game. The emphasis on plant foods necessitated the use of manos and metates, which are common to Archaic sites and have been found at Fort Davis NHS. The late Prehistoric Period (A.D. 500 to 1500) introduced new tools and ways of producing food, resulting in a greater use of pottery and arrow points.

With the arrival of the Spanish began the Historic Period. After A.D. 1500, new groups such as the Comanche and Apache began to traverse the Trans-Pecos and gradually replaced the native people now identified as “Jumanos.”

As summed up by Robert M. Utley in his publication entitled Fort Davis National Historic Site, Texas:

“Few Indians actually lived in this country. Several bands of Mescalero Apaches had villages in the Davis

Mountains and the Big Bend . . . many other Indians regularly passed through the Trans-Pecos."

The Mescalero Apaches, Kiowas, and Comanches all conducted raids over large distances in this vast area, which played a significant role in the establishment of the fort.

Resources—While there are several identified prehistoric archeological sites at Fort Davis NHS today, the prospect of having other isolated occurrences or remains is substantial. The identified sites, first documented in July 1986, are monitored on a regular basis. The connections of the earlier people, military occupation, and yet undiscovered sites all provide the potential for a rich archeological as well as historical resource.

Impacts of the No-Action Alternative—Alternative A

Periodic increased water flows may erode areas in the alluvial floodplain, thereby exposing and moving archeological resources and making them more liable to theft.

Impacts of Action Alternatives (B, C, and D)

Reconstruction activities would not affect known archeological sites. While there should be little ground disturbance in areas of high archeological potential, buried historic remains are located throughout the park.

Known locations are well documented and surveyed. All ground-disturbing activity in these areas will be monitored to mitigate any impacts that might occur, should any archeological sites be encountered. Sites in close proximity to visitor-use areas are vulnerable to surface damage.

Prior to final site selection during project design or any land-modifying activity, an archeologist will inspect the proposed development site and its immediate vicinity for the presence of cultural remains, both prehistoric and historic. Should newly discovered or previously unrecorded cultural remains be found, additional investigations will be performed.

In summary, providing additional information and protection on archeological resources would be a positive benefit.

CULTURAL LANDSCAPES AND HISTORIC RESOURCES

Affected Environment

Cultural Landscapes— "Cultural landscape" can refer to a geographic area where people have been or still are, modifying, interacting with, and giving human meaning to the land. The National Park Service is primarily concerned with landscapes having historic and/or ethnographic significance in areas in which the NPS has or plans to acquire legal interest. The landscape does not need to contain visible evidence of human manipulation to be considered a cultural landscape. The term can also describe a way of seeing, where all aspects of a place—natural and cultural—are considered together as part of an overall system.

The definitions, policies, and procedures of the NPS Cultural Landscapes Program are based on the National Register of Historic Places. A major part of the national heritage, which the National Park Service is charged to protect and interpret, has been and is lived out in the landscape. Farm fields and irrigation systems, plazas and courtyards, designed parks and gardens, and river valleys, mesas, plains, and mountains where groups of people have gathered food, held ceremonies, or fought each other over political beliefs, are all examples of cultural landscape resources.

Characteristics of cultural landscapes can include tangible and intangible elements. Tangible evidence on-site can relate to a number of types of land use, including settlement, aesthetics, travel, subsistence, agriculture, recreation, industry, ceremony, and celebration.

In addition to being a distinct resource along with archeological sites, historic structures, ethnographic resources, and museum objects, cultural landscapes can be thought of as the holistic context for the individual cultural features, the organizing system within which specific cultural resource elements (e.g., plants, animals, structures) are located.

Retaining the present cultural landscape of Fort Davis serves to enrich the visitor's experience. The box canyon, the military installation, the rugged landscape are all historic and unique features of this area. They are features that visitors for decades have traditionally associated with the fort.

Although a cultural landscape inventory (CLI) has not yet been completed for Fort Davis NHS, a potentially significant cultural landscape associated with several historic periods and events is clearly present, and a CLI is needed to document and analyze all the features of the historic landscape at the site. The structural and biotic evidences of activities associated with the first and second forts are included within this cultural landscape. The CLI would identify contributing characteristics of the landscape, including patterns of spatial organization, natural systems and features, circulation patterns, all underground and aboveground structural remains, and all vegetative patterns and features characteristic of the significant historic periods.

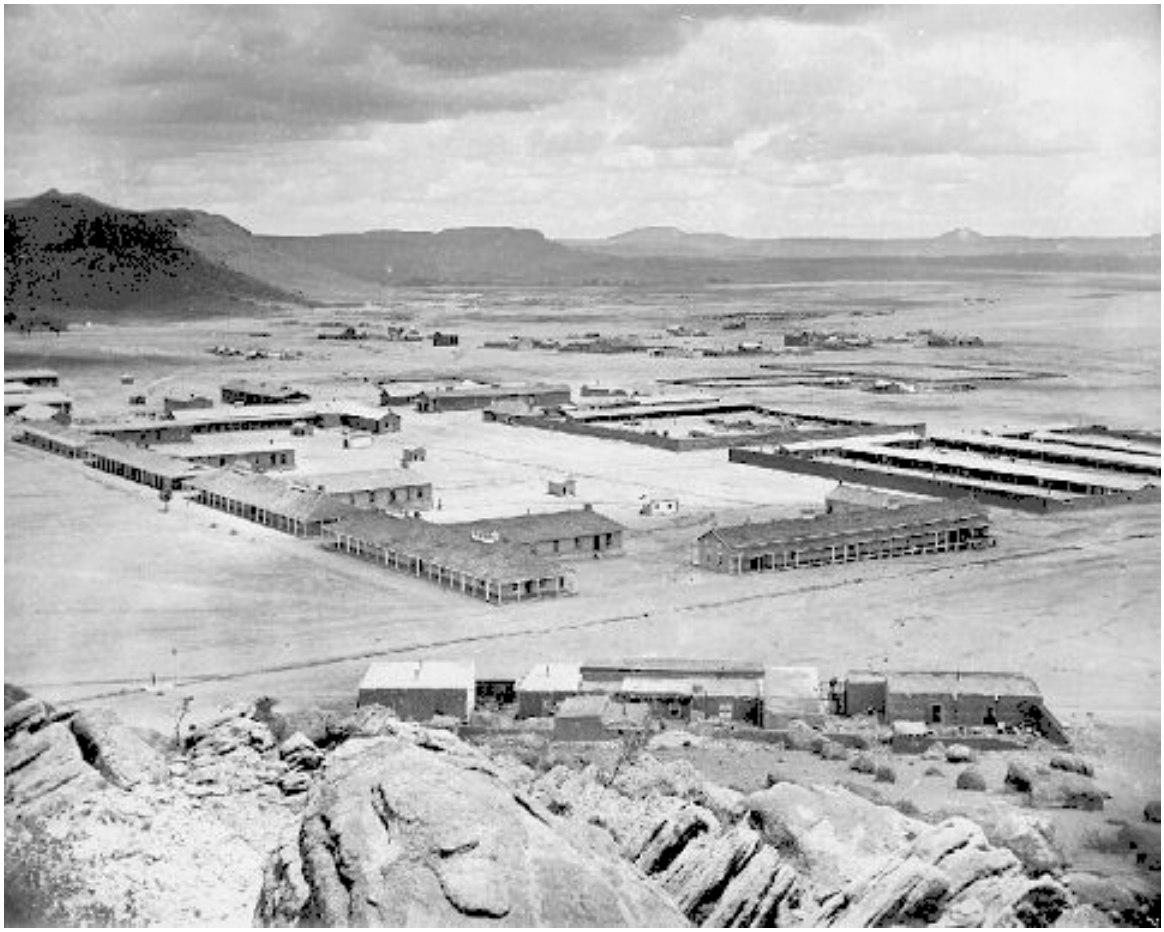
The CLI will also include a statement of significance and an overall integrity rating. The completed CLI will address NHPA Section 110 compliance as required by NPS policy to provide baseline resource data. It will also provide park management with information needed for informed preservation and management of cultural landscape resources. The CLI is scheduled to begin in the summer of 2000, and, until it is completed, all landscape features, such as historic roads, garden sites, and the cemetery, and open areas, such as the parade ground, should be preserved.

Historic Structures—After gold was discovered in California in 1848, westward overland travel routes became important. In west Texas, the San Antonio–El Paso Road passed through territory used by the Apache and Comanche. To protect travelers and the mail from their encounters with Apache and Comanche tribes, the army built a fort in 1854, in what were then called the Apache Mountains, near Limpia Creek. The new post was named Fort Davis, after then Secretary of War Jefferson Davis, and soon the mountains became known as the Davis Mountains.

Fort Davis, Texas 1885

With the secession of Texas from the Union in 1861, Fort Davis was abandoned. The post was then occupied by Confederate troops. In the summer of 1862, southern forces left and the post was deserted for the remainder of the Civil War. A second Fort Davis, constructed in 1867, prevailed until 1891.

Troops from both forts scouted and mapped the surrounding territory, escorted the mail, protected stagecoaches and wagon trains, guarded railroad surveyors, and fought against raiding Apache and Comanche bands. Most notable among the troops who served at Fort Davis were African Americans (known as Buffalo Soldiers) of the 9th and 10th U.S. Cavalry and 24th and 25th U.S. Infantry regiments. These units compiled a notable record of military accomplishment and helped to bring about the peaceful settlement and development of the region.



Fort Davis taken from Sleeping Lion Mountain with Post Sutler's Complex in Foreground, and Enlisted Men's Barracks and Corrals in Background, circa 1885

The structures of the first Fort Davis, numbering about 60, were primarily constructed of pine slabs. Today all that remain of these buildings are the foundations.

The post–Civil War fort consists of adobe and cut stone buildings.

About 25 significant structures from this fort have been restored and five of these are furnished to the time period of the 1880s. There are also several ruins and foundations of second fort structures as well as a ditch system used by the army for flood control (see discussion under Floodplains, Wetlands, and Water Resources). Currently 110 first and second fort structures are on the List of Classified Structures.

Collections—The museum collection at Fort Davis consists of an estimated 80,000 artifacts, which range from antique furnishings, museum exhibit artifacts, extensive archeological and field collection groups, and two herbariums. About 5,000 items are on public exhibit in the museum and in five furnished buildings. The remaining items are stored in three curatorial facilities. Items in the museum collection are used in permanent and temporary exhibits, for research and study, and for occasional loan.

In a sense, the entire park is an "outdoor museum." Viewed in this context, it is therefore critical to maintain the historical appearance and integrity of the fort.

Impacts of the No-Action Alternative—Alternative A

Cultural Landscapes—The historic vernacular-designed landscape would continue to be managed as a historic landscape resource, and any modifications would be made so as not to reduce its integrity. Maintaining the integrity of landscape areas and features would result in no adverse effect on this landscape. Pending the completion of a cultural landscape report, all contributing or potentially contributing landscape elements will be preserved resulting in no adverse effect.

Historic and Scenic Vistas from Within and Outside Park Boundaries—No changes would be made to any element in the landscape within the park.

Historic Structures—Buildings and facilities open to the public would not be improved. Some would remain inaccessible to mobility-impaired visitors.

Collections—Space is inadequate for storage and display.

Impacts of Alternative B

Cultural Landscapes—The historic vernacular-designed landscape would continue to be managed as a historic landscape resource, and any modifications would be made so as not to reduce the integrity of these areas. Maintaining the integrity of landscape areas and features would result in no adverse effect on this landscape. Pending the completion of a cultural landscape report, all contributing or potentially contributing landscape elements will be preserved, resulting in no adverse effect.

The preservation of visual quality within the park and working with adjacent landowners to minimize modern intrusions on park viewsheds would benefit the experience of those visiting and hiking. This would retain the less-developed, more historic views within the park.

Historic and Scenic Vistas from Within and Outside Park Boundaries—No changes would be made to any element in the landscape within the park.

Historic Structures—Improvements would be made to make the post hospital accessible to mobility-impaired visitors. This would require some modification to existing entryways, but would enable people with mobility impairments to experience the interior of an additional fort building.

The North Ditch would be reconstructed for flood control purposes. This could result in an adverse effect to the historic resources. Proper mitigation and recording should reduce this impact to a no adverse effect. Some structures would be modified to meet fire protection standards.

Use of buildings and structures to support park operations, interpretation, and visitor use would contribute to their long-term preservation. Remodeling staff quarters to increase office space would result in increased operational efficiency and better employee morale. Changes would be compatible with historic function and consistent with the preservation of historic fabric.

No physical impacts to known ethnographic resources are anticipated.

Collections—A minor beneficial improvement would be made to correct deficiencies.

Impacts of the Proposal—Alternative C

Cultural Landscapes—The historic vernacular-designed landscape would continue to be managed as a historic landscape resource, and any modifications would be made so as not to reduce the integrity of these areas. Minor changes in the parking configuration to increase capacity would be carefully done

to maintain the integrity of landscape areas and features. This would result in no adverse effect on this landscape. Pending the completion of a cultural landscape report, all contributing or potentially contributing landscape elements will be preserved, resulting in no adverse effect.

The preservation of visual quality within the park and working with adjacent landowners to minimize modern intrusions on park viewsheds would benefit the experience of those visiting and hiking. This would retain the less-developed, more historic views within the park.

Phase 2 impacts are documented in Alternative D.

Historic and Scenic Vistas from Within and Outside Park Boundaries—No changes would be made to any element in the landscape within the park during Phase I.

Phase 2 impacts are documented in Alternative D.

Historic Structures—Improvements would be made to make the post hospital and other historic buildings accessible to mobility-impaired visitors. This would require some modification to existing entryways but would enable people with mobility impairments to experience the interior of additional fort buildings. The partial restoration and refurnishing of the post hospital would enhance visitor experience by providing new opportunities for viewing historic resources. The installation of fire suppression equipment would not adversely affect historic resources, but would add to their protection.

The North Ditch and South Channel would be reconstructed for flood control purposes. This could result in an adverse effect to the historic resources. Proper mitigation and recording should reduce this impact to a no adverse effect.

Use of buildings and structures to support park operations, interpretation, and visitor use will contribute to their long-term preservation. Remodeling staff quarters to increase office space will result in increased operational efficiency and better employee morale. Changes will be compatible with historic function and consistent with the preservation of historic fabric.

No physical impacts to known ethnographic resources are anticipated.

Additional Phase 2 impacts are documented in Alternative D.

Collections—Deficiencies would be corrected, and collection storage and displays would be improved.

Impacts of the Proposal—Alternative D

Cultural Landscapes—The historic vernacular-designed landscape would continue to be managed as a historic landscape resource, and any modifications would be made so as not to reduce the integrity of these areas. Maintaining the integrity of landscape areas and features would result in no adverse effect on this landscape. Pending the completion of a cultural landscape report, all contributing or potentially contributing landscape elements will be preserved resulting in no adverse effect.

The preservation of visual quality within the park and working with adjacent landowners to minimize modern intrusions on park viewsheds would benefit the experience of those visiting and hiking. This would retain the less-developed, more historic views within the park.

Historic and Scenic Vistas from Within and Outside Park Boundaries—The relocation of the maintenance facility, employee housing, and curatorial Bally building to an area outside the park would improve the vistas and views of the fort from State Highways 17 and 118.

This change would provide a more historically accurate and attractive approach to the fort without adversely impacting the historic structures or cultural landscape.

Historic Structures—Improvements would be made to make the post hospital and other historic buildings accessible to mobility-impaired visitors. This would require some modification to existing entryways but would enable people with mobility impairments to experience the interior of additional fort buildings. The partial restoration and refurnishing of the post hospital would enhance visitor experience by providing new opportunities for viewing historic resources. The installation of fire suppression equipment would not adversely affect historic resources, but would add to their protection.

The South Channel would be reconstructed for flood control purposes. This could result in an adverse effect to the historic fabric. Proper mitigation and recording should reduce this impact to a no adverse effect.

Use of buildings and structures to support park operations, interpretation, and visitor use will contribute to their long-term preservation. Removal of maintenance building, employee complexes, and the curatorial Bally building from the historic scene would provide for uses that are more historically compatible inside the park boundary and improve viewing from the highways. Moving administrative offices outside the park and the reallocation of space to historic functions would help reduce the presence of non-historic functions and features in historic structures.

No physical impacts to known ethnographic resources are anticipated.

Collections—Deficiencies would be corrected, and there would be a major improvement to displays and storage for collections.

LONG-TERM HEALTH OF NATURAL ECOSYSTEMS

Affected Environment

Soils/Vegetation

Soil—In 1977, the Soil Conservation Service mapped four soil range sites at Fort Davis NHS. According to a 1981 report by Dr. James T. Nelson, former professor of Range Animal Science at Sul Ross State University, Alpine, Texas, entitled “The Historic Vegetative Aspect of Fort Davis National Historic Site, Texas,” “Most of the fort is situated on a deep upland or loamy range site. This site is defined as having a flat to concave valley plane with a 0–3% slope. Soils are predominantly of the Musquiz association, over 20” deep with low erosion hazard and high water availability. Most of the hospital canyon floor lies in a draw range site. Soils here are deep well-drained non-calcareous loams of the Gageby association. The canyon is long and narrow with run-in water from adjacent steep slopes providing soil moisture and washing fine soil materials into the canyon floor.

At the foot of the canyon walls lies a narrow band of gravelly loam on gentle convex slopes of 1–5%. This zone is known as the gravelly range site and consists of about half-and-half Santo Tomas gravelly loam and Medley loam. Fine material is washed out of these soils into the flats below.

Most of the higher canyon walls and hilltops consist of 50–90% rock outcrop and 10–40% Brewster association soils. At the western edge of the site is a hill consisting of rock outcrops, Mainstay and Livingston soils. These areas are known as igneous mountain range sites. The soils range from very shallow to deep (pockets) and are gravelly to cobbelly in texture.”

Vegetation—Because of the variable topography, a striking blend of desert, mountain, and grassland formations has created "a rich floral diversity" evident at the fort. Historically there was more grassland compared to the large amount of catclaw and mesquite visible today. In his study, Dr. Nelson noted the dramatic difference between the photographs he took in 1980 and 1981 and historic photos taken in the 1880s. Today the dominant plant community areas are grama grass, mixed desert, sotol scrub, and montane/chapparal, with more recent additions of canyon scrub and sandy arroyo.

An historic grove of native Rio Grande cottonwoods (Populus wislizenii), estimated to be approximately 120 years old, provides an attractive setting for visitors entering the park. Other tree growth consists of mixed stands of gray oak (Quercus grisea), Emory oak (Quercus emoryi), and alligator and red-berry juniper (Juniperus deppeana and pinchot). According to Dr. Nelson, common shrubs include three forms of sumac, evergreen, littleleaf, and skunkbush (Rhus virens, R. microphylla, and R. aromatica), Texas mountain laurel (Sophora secundiflora), catclaw (Mimosa biuncifera and Acacia ssp.), Mormon tea (Ephedra trifurca), honey mesquite (Prosopis glandulos), and algerita (Berberis trifoliata). Two half-shrubs, threadleaf groundsel (Senecio longilobus) and Broom snakeweed (Xanthocephalum sarothrae), are present, scattered or in dense patches on the property. Sotol (Dasylirion wheeleri) can be found on rocky slopes, and on hilly area the presence of beargrass (Nolina erumpens) has been detected. Prickly pear cactus (Opuntia spp.) is found in its many varieties on most of the grounds.

Typical vegetation of area: sotol, juniper, and various cacti.

The most common grasses are blue grama (Bouteloua gracilis), sideoats (B. curtipendula), black (B. eriopoda), hairy (B. hirsute), and sprucetop (B. chrondrosoides).

Tall grasses, such as cane bluestem (Bothriochloa barbinodis), little bluestem (Schizachyrium scoparium), bull muhly (Mulhenbhergia emerslyi), dropseed (Sporobolus cryptandrus), and tanglehead (heteropogon contorta), are found on well-drained sites throughout the area.

Two major herbarium groups, totaling approximately 580 specimens, collected in the 1970s and 1990s, are located in the museum collection's main storage area.

There are no known plants classified as "protected" or endangered species in the park. Some exotic grasses and plants do exist in the park, but they are not considered a threat to the ecosystem.

Of primary importance is the scenic value of vegetation, giving a unique sense of openness and panoramic vistas of the fort. This setting, composed of mountain

and desert plant life, is the distinctive feature of the fort.

Impact of the No-Action Alternative

Existing measures to minimize the impact to soils and vegetation by human activities would continue.

Impacts of the Action Alternatives (B, C, D)

Under the action alternatives, minor soil and vegetation alterations would be allowed in conjunction with proposed changes to various facilities throughout the park. Additional environmental review and analysis will be done once the scope and areas of these changes are determined. Future actions requiring additional site-specific environmental analysis would most certainly consider impacts on soils. These can be described as follows:

> Impacts of any new visitor traffic to soil can be directly and indirectly caused by continual and increased use of the resource. Potential impacts that could occur from visitor use include soil compaction, soil erosion, loss of soil permeability, changes in soil chemistry, and loss in soil insulation. Areas that have the most recovery potential from impacts of development are located within areas previously described.
>
> On trails or where visitor use is concentrated, the most common impact on soil would be compaction, which lowers soil permeability, changes the local soil moisture, and decreases water storage capability. As a result, water transmission within soils would decrease and surface runoff and soil erosion would increase.
>
> Unauthorized expansion of trail areas on the fringes of visitor uses most often leads to continual trampling that gradually diminishes vegetation and increases soil exposure to wind, rain, and hail.

Any future construction requires site preparation that would result in soil addition or removal and destruction of soil structure. Removal and displacement of topsoil would occur where pavement and buildings are located and utilities or other facilities are installed. Foot traffic in and around the parade ground would affect vegetation and soils.

Mitigation—Educational and interpretive programming teaching visitors the importance of staying on designated trails would mitigate further impacts to the soil. Engaging the visitor in a variety of recreational and educational activities geared toward minimum impact could be useful in the mitigation of impacts to soil.

Specific mitigation measures for future development projects would be defined during planning for each project and carried out prior to or during project development.

Mitigation of impacts may include modifications to soil and topography to reduce soil compaction around heavily used facilities. Flat and slightly sloping areas could erode, and channeling of the soil could take place. In the short term, soil in construction areas would temporarily undergo rapid erosion. In the long term, when drainage structures are in place and fully operable and vegetation restored, the soil would be protected and preserved.

Carefully designed and landscaped areas consistent with the cultural landscape report (CLR) recommendations would assist in minimizing topsoil impacts. Topsoil replacement, when needed, should use material similar in composition (mineral and organic) to the original topsoil, and replanting should be done with native grasses and shrubs.

Careful and continuous monitoring should be done to mitigate impacts.

Conclusion—None of the action alternatives considered would have any significant immediate or cumulative impact to the soils or vegetation of the park.

Wetlands, Floodplains, and Water Resources

Wetlands—Narrow wetland areas exist along the ephemeral "south channel" drainage stream. These wetland areas likely meet the classification criteria adopted by the NPS in Director's Order #77-1 and Procedure Manual #77-1, which implement policies, requirements, and standards for Executive Order (E.O.) 11990: "Protection of Wetlands" (42 Fed. Reg. 26961). These seasonally wet areas in Fort Davis NHS probably meet wetland criteria under the Cowardin classification methodology in the Riverine System, Intermittent Subsystem, with both rock (bedrock and rubble) and unconsolidated (various subclasses) bottoms (Cowardin et al., 1979).

Mapping of the wetland areas in the park has been performed on large-scale aerial maps through the U.S. Fish and Wildlife Service National Wetland Inventory Mapping project. A map entitled; National Wetlands Inventory, Fort Davis, Texas, was prepared at 1:24000 scale in 1994. This map indicates no wetlands on the Fort Davis site, although two less-than-one-acre diked impoundments (probably for holding stock water) are identified immediately upstream. The map is an indicator of wetland location, but requires an additional wetland survey.

Two other drainages, the North Ditch and the South Channel dike system, constructed by the army as interceptor dikes and ditches, function as wetlands when moderate to major flooding occurs. They are considered created or "intentional artificial" wetlands by the NPS and have minimal wetland habitat associated with them.

Floodplains/Flash Floods—Fort Davis NHS is located in the Davis Mountains of west Texas at an elevation of close to 5,000 feet (NGVD). The watershed above the park is approximately 0.6 square miles and is oblong, measuring less than 2 miles long by less than one-half mile wide. Intense thunderstorms, characteristic of this region, are capable of producing high-magnitude runoff events. Furthermore, given the small size of the watershed and the rapid runoff rate of the bedrock, the fort location is very likely within a flash flood zone.

Fort Davis was originally an army post established in 1854. The fort site is located on an alluvial fan directly below the fan-head valley. The fort and surrounding grounds occupy approximately two-thirds of the upper alluvial fan. Distributary channels are visible on aerial photographs downstream (NE) of the fort, however, construction of the fort and its surrounding grounds likely obliterated all evidence of distributary channels in that area. The South Channel stream drainage is perhaps the only remnant channel, largely carrying all surface flow now through the fort.

Because of Fort Davis's setting on an alluvial fan, flooding is a regular phenomenon there. During the second fort period (1867–1891), the army constructed a series of ditches and dikes to alleviate flooding on the fort grounds. Low to moderate flows were, and continue to be, diverted around the fort grounds via two ditches, hereafter referred to as the North Ditch and the South Channel.

The existing configuration of ditches and dikes, however, is not sufficient to protect the fort grounds from frequent flooding, and current park staff have observed a number of large runoff events in recent years. Of particular note is an event that occurred in late summer 1990. In this event, the entire ditch-dike-channel

system was overwhelmed by floodwaters and a large portion of the fort was flooded. The right bank of the North Ditch failed, and the lower South Channel dike system received water originally diverted from the primary channel (South Channel) into the North Ditch. Eventually, the lower dike also failed and debris-laden flood waters spilled onto the fort ground, eroding historic foundations and depositing sediment in historic structures. Backup floodwaters approached the three on-site staff residences. Additionally, flow overtopped the left bank of the South Channel, eroding the walking trails and flooding the headquarters building and the barracks. A subsequent site visit performed by Joe Bruno of the old Southwest Regional Office resulted in several recommendations, including reinforcing the dikes and improving the conveyance capacity of the ditches/channels (Bruno/NPS, 1990).

Hydrologic/Hydraulic Analyses—Flood frequency information for Fort Davis was derived using equations published by the USGS (Schroeder and Massey, 1977). Calculated discharges ranged from about 100 cfs for the 2-year flood to about 650 cfs for the 100-year flood. The 500-year flood is estimated to be just under 1,000 cfs. The Maximum Estimated Flood (Qme) for this watershed is projected to be about 6,000 cfs using the method presented in Crippen and Bue, 1977. This is nearly 10 times greater than the calculated 100-year discharge but is within the range of maximum flood estimates calculated in other studies conducted by the authors.

Ditch-Dike System—The hydraulic capacities of ditches in Fort Davis NHS, as outlined below, were estimated using the U.S. Army Corps of Engineers's computer model HEC-RAS.

The North Ditch intersects the South Channel, which is the first-order drainage, roughly midway between the hospital (an historic structure located on the upper end of the fan) and the upper fan-head valley. From that point, the North Ditch commences northeast, following the contour and passing due north and uphill of the primary fort grounds. Cut-and-fill excavation produced a channel roughly 10 feet wide with a 1- to 1.5-foot levee on the right bank. Hydraulic modeling results indicate that the ditch capacity is about 50 cfs. A discharge greater than this is likely to overtop the levee, probably washing it out in one or more locations. A flow in the South Channel in excess of 1.5 feet is needed to initiate flow into the North Ditch. A discharge of about 100 cfs, which is in the range of a 2-year recurrence interval flood, will produce sufficient flow to access the North Ditch. Reportedly, the army used a check dam across the South Channel to encourage diversion of flows into the North Ditch on a more frequent basis; however, this feature is no longer present.

Below the diversion to the North Ditch, the South Channel drainage continues for several hundred feet before losing all channel characteristics owing to reduced grade. Downstream of where the South Channel flattens out, the army constructed two dikes (herein referred to as the South Channel dike system). Currently, the upper dike serves to divert sheet flow (including that conveyed from the South Channel) back to the South Channel. The lower dike primarily impounds overbank flow from the South Channel and some sheetflow from the upper fan. The upper dike runs roughly east-west and is approximately 3 feet high. The lower dike runs roughly north-south and also is about 3 feet high.

These two dikes nearly intersect at a point where the service road crosses the South Channel. This is also the diversion point where overbank flows access the area behind the lower dike, creating a flood detention pond. A discharge of about 100 to 200 cfs (2- to 5-year recurrence interval flood) will produce a sufficient stage to access the detention area. It is not

apparent if the original design of the lower dike was for storage or redirection. The section where the road crosses the channel has likely been filled in, as there is a buried water main at the crossing. If the channel at this location was deeper at one time, then the lower dike may have been intended for diversion only.

The South Channel appears to have been one of the original alluvial fan channels. It has received concentrated flow, however, for more than a century. Either because of the underlying structure, the fan morphology, or the concentrated flows (most likely a combination of the three), the South Channel has incised into bedrock. This channel is steep with a grade of about 3–4 percent. Most of the reduction in elevation is accomplished through two bedsteps, which drop about three and four feet, respectively. Because of the relatively large cross section and the steep grade, the South Channel has the capacity to convey between 400 and 500 cfs, which is somewhere between a 25- and 50-year flood for this watershed.

Flash Flood Protection—Occupation of a floodplain in a flash flood-prone area constitutes a Class III action in reference to the National Park Service Floodplain Management Guidelines (NPS 93-3), with the regulatory floodplain defined as that inundated by an extreme flood. The **Qme** has previously been used as an estimate of the largest possible flood for a given watershed. Floods of this magnitude are exceptionally rare and not useful as a practical structural design standard. Knowledge of the conditions associated with the worst-case flood, however, can be useful for planning purposes and to help ensure human safety.

The **Qme** flow would reach the majority of the fort buildings with at least shallow, but swiftly flowing water and debris. There are no reasonable alternatives that would provide for full protection from the **Qme** flood damage to the historic resources, staff, and visitors at the fort. Options to optimize flood protection using on-site historic water conveyances, such as the North Ditch and the South Channel dike system are sympathetic to the current and future objectives for the site and have been proposed as alternative elements in this GMP. The optimized North Ditch and South Channel dike system would provide protection from flash flooding, however, at less than the 100-year event. (WRD, 1999). The construction of additional protective dikes and diversion structures has also been considered for many years, but deemed to be too disruptive to the cultural and historic resources of the site. These additional protective devices would also have to be constructed very close to the historic buildings (Blackstun, 1997).

There have been no structural proposals that would provide any significant additional protection to staff and visitors against flash flooding. Short of the unreasonable options of completely denying access to staff and visitors from the flash flood-prone fort location or moving structures out of the flood zone there are no absolute protective measures available. Flood warning systems that rely on electronic sensors or personal observations are not foolproof in flash flood-prone areas such as this one. But, because of the nonconfining nature of the alluvial fan, the overbank flows are likely to occur as sheet flows and will likely not attain substantial depth. Flood flows in this area have the potential to affect the headquarters/visitor center building, the refurnished barracks, and on-site staff residences, and might affect the Church Camp building. Hydraulic modeling, however, indicates that overbank flow resulting from floods up to the 500-year recurrence interval would obtain depths of less than 1 foot, and associated velocities would not exceed 3 feet per second. On the other hand, the **Qme** could be capable of achieving depths in the range of 2 feet across the fan, with associated velocities ranging from 4–6

feet per second. While these conditions are not extremely dangerous, the combination of the depth, velocities, and the large area of inundation could be life threatening. Thus, in all but the most extreme floods, staff and visitors would still have enough time and ability to evacuate the flood-prone areas to safety.

The Church Camp building is located in upper Hospital Canyon within fifty feet of the drainage channel. The structure is used for occasional daytime meetings, and less frequently for over night stays by park volunteers or staff. Because of the effort made to address potential flooding impacts to park resources and visitor safety in the lower canyon and fort location, the Church Camp has been identified as a location requiring a flood threat decision. Using topographic mapping and a rudimentary hydrologic analysis, it appears that the Church Camp building might be in the 500 year flood plain and possibly be threatened by the maximum flood in the canyon; both would require NPS management decisions about future use for over night stays. Current written and verbal records in the park indicate no historical problem with flooding at the site, thus no change in use would be proposed. At the next opportunity however, the park would have a reconnaissance and/or survey level study made of the Church Camp building and the surrounding drainage area. Then, depending upon the level of flooding threat, park managers may be required to file a statement of findings on decisions regarding future use of the Church Camp.

Consideration of the severity of the threat of flash flooding to the historic resources, staff, and visitors would be a part of future planning by the NPS at Fort Davis. Attached to this GMP is a Statement of Findings (SOF) that documents the current commitment of the NPS to continue occupation of the flash flood-prone area of Fort Davis with historic structures, visitor center, maintenance areas, and staff residences. The SOF confirms that a flood mitigation plan should be developed as a part of the chosen alternative. This plan should be protective of and sympathetic to the historic/cultural resources as well as staff and visitor safety. Options to be considered in the flood mitigation plan would be:

- Develop a plan to minimize the threat to historic resources, staff, and visitors that includes:
  1. Priorities for historic resources that could be moved/protected.
  2. Closure conditions.
  3. Seasonal, watershed saturation, and storm event priorities.
  4. Notification protocols for park staff and visitors.
- Train staff and volunteers in the implementation of the plan.
- Prepare informational and warning signs and brochures.
- Establish formal notification/warning procedures between the Fort Davis NHS and the National Weather Service.
- Heightened awareness during the monsoon rain months of July, August, and September, especially when the watershed is saturated by previous rains.
- Formalization of evacuation routes and mobilization sites for rescue.
- Review and revise the plan elements every 2–3 years.

Impacts of the No-Action Alternative—Alternative A

Wetlands—In the no-action alternative, the South Channel would remain the only operational drainage system from the Davis Mountains through Fort Davis NHS, carrying the full surface drainage for all storm events. Wetlands associated along the South Channel ephemeral stream would be periodically disrupted by flooding events (a normal condition), but functioning naturally in all storm flow events. Created wetlands associated with the currently dysfunctional North Ditch and the South Channel dike system would continue to become drier as the water conveyance function ceases in all but moderate to high flow storm events.

Floodplain/Flash Floods—In the no-action alternative there would be insufficient safeguards from flash flooding to protect park resources. Buildings closest to the South Channel (headquarters/visitor center building and refurnished barracks) would be the most threatened by flooding of the 100-year or greater magnitude frequency, but all structures, some building contents, park staff, and visitors would continue to be threatened by flash flooding. The currently dysfunctional North Ditch and South Channel dike system would provide no protection from flooding.

Impacts of Alternative B

Wetlands—Portions of flood flows of low to moderate frequency would be intercepted by a rehabilitated North Ditch. Created intentional wetlands existing along the North Ditch would be maintained in function, but would be periodically disrupted for maintenance after flooding events. Minor disruption to the created wetlands would occur during the rehabilitation of the North Ditch. Wetlands associated along the South Channel ephemeral stream would be periodically disrupted by flooding events (a normal condition), but functioning naturally in all storm flow events. Created wetlands associated with the currently dysfunctional South Channel dike system would continue to become drier as water conveyance function ceases in all but moderate to high flow storm events.

Floodplain/Flash Floods—Minor improvements to protect against the potential flooding of the historic buildings would be implemented by optimizing flow in the North Ditch. Low to moderate flows would be conveyed around the fort grounds, but large magnitude runoff events, such as the 100-year flood or greater, would likely exceed the capacity of the existing system no matter how it is managed. Buildings closest to the South Channel (headquarters/visitor center building and refurnished barracks) would be the most threatened by flooding of the 100-year or greater magnitude frequency, but all structures, some building contents, park staff, and visitors would continue to be threatened by flash flooding. Fortunately, because of the nonconfining nature of the alluvial fan location, overbank flows are likely to occur as sheet flows and are not likely to obtain substantial depth. An exception to this is the extreme Maximum Estimated Flood, which could possibly produce dangerous conditions.

This alternative provides some reduced flood flow in the South Channel (50–100 cfs. when the flow reaches 200+ cfs.). Historic flood flow patterns established 100+ years ago would be largely preserved.

The dike would require initial rehabilitation and periodic maintenance to continue the flood protection. While providing some greater flood protection at low to moderate flows, this alternative would provide an increased risk of greater periodic flood damage to structures below the North Ditch were the ditch to be overwhelmed in a heavy flood event

Impacts of Alternative C

Wetlands—Portions of flood flows of low to moderate frequency would be intercepted by a rehabilitated North Ditch and South Channel dike system. Created intentional wetlands existing along the North Ditch and the South Channel dikes would be maintained in function, but would be periodically disrupted for maintenance after flooding events. Minor disruption to the created wetlands would occur during the rehabilitation. Wetlands associated along the South Channel ephemeral stream would be periodically disrupted by flooding events (a normal condition), but function naturally in all storm flow events.

Floodplain/Flash Floods—Minor improvements to protect against the potential flooding of the historic buildings would be implemented by optimizing

flow in the North Ditch and the South Channel dike system. Low to moderate flows would be conveyed around the fort grounds, but large magnitude runoff events, such as the 100-year flood or greater, would likely exceed the capacity of the existing system no matter how it is managed. Buildings closest to the South Channel (headquarters/visitor center building and refurnished barracks) would be the most threatened by flooding of the 100-year or greater magnitude frequency, but all structures, some building contents, park staff, and visitors would continue to be threatened by flash flooding. Fortunately, because of the nonconfining nature of the alluvial fan location, overbank flows are likely to occur as sheet flows and are not likely to obtain substantial depth. An exception to this is the extreme Maximum Estimated Flood, which could possibly produce dangerous conditions.

This alternative provides some reduced flood flow in the South Channel (50–100 cfs when flow reaches 200+ cfs). Historic flood flow patterns established 100+ years ago would be largely preserved. The ditch and the dikes would require initial rehabilitation and periodic maintenance to continue the flood protection. While providing the greatest flood protection of any of the alternatives at low to moderate flows, this alternative would provide an increased risk of greater periodic flood damage to structures below the North Ditch and the South Channel dikes were the ditches and dikes to be overwhelmed in a heavy flood event.

Impacts of Alternative D

Wetlands—All surface flows would be concentrated in the ephemeral South Channel stream, which was the natural surface flow condition prior to the U.S. Army ditch and dike system. The function of the wetlands associated with this stream would be largely preserved. Some disturbance would occur during minor rehabilitation of this channel and during periodic maintenance after flooding events. Wetlands associated along the South Channel ephemeral stream would be periodically disrupted by flooding events (a normal condition), but function naturally in all storm flow events. Created wetlands associated with the currently dysfunctional North Ditch and the South Channel dike system would continue to become drier as their water conveyance function ceases in all but moderate to high flow storm events.

Floodplain/Flash Floods—All surface flows would be concentrated in the ephemeral South Channel stream, which was the natural surface flow drainage condition prior to the establishment by the army of the ditch and dike system. Both the North Ditch and the South Channel dike system would be blocked to exclude diversions of South Channel flows, but would be allowed to remain as historic elements of the landscape. The most pertinent consequence of directing flows toward the South Channel is a somewhat more frequent instance of overbank flows. Buildings closest to the South Channel (headquarters/visitor center building and refurnished barracks) would be the most threatened by storm-event flooding of the 100-year or greater magnitude frequency, but all structures, some building contents, park staff, and visitors would continue to be threatened by flash flooding.

This alternative disturbs the least area while providing some flooding protection. Buildings threatened by the failure of the North Ditch or South Channel dike system during medium to high flow events (greater than the 100-year event) would gain some protection. This allows for the preservation of the appearance, but not the function, of an approximately 100+-year-old feature of the fort.

There would be some unquantified but minor reduction in historic groundwater hydrology along the North Ditch and the South Channel dike system. During low to moderate flood flow conditions there

would be a minor increase in flow along the South Channel stream, possibly affecting culverts, channels, and residential areas outside of the park boundary. This would require some hydraulic analysis. It could also require permitting by the U.S. Army Corps of Engineers (Section 404, Clean Water Act).

Wildlife and Threatened and Endangered Species

The Davis Mountains have abundant wildlife. Since the natural western boundary of Fort Davis NHS is shared with the Davis Mountains State Park, the potential for a large variety of fauna exists. Two species of deer—white-tailed (Odocoileus virginianus) and mule (Odocoileus heminonus)—are common. The collared peccary (Pecari tajacu), commonly known as javelina, is prevalent. The coyote (Canis latrans), bobcat (Felis rufus), mountain lion (Felis concolor), pronghorn (Antilocapra americana), gray fox (Urocyon cinereoargenteus), desert cottontail (Sylvilagus saudubonii), eastern cottontail (Sylvilagus floridanus), blacktail jackrabbit (Lepus californicus), raccoon (Procyon lotor), ringtail (Bassariscus astutus), and the common skunk (Mephitis mephitis) also make the area their habitat. Black bear (Ursus americanus) were present historically and are sighted today on rare occasions in the Davis Mountains.

Smaller mammals, such as the ground squirrel (Sperophilus mexicanus), rock squirrel (Spermophilus variegatus), pocket gopher (Thomomys bottae), deer mouse (Peromuscus maniculatus), and house mouse (Mus Musculus), as well as two species of bats—Mexican free-tailed (Tadarida brasiliensis) and Pallid (Antrozous pallidus)—are common in the park. Birds most commonly found at the fort are the barn and cliff swallow (Hirondo rustica and pyrrhonota), flycatcher (Muscicapidae), rock wren (Salpinctes obsoletus), turkey vulture (Cathartes avra), and red tail hawk (Buteo jamaicensis). A variety of reptiles and amphibians are also found at the fort.

According to the U.S. Fish and Wildlife Service (8/17/99), endangered species listed in Jeff Davis County, Texas, that have confirmed sightings are:

- American peregrine falcon (Falco peregrinus anatum)
- Black-capped vireo (Vireo atricapillus)
- Least tern (Sterna antillarum)
- Northern aplomado falcon (Falco femoralis septentrionalis)
- Southwestern willow flycatcher (Empidonax traillii extimus)
- Comanche Springs pupfish (Cyrinodon elegans)
- Pecos gambusia (Gambusia nobilis)
- Little Aguja pondweed (Potamogeton clystocarpus)

The U.S. Fish and Wildlife Service also listed several species of concern.

According to park natural resource staff, there are no known threatened or endangered species in the park.

Impacts of the No-Action Alternative—Alternative A

Current visitor use patterns do not affect wildlife habitats within the park.

Impacts of the Action Alternatives (B, C, and D)

Visitor use patterns would not affect wildlife habitats within the park. No wildlife habitat would be lost.

Conclusion—None of the alternatives considered would have any significant immediate or cumulative impact on wildlife or threatened and endangered species.

Air Quality

The park is within a Class II airshed. While visibility is usually clear, some serious concerns have been expressed about the air quality of the region.

Existing Sources of Pollution—Automobiles are one source of air

pollution. Traffic on roads produces an unknown quantity of pollutants, which may contribute to haze. Both inside and outside the park, dust is a problem where gravel roads and parking areas are heavily used.

Impacts of All Alternatives

Air quality would continue to be monitored and corrective actions taken within the park's jurisdiction, to maintain the Class II Airshed.

Conclusion—None of the alternatives considered would have any significant immediate or cumulative impact to the air and visual quality of the park.

Noise

Noise conditions vary from almost absolute solitude available in the western portions of the park to the military sounds heard on the parade ground to the sounds of bus motors in the parking area.

Impacts of the No-Action Alternative

Noise would continue to be managed as it has been in the past.

Impacts of Alternatives B and C

Alternatives B and C would slightly decrease (and thus positively affect) the amount of noise in the park by managing parking area congestion.

Conclusion—Neither of these alternatives would cause any significant immediate or cumulative noise impact that would affect visitor experience.

Impacts of Alternative D

Alternative D would slightly increase the amount of noise in certain developed areas by providing additional parking. As scope and areas for actions allowed under this plan are developed, further environmental review and analysis would be needed.

Conclusion—This alternative would not cause any significant immediate or cumulative noise impact that would affect visitor experience.

ECONOMIC CONTRIBUTIONS OF COMMUNITIES

Affected Environment

Fort Davis is approximately 160–180 miles southwest of Odessa-Midland, Texas, and 200 miles southeast of El Paso, Texas. A range of services (including lodging, gas, and food) can be found in the adjacent town of Fort Davis, a small, unincorporated, community of approximately 1,200 people. There is no zoning to govern the appearance or uses of the town.

The exact dollar amount of increases cannot be predicted because of the general nature of this plan. We can estimate the effect of future possible actions, however, using information from **the Money Generation Model (1990).** These estimates are shown for the impacts of alternatives below.

The existing budget for the park provides income to the local economy. Total combined sales from park operating expenditures are about $2.8 million annually. Total increased tax revenue gained from park-related activities is about $.23 million annually. Operations and use of the park result in approximately 85 jobs for the local community.

For every 1,000 additional visits, approximately $23,000 in combined sales is added to the local economy along with $2,000 in increased tax revenue. One additional job is also created. For every $100,000 expended by the park, approximately $160,000 in combined sales is added to the local economy along with $13,000 in increased tax revenue. Five additional jobs are also created.

Impacts of the No-Action Alternative

There would be no additional contribution to the local economy from this alternative.

Impacts of Alternative B

This alternative would provide a slight short-term increase to the local economy. There are two types of estimated increases: short-term (from capital investment) and long-term (from an increase in the annual operating budget).

In the short term, it is estimated that an expenditure of about $.34 million would create a one-time benefit to the economy. The benefits would be an increase of $.53 million in total combined sales, approximately $44,000 in tax revenue, and approximately 16 additional jobs. This would not necessarily occur in the local economy.

In the long term, there would be no additional contribution to the economy.

Conclusion—Alternative B would provide a slight beneficial increase to the socioeconomics of the area.

Impacts of Alternative C

The proposal would provide a short-term increase in the economic contribution to the local community.

In the short term, it is estimated that an expenditure of about $.79 million would create a one-time benefit to the economy. The benefits would be an increase of $1.2 million in total combined sales, approximately $102,000 in tax revenue, and approximately 37 additional jobs. This would not necessarily occur in the local economy. Upon implementation of Phase 2, it is estimated that an expenditure of an additional $1.4 million would create an additional one-time benefit of $2.4 million in total combined sales, $208,000 in tax revenue, and 75 jobs for the life of the projects.

In the long term, increases in the park's operational budget of $106,000 would create a benefit to the economy of $169,000 in total combined sales and approximately $14,000 in tax revenue and would create 5 jobs in the local economy. Upon implementation of Phase 2, an additional increase in the park's operational budget of $66,000 would create an additional benefit to the economy of $106,000 in total combined sales and approximately $9,000 in tax revenue and would create 3 jobs in the local economy.

Conclusion—Alternative C would provide a beneficial increase to the socioeconomics of the area. Upon implementation of Phase 2, there would be an additional minor beneficial increase to the socioeconomics of the area.

Impacts of Alternative D

This alternative would provide the most short-term increase in economic contributions to the local community.

In the short term, it is estimated that an expenditure of about $2.4 million would create a one-time benefit to the economy. The benefits would be an increase of $3.7 million in total combined sales, approximately $312,000 in tax revenue, and approximately 114 additional jobs. This would not necessarily occur in the local economy.

In the long term, increases in the park's operational budget of $172,000 would create a benefit to the economy of $275,000 in total combined sales and approximately $23,000 in tax revenue and would create 8 jobs in the local economy.

Conclusion—Alternative D would provide a beneficial increase to the socioeconomics of the area.

ADJACENT LANDOWNERS

Affected Environment

Some of the private parcels of land adjacent to the park are used for businesses and residential purposes. Specific impacts and values associated with land protection concerns are the preservation of historic resources and the setting in which they occur. Management actions under action alternatives seek to preserve the viewshed, the ambience, and the feeling of openness that encompass the fort and contribute to a quality experience for visitors.

Impacts of the No-Action Alternative

Under the no-action alternative, there would be no impacts on adjacent landowners.

Impacts of Alternatives B and C

Adjacent landowners would be encouraged to manage their land in ways that would be compatible with park values. Upon Phase 2 implementation, there would be a positive benefit of increased community connection associated with the relocation of the administrative offices outside the park.

Impacts of Alternative D

Adjacent landowners would be encouraged to manage their land in ways that would be compatible with park values. There would be a positive benefit of increased community connection associated with the relocation of administrative offices outside the park.

FACILITIES/OPERATIONAL EFFICIENCY

Affected Environment

For the most part, the current facilities at Fort Davis NHS are in good condition. In recent years, special funding for maintenance projects has resulted in the upgrading of several buildings to include:

- A fire suppression system in the restored enlisted men's barracks, which now houses the administrative offices, visitor center, museum, auditorium and curatorial office, and storage space.
- The painting of trim on several buildings along officers' row.
- New cedar roofs for two restored barracks.
- Improved accessibility between buildings.
- Added handicapped facilities in rest rooms.
- New air conditioning/heating units for several areas.

The maintenance facility is located at the park entrance and is partially screened by young trees. The trees help shield the maintenance complex and government quarters from visitors' view.

The park manages 250 historic buildings, foundations, and sites. Five historic buildings have been restored and refurnished, and 21 buildings are roofed. Park facilities include a visitor center, administrative office complex, maintenance area, 3 residences, 2 water (well) systems for irrigation and fire protection purposes, picnic area, 2 sewer systems, 2 cesspools, 67 acres of mowed grounds with more than 160 trees, 3 miles of boundary fence, 4 miles of self-guided trails, and 6.1 miles of roads.

Existing Conditions and Use of Park Facilities—The park visitor center, museum, auditorium, administrative offices, and curatorial storage are housed in a historic military barracks. The interior floor area for this structure is 6,210 square feet and is in good condition. The structure is inadequate in size to accommodate the needs of administration, interpretation, and curatorial work.

The maintenance facility is enclosed within a masonry wall and consists of a storage building for flammable products, a utility shed, a maintenance shop, a utility yard, and one small, self-contained

storage shed. The enclosed interior floor area is approximately 1,500 square feet. The structures are in fair condition, but are inadequate for their intended uses. Several OSHA and Life, Health, Safety violations exist that are not correctable without additional facilities and funding.

Park roads consist of 1.4 miles of bituminous paved surface and 4.7 miles of unpaved service roads. Paved surfaces are in good condition, and unpaved surfaces are in fair condition. The paved roads provide access into the park, the visitor parking area, and the housing and maintenance areas. All unpaved surfaces provide access to the historic buildings, ruins, trails, and utilities.

Park housing is in good condition. The residence is a triplex building, containing three residences with attached one-car garages and detached exterior storage sheds. Each residence has approximately 1,100 square feet of interior floor area. The storage shed has 135 square feet of interior floor area.

There is inconsistency within the park as to the number of recorded historic buildings, ruins, and sites. The List of Classified Structures includes 110 structures on the inventory. The park inventory lists over 250 structures and ruins and 8 known archeological sites.

Of the 110 buildings recorded, there are five restored and refurnished historic structures.

Existing conditions of historic buildings/ruins/sites are as follows:

- Restored and furnished historic structures: 4 Good, 1 Fair (5)
- Partially restored historic structures: 1 Good, 2 Fair (3)
- Ruins w/Roofs: 9 Good, 9 Fair (18)
- Ruins, exposed: 51 Good, 62 Fair, 4 Poor (117)
- Unexcavated Ruins: Condition Unknown (42)
- Archaeological Sites: 3 Good, 4 Fair, 1 Poor (8)

Utilities within the park include one 50,000-gallon water storage tank, 13,800 linear feet of water line, 2 water wells, and 4 septic systems (2 tanks w/leach field and 2 cesspools). Two of the four septic systems are in fair condition, and the two cesspools are considered to be in poor condition. The cesspools should be replaced when funding is available. The water lines are in fair condition, but need to be upgraded to provide sufficient volume for fire protection and for routine irrigation.

Other park facilities include 1 bunkhouse, 3 wooden bridges, 104 informational signs, 1 flagpole, 3 trailer sites with partial concrete pads, 2 weather stations, and an employee gravel, 15-car unpaved parking area between the maintenance and residential area.

Three bridges provide access across historic ditches and into the historic core area. One bridge, located at the visitor parking area, is for pedestrian access only and is in good condition. The other two wooden bridges provide pedestrian and vehicular access across ditches. These two bridges are in fair condition but will require structural repair to the tread surfaces.

The bunkhouse is located at the western end of hospital canyon. It is an open structure with no divided rooms except for rest room facilities. It has gas utilities and water only. The structure is in fair condition. It is used intermittently in the summer months for volunteers and researchers.

The three trailer pads are used for long-term volunteers and are in good condition. The sites have electric, sewer, water, cable, and telephone service hookups.

All other facilities, including signs, flagpole, weather stations, and parking areas, are in good to fair condition.

In some areas of Fort Davis NHS access for visitors with disabilities is adequate. An electric cart is available to visitors upon request. Three furnished buildings currently are accessible to visitors with disabilities, and the remaining buildings are scheduled for improved access. Two handicap spaces are reserved in the parking lot. The surfaces of many visitor-use paths are uneven and difficult for wheelchair use.

Impacts of the No-Action Alternative—Alternative A

The effects of the no-action alternative would be a continuation of the present situation. The current visitor center is too small to meet the needs of increasing visitation. Space is not available to conduct environmental education programs. The existing water distribution system is inadequate to meet fire suppression needs.

Impacts of Alternative B

Impacts on operational efficiency would slightly increase with an improved water system and equipment to meet fire protection needs. Space would be increased for visitor orientation and environmental education. There would be an increase of personal services and outreach education programs for visitors.

Impacts of Alternative C

Impacts on operational efficiency would slightly increase with an improved water system and equipment to meet fire protection needs. Space would be increased for visitor orientation and environmental education. There would be an increase of personal services and outreach education programs for visitors.

Impacts of Phase 2 implementation are documented in Alternative D.

Impacts of Alternative D

The construction of new facilities outside the existing boundary would result in the consolidation of all administrative functions. Considerable savings would be realized in terms of human and fiscal resources. Historic structures would be used more appropriately. New maintenance facilities would improve views into the park from State Highways 17 and 118. Significant savings would be realized by having adequate storage facilities to safeguard equipment, supplies, materials, and the museum collection.

Visitors would be better served with facilities large enough to meet their needs through space improvements in existing visitor facilities. An improved water distribution system would enhance employee and visitor safety by ensuring a dependable supply for fire suppression.

SHORT-TERM AND LONG-TERM EFFECTS OF THE PROPOSAL

Compared with a land base of 473.87 acres, land-use consumption would decrease by about .2 acres with the remodeling of the existing visitor facilities. The proposal would improve long-term management, provide better protection to the environment, and enhance visitor experience.

Interpretation and visitor orientation would be more effective. Also, managers would be more efficient and effective in carrying out long-term management goals through the use of broadly defined prescriptions for land management contained in the proposal.

There would be minor benefits to the economy. Short term, from the expenditure of about $.8 million, a one-time benefit of $1.2 million in total combined sales, $102,000 in tax revenue, and 37 jobs would result for the life of the projects. Long term, from the expenditure of about $.1 million for additional staff, an annual benefit of $169,000 in total combined sales, $14,000 in tax revenue,

and 5 jobs would result. If Phase 2 were implemented, additional benefits would accrue to the economy. All the benefits would not necessarily occur in the local economy.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES RELATED TO THE PROPOSAL

Some archeological sites are subject to irreversible damage (because of vandalism and loss of contextual relationships between objects) that compromises these sites. When objects are removed from a site or moved within a site, this irreversible damage affects the potential for future archeological research to fully derive all scientific knowledge from that particular site.

Additional visitation would tend to increase the potential for more damage occurring to archeological sites and the loss of artifacts. This could occur no matter what protective measures are put in place or what messages are provided through interpretation and education.

CUMULATIVE EFFECTS OF THE PROPOSAL

The impact analysis of the proposed GMP looks at all actions in the past, present, and reasonably foreseeable future that would affect Fort Davis NHS and its visitors. Cumulative effects would be insignificant and no elements of precedence were identified by any of the alternatives considered.

The NPS proposal for parking improvements and dike modifications for protecting historic resources from flash floods would disrupt less than 1 acre of previously disturbed area. Remodeling of the quarters would reduce impacts on the historic resource and increase operational efficiency.

Wetlands—There would be minor disruptions to natural stream corridor wetlands during periodic maintenance and minor short-term disturbance of created wetlands during periodic maintenance after flooding. Existing natural and created wetlands on site would be largely preserved as they have been for approximately 100 years. None of these actions represents a significant cumulative impact upon wetlands on the Fort Davis site or in the area outside of the park.

Floodplains/Flash Floods—Through the rehabilitation of the North Ditch and the South Channel dike system and the regular maintenance of the South Channel, there would be a reestablishment of flood flow regimes as they have operated since the late 1800s. No cumulative change would be affected on site through this reestablishment of historic flood flows, and the off-site cumulative change to floodplain or flash flooding would be insignificant, since the flows would be nearly identical to those experienced for approximately 100 years.

TABLE 4 — COMPARISON OF ENVIRONMENTAL IMPACTS

	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Visitor Experience	+ No change on visitor experience.	+ Same as Alternative C, but less emphasis on increased programs.	+ Focuses on improving visitor services/access to information via outreach/park programs. + No change in visitor flow/use patterns. +Improvements in parking; increase capacity. + Broad range of interpretation and orientation at visitor center. + Visitation exceeds 125,000/transportation study conducted—evaluating alternative means of accessing the fort to maintain a quality visitor experience/minimize impact of larger vehicles on the historic scene. + Quality of stay to improve—through more and better programs. + With the implementation of Phase 2, more emphasis on facility and space improvements to accommodate visitors and improve the historic scene.	+ Same as Alternative C, but more emphasis on facility and space improvements to accommodate visitors and improve the historic scene.
Archeological Resources	+ No effect on known sites--locations well documented/surveyed.	+ No effect on known sites: Same as Alternative A.	+ No effect on known sites: Same as Alternative A.	+ No effect on known sites: Same as Alternative A.
	+ Ground-disturbing activity monitored to mitigate any impacts.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.
	+ Sites near visitor-use areas—vulnerable to surface damage—monitor to protect.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.
	+ Periodic increased water flows may erode areas in the alluvial floodplain—a possible impact on archeological resources.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.
Cultural Landscape and Historic Resources	+ Historic landscape managed as historic landscape resource.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.
	+ Any modifications will not reduce area integrity.	+ Same as Alternative A.	+ Same as Alternative A.	+ Changes in parking area carefully done to maintain integrity of landscape areas/features.
	+ No adverse effect on this landscape.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.

TABLE 4 — COMPARISON OF ENVIRONMENTAL IMPACTS

	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Cultural Landscape and Historic Resources	+ Pending completion of CLI and CLR, integrity/principles/materials maintained.	+ Pending completion of CLI and CLR, integrity/principles/materials maintained. Minimize modern intrusions on viewsheds. Retain the less-developed, more historic views from the historic landscape within the park.	+ Same as Alternative B.	+ Same as Alternative B.
	+ No changes to historic/scenic vistas from within the park.	+ Same as Alternative A.	+ Phase 1: Same as Alternative A.	+Same as Alternative C, Phase 2.
			+ With Phase 2 implementation, relocation of maintenance facility, employee housing, Bally bldg. to outside park would improve vistas/views of fort from State Highways 17 and 118.	
			+ With Phase 2 implementation, change would provide more historically accurate/attractive approach to fort without adversely impacting historic structures/cultural landscape.	+Same as Alternative C, Phase 2.
	+ Historic structures— buildings and facilities open to the public not improved— some remain inaccessible to mobility impaired.	+ Historic structures— improvements to make post hospital accessible to mobility-impaired visitors.	+ Historic structures— improvements to make post hospital and other historic buildings accessible to mobility-impaired visitors.	+ Same as Alternative C, Phase 2.
		+ Installation of fire suppression equipment would not adversely affect historic resources— will add to their protection.	+ Installation of fire suppression equipment would not adversely affect historic resources—will add to their protection.	+Same as Alternative C, Phase 2.
		+ North Ditch reconstructed for flood control—could result in an adverse effect to the historic fabric. Mitigation--recording reduces impact to no adverse effect.	+North Ditch/South Channel reconstructed for flood control—could result in adverse effect to historic fabric. Mitigation--recording reduces impact to no adverse effect.	+South Channel reconstructed for flood control-could result in adverse affect to historic fabric. Mitigation-recording reduces impact to no adverse effect.
		+ Use of buildings/structures contribute to their long-term preservation.	+ Same as Alternative B.	+ Same as Alternative B.
		+ Changes will be compatible with historic function/consistent with the preservation of historic fabric.	+ Same as Alternative B.	+Same as Alternative B.
		+ Partial restoration and refurnishing of post hospital enhances visitor experience.	+ Partial restoration and refurnishing of post hospital enhances visitor experience.	+ Partial restoration and refurnishing of post hospital enhances visitor experience.
			+ With Phase 2 implementation, removal of maintenance building, employee complexes, and	+ Same as Alternative C, Phase 2.

TABLE 4 — COMPARISON OF ENVIRONMENTAL IMPACTS				
	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Cultural Landscape and Historic Resources			the curatorial Bally building from the historic scene would provide uses more historically compatible/improve viewing from the highway.	
			+ With Phase 2 implementation, administrative offices outside park/reallocation of space to historic functions helps reduce presence of nonhistoric functions/features in historic structures.	+ Same as Alternative C, Phase 2.
	+ No physical impacts to known ethnographic resources are anticipated.	+Same as Alternative A.	+ Same as Alternative A.	+Same as Alternative A.
Soils/Vegetation	+ Existing measures to minimize impact to soils and vegetation to continue.	+ Minor soil/vegetation alterations + potential—soil compaction/soil erosion/loss of soil permeability/changes in soil chemistry/loss in soil insulation.	+ Same as Alternative B.	+ Same as Alternative B.
		+ Trampling gradually diminishes vegetation/increases soil exposure to wind, rain, and hail.	+ Same as Alternative B.	+ Same as Alternative B.
		Mitigation— Educational/interpretive programming teaching visitors the importance of staying on trails. Activities geared toward minimum impact.	Mitigation— Same as Alternative B.	Mitigation— Same as Alternative B.
		+Modifications to soil and topography to reduce soil compaction around heavily used facilities.	+Same as Alternative B.	+Same as Alternative B.
		+ Short term—temporarily rapid erosion.	+ Same as Alternative B.	+ Same as alternative B.
		+Long term—soil protected and preserved.	+Same as Alternative B.	+Same as Alternative B.
		+Designed and landscaped areas consistent with the Cultural Landscape Report (CLR).	+Same as Alternative B.	+Same as Alternative B.
		+Topsoil replacement, when needed.	+Same as Alternative B.	+Same as Alternative B.
		+Monitoring to mitigate impacts.	+Same as Alternative B.	+Same as Alternative B.
		+ Conclusion—no significant immediate or cumulative impact to soils/vegetation.	+ Conclusion—Same as Alternative B.	+ Conclusion—Same as Alternative B.

TABLE 4 — COMPARISON OF ENVIRONMENTAL IMPACTS

	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Wetlands, Floodplains, and Water Resources	+ Wetlands—periodically disrupted by flooding events (a normal condition).	+ Wetlands—portions of flood flows intercepted by a rehabilitated North Ditch.	+ Wetlands—portions of flood flows intercepted by a rehabilitated North Ditch and South Channel dike system.	+ Wetlands—portions of flood flows intercepted by a rehabilitated South Channel.
		+Created wetlands maintained in function—periodically disrupted for maintenance.	+ Same as Alternative B.	+ Function of the wetlands associated with the South Channel would be largely preserved.
		+Minor disruption to the created wetlands during the rehabilitation of the North Ditch.	+Minor disruption to the created wetlands during the rehabilitation.	+ Some disturbance during minor rehabilitation of South Channel.
				+ Some disruption during periodic maintenance after flooding events.
		+South wetland channel ephemeral stream—periodically disrupted by flooding events--functioning naturally in all storm flow events.	+Same as Alternative B.	+Same as Alternative B.
	+ Created wetlands continue to become drier.	+ Created South Channel dike wetland system becomes drier.	+Created wetlands continue to become drier.	+ Created North Ditch and South Channel dike wetland system becomes drier.
	+ Floodplain/flash floods—insufficient safeguards from flash flooding.	+ Floodplain/flash floods—minor protective improvements for flooding—optimize flow in North Ditch.	+ Floodplain/flash floods—minor protective improvements for flooding—optimize flow in North Ditch and South Channel system.	+ Floodplain/flash floods—both the North Ditch and the South Channel dike system blocked to exclude diversions of South Channel flows, but allowed to remain as historic elements of the landscape.
		+Low to moderate flows conveyed around the fort grounds--but large magnitude runoff events, such as the 100-year flood or greater, will likely exceed the capacity of the existing system.	+Same as Alternative B.	+ Somewhat more frequent instance of overbank flows for South Channel.
	+ Buildings closest to South Channel most threatened by flash flooding.	+ Buildings closest to the South Channel most threatened by flooding of the 100-year or greater magnitude frequency.	+ Same as Alternative B.	+Same as Alternative B
	+Dysfunctional North Ditch and South Channel dike system provides no protection from flooding.	+ All structures, some building contents, park staff, and visitors would continue to be threatened by flash flooding.	+Same as Alternative B.	+ Disturbs least new or existing landscape while providing some flooding protection.
		+ Overbank flows are as likely as sheet flows and will not attain substantial depth.	+ Same as Alternative B.	+ Buildings threatened by failure of North Ditch / South Channel dike system during medium to high flow gain some protection.
				+ Allows for preservation of the appearance, but not the function of created wetlands.

TABLE 4 — COMPARISON OF ENVIRONMENTAL IMPACTS				
	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Wetlands, Floodplains, and Water Resources				+ Some minor reduction in historic groundwater hydrology along dike system. + During low to moderate flood flows—minor increase in flow along the South Channel affecting culverts, channels, and residential areas outside of the park boundary.
		+ Maximum Estimated Flood could produce dangerous conditions.	+ Same as Alternative B.	+ Same as Alternative B.
		+Some reduced flood flow in the South Channel.	+Same as Alternative B.	+ Requires some hydraulic analysis/possible permitting by the U.S. Army Corps of Engineers (Section 404, Clean Water Act).
		+Historic flood flow patterns established 100+ years ago preserved.	+Same as Alternative B.	
		+Ditch would require initial rehabilitation and periodic maintenance.	+Same as Alternative B.	
		+Increased risk of greater periodic flood damage to structures below the North Ditch when the ditch is overwhelmed in a heavy flood event.	+ Greatest flood protection of any of the alternatives at low to moderate flows—increased risk of greater periodic flood damage to structures below North Ditch and South Channel dikes when overwhelmed in a heavy flood event.	
Wildlife & Threatened &Endangered Species	+ Locations/seasons structured to minimize any effect on wildlife.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.
	+ No wildlife habitat lost.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.
	+ No effect on birds/wildlife.	+ Same as Alternative A.	+ Same as Alternative A.	+Same as Alternative A.
		+ Conclusion—no significant immediate or cumulative impact on wildlife or threatened and endangered species.	+ Conclusion—Same as Alternative B.	+ Conclusion—Same as Alternative B.
Air Quality	+ Existing pollution from automobiles, traffic, dust continues.	+ Air quality monitored—corrective actions taken to maintain Class II Airshed.	+ Same as alternative B.	+ Same as Alternative B.
		+ Conclusion--no significant immediate or cumulative impact to the air and visual quality.	+ Conclusion—Same as Alternative B.	+ Conclusion—Same as Alternative B.
Noise	+ Noise will continue to be managed.	+ Potential for slight decrease in negative noise through managing parking area congestion.	+ Same as Alternative B.	+ Potential for slight increase in noise in certain developed areas by providing additional parking.

TABLE 4 — COMPARISON OF ENVIRONMENTAL IMPACTS				
	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Noise				+Further environmental review and analysis needed prior to site design.
		+ Conclusion—no significant immediate or cumulative noise impact affecting visitor experience of the park.	+ Conclusion—Same as Alternative B.	+ Conclusion—Same as Alternative B.
Economic Contributions to Communities	+ Continues to provide income to local economy.	+ Increases to local economy above Alternative A—estimate effect of future possible actions.	+ Same as Alternative B.	+ Same as Alternative B.
	+ Total combined sales from park operating expenditures--about $2.8 million annually.	+ Short-term—expenditure of about $348,000 for projects.	+ Short-term—expenditure of about $778,500 for projects. Phase 2: expenditure of about $1.4 million for projects.	+ Short-term—expenditure of about $2.4 million for projects.
	+ Total increased tax revenue being gained from park-related activities is about $.23 million annually.			
	+ Operations and use of the park results in about 85 jobs for the local community.	+ One-time benefit of $.53 million in total combined sales, $44,000 in tax revenue, 16 jobs for the life of the projects.	+ One-time benefit of $1.2 million in total combined sales, $102,000 in tax revenue, 37 jobs for the life of the projects. Phase 2: one-time benefit of $2.4 million in total combined sales, $208,000 in tax revenue, 75 jobs for the life of the projects.	+ One-time benefit of $3.7 million in total combined sales, $312,000 in tax revenue, 114 jobs for the life of the projects
			+Long term—increases in the operational budget of $106,000. Phase 2: increases in the operational budget of an additional $66,000.	+Long term—increases in the operational budget of $172,000.
			+ Annual benefit of $169,000 in total combined sales, $14,000 in tax revenue, 5 jobs. Phase 2: additional annual benefit of $106,000 in total combined sales, $9,000 in tax revenue, 3 jobs.	+ Annual benefit of $275,000 in total combined sales, $23,000 in tax revenue, 8 jobs.
	+Conclusion—does not significantly impact the socio-economics of the area.	+ Conclusion—minor beneficial increase to the socioeconomics of the area.	+ Conclusion—beneficial increase to the socioeconomics of the area, depending on phased implementation. Upon Phase 2, there would be an additional minor beneficial increase to the socioeconomics of the area.	+ Conclusion—beneficial increase to the socioeconomics of the area.

TABLE 4 — COMPARISON OF ENVIRONMENTAL IMPACTS

	Alt. A—No Action	Alt. B	Alt. C—NPS Proposal	Alt. D
Adjacent Landowners	+ Current management continues.	+ Continue to encourage adjacent landowners to use their land in ways that complement park values.	+ Same as Alternative B.	+ Continue to encourage adjacent landowners to use their land in ways that complement park values.
			+ Phase 2: increased connection to community associated with the relocation of administrative offices outside park.	+ Increased connection to community associated with the relocation of administrative offices outside park.
Facilities/Operational Efficiencies	+ Continuation of the current situation.	+ Slight increase with an improved water system/equipment to meet fire protection needs.	+ Same as Alternative B.	+ New facility outside the existing boundary—consolidation of admin. functions. + Considerable savings in human/fiscal resources.
	+ Visitor center too small to meet increasing visitation.	+ Increased space for orientation/environmental education.	+ Same as Alternative B.	+ Historic structures used more appropriately.
	+ Space not available to conduct environmental education programs.	+ Greater use of personal services/outreach education to serve visitors.	+ Same as Alternative B.	+Same as Alternative B.
	+ Buildings do not meet National Electric Code Standards (NEC).	+ Facilities would be updated to meet code.	+ Same as Alternative B.	+Same as Alternative B.
	+ Maintenance facility does not meet OSHA or CFR standards.	+ Maintenance building brought up to maintenance standards.	+ Same as Alternative B.	
	+ Water system/equipment inadequate to meet fire protection needs.	+ Improved water system/equipment to meet fire protection needs.	+Same as Alternative B.	+ Same as Alternative B.
			+ Phase 2: Relocation/elimination of maintenance, employee housing, and "Bally" building, improves views into the park from State Highways 17 and 118.	+ Same as Alternative C, Phase 2.
			+ Phase 2: Adequate storage facilities to safeguard equipment, supplies, materials, and museum collections.	+ Same as Alternative C, Phase 2.
			+ Phase 2: Visitors more adequately served with facilities large enough to meet needs.	+ Same as Alternative C, Phase 2.

CHAPTER 5: CONSULTATION / COORDINATION

HISTORY OF PUBLIC INVOLVEMENT/AGENCIES CONSULTED

As described in the Purpose and Need, Planning Process section, scoping was conducted twice for the Fort Davis NHS GMP. The notice of intent to publish an environmental impact statement was published in the Federal Register on November 19, 1998. This draft environmental impact statement was be available for public review for a minimum of 60 days.

The following agencies were contacted during preparation of the plan:

U.S. Department of Interior, Fish and Wildlife Service

Texas State Historic Preservation Office

PLANNING TEAM

Intermountain Support Office Denver

Christopher Marvel, team captain/lead planner, Intermountain SO-Denver—BLA/BS, NYS College of Environmental Science and Forestry/Syracuse University, 22 years government (10 years USFS, 12 years NPS). Responsible for general coordination/document preparation, purpose and need, alternatives, tables, contract coordination, environmental consequences, and economic contributions.

John Reber, physical scientist, air and water resource coordinator for Intermountain Support Office, National Park Service. B.S. biology, M.S. biology/environmental monitoring, University of Hartford. Eight years NPS, including 7 years resource planning. Nine years technical services director and quality assurance manager in private concrete and construction materials firms. Seven years environmental analyst in private engineering and environmental consulting firm. Responsible for statement of findings and write-up on wetlands and flooding issues throughout the document.

Lori Kinser, visual information specialist, Intermountain SO-Denver—24 years as a primary provider of graphic support. Responsible for the production of graphics.

Fort Davis National Historic Site

Jerry R. Yarbrough, superintendent, Fort Davis National Historic Site—history major, New Mexico State University, 30 years government service (28 NPS). Responsible for overall coordination and public contact.

Elaine Harmon, curator, Fort Davis National Historic Site—B.A., Hunter College, New York and M.A., Sul Ross University in the History of Art, 20 years National Park Service. Responsible for curatorial information.

Regina Heiner, administrative officer, 18 years experience in National Park Service, including 7 years as facility manager at Fort Davis NHS. Responsible for information on park facilities.

Donna Gerstle Smith, park ranger, Fort Davis National Historic Site—B.A. social sciences, Webster University, St. Louis, Missouri. M.A. history, Sul Ross State University, Alpine, Texas. Eight years National Park Service. Master's thesis on 19th-century army medicine at Fort Davis; 7 years social studies teacher Prude Ranch Environmental Education Center; State of Texas Teaching Certification—social studies grades 6–12; 2 years Peace Corps volunteer (Tonga, South Pacific); author 2 books, Gentle People—History of Vava'u and Tonga Pictorial—

Tapestry of Pride. Responsible for information on outreach programs.

Susanna J. Liddell, administrative clerk, Fort Davis National Historic Site, 21 years NPS. Responsible for payroll, travel, third-party drafts, fee accountability, all clerical duties. Responsible for mailing lists and tracking.

Mary L. Williams, historian, Fort Davis National Historic Site. B.A., Daemen College (Buffalo, New York), M.A. history, University of Connecticut. Thirty years NPS. Responsible for document preparation—purpose and need, alternatives, tables, and environmental consequences.

Jeffrey Rust, Cultural Resource Manager, Fort Davis National Historic Site - B.A. and M.A., Anthropology (Archaeology emphasis), Brigham Young University, Provo, Utah. One year experience in National Park Service. Six years experience in cultural resource management / archaeology with private consulting firm. Master's Thesis on archaeological investigations of 19th-century army post (Camp Floyd) in central Utah. Responsible for management of cultural resources, including historic preservation of Fort Davis structures, archaeology, and NHPA/Section 106 compliance.

CONTRIBUTORS

Jill Cowley, historical landscape architect

Linda Carlson, editor, Carlson Editing

LIST OF RECIPIENTS

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Bob Gray, board member, Friends of Fort Davis NHS, and Fort Davis Historical Society representative

Mark Adams, superintendent of McDonald Observatory and board member, Friends of Fort Davis NHS

Malcolm "Bish" Tweedy, board member, Friends of Fort Davis NHS

Curtis Tunnell, retired executive director of Texas Historical Commission

Joe Duncan, president, Friends of Fort Davis NHS

Jerry Johnson, board member, Friends of Fort Davis NHS

Jan Smith, Fort Davis NHS volunteer

Larry Smith, former board member, Friends of Fort Davis NHS, Fort Davis NHS volunteer

Sam Witt, board member, Friends of Fort Davis NHS

Barbara Dirks, former board member, Friends of Fort Davis NHS

Lucy Jacobson, Fort Davis Historical Society representative

Larry Wingert, former board member, Friends of Fort Davis NHS and former Fort Davis NHS volunteer

George Grubb, justice of the peace, Jeff Davis County, former board member, Friends of Fort Davis NHS

Beth Francell, Fort Davis NHS volunteer

Larry Francell, board member, Friends of Fort Davis NHS, Fort Davis NHS volunteer

Delton Daugherty, superintendent, Region No. 1-Texas Parks and Wildlife Dept.

Alpine Chamber of Commerce

Bob Dillard, editor, Mountain Dispatch, former board member, Friends of Fort Davis NHS

Fort Davis Chamber of Commerce

Clyde Heron, noted western artist, former board member, Friends of Fort Davis NHS

Marfa Chamber of Commerce

Peggy Robertson, county judge, Jeff Davis County

Bob Mallouf, director, Center for Big Bend Studies, Sul Ross State University

Clay Miller, area rancher, Fort Davis Historical Society

Jodie Miller, Jeff Davis Historical Commission Chairperson

Wayne Sheehan, professor of history, Sul Ross State University

Alan Cox, superintendent, Chiricahua NM and Fort Bowie NHS

Neil Mangum, superintendent, Little Big Horn NM

Ninth U.S. Cavalry on Parade, Fort Davis, Texas, cica 1875

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5. Fort Davis National Historic Site

		Page
Establishment authorized	Act of September 8, 1961	346

An Act Authorizing the establishment of a national historic site at Fort Davis, Jeff Davis County, Texas, approved September 8, 1961 (75 Stat. 488)

Fort Davis National Historic Site, Tex.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior shall acquire, on behalf of the United States, by gift, purchase, condemnation, or otherwise, all right, title, and interest in and to such lands, not to exceed four hundred and sixty acres in all, together with any improvements thereon, as the Secretary may deem necessary for the purpose of establishing a national historic site at the site of Fort Davis, near the town of Fort Davis, Jeff Davis County, Texas.

SEC. 2. (a) The property acquired under the provisions of the first section of this Act shall be designated as the Fort Davis National Historic Site and shall be set aside as a public national memorial to commemorate the historic role played by such fort in the opening of the West. The National Park Service, under the direction of the Secretary of the Interior, shall administer, protect, and develop such monument, subject to the provisions of the Act entitled "An Act to establish a National Park Service, and for other purposes", approved August 25, 1916, as amended and supplemented, and the Act entitled "An Act to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance, and for other purposes", approved August 21, 1935, as amended.

39 Stat. 535. 16 U.S.C. 1–4.

49 Stat. 666. 16 U.S.C. 461–467.

(b) In order to provide for the proper development and maintenance of such national historic site, the Secretary of the Interior is authorized to construct and maintain therein such markers, buildings, and other improvements and such facilities for the care and accommodation of visitors, as he may deem necessary.

Appropriation.

SEC. 3. There are hereby authorized to be appropriated such sums, but not more than $115,000 for land acquisition, as are necessary to carry out the provisions of this Act. (16 U.S.C. § 461 note.)

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PUBLIC LAW 105–355—NOV. 6, 1998 112 STAT. 3247

Public Law 105–355
105th Congress

An Act

To authorize the Automobile National Heritage Area in the State of Michigan, and for other purposes.

Nov. 6, 1998
[H.R. 3910]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I—AUTOMOBILE NATIONAL HERITAGE AREA OF MICHIGAN

Automobile National Heritage Area Act.
16 USC 461 note [table].

SEC. 101. SHORT TITLE.

This title may be cited as the "Automobile National Heritage Area Act".

SEC. 102. FINDINGS AND PURPOSES.

(a) FINDINGS.—The Congress finds that—

(1) the industrial, cultural, and natural heritage legacies of Michigan's automobile industry are nationally significant;

(2) in the areas of Michigan including and in proximity to Detroit, Dearborn, Pontiac, Flint, and Lansing, the design and manufacture of the automobile helped establish and expand the United States industrial power;

(3) the industrial strength of automobile manufacturing was vital to defending freedom and democracy in 2 world wars and played a defining role in American victories;

(4) the economic strength of our Nation is connected integrally to the vitality of the automobile industry, which employs millions of workers and upon which 1 out of 7 United States jobs depends;

(5) the industrial and cultural heritage of the automobile industry in Michigan includes the social history and living cultural traditions of several generations;

(6) the United Auto Workers and other unions played a significant role in the history and progress of the labor movement and the automobile industry;

(7) the Department of the Interior is responsible for protecting and interpreting the Nation's cultural and historic resources, and there are significant examples of these resources within Michigan to merit the involvement of the Federal Government to develop programs and projects in cooperation with the Automobile National Heritage Area Partnership, Incorporated, the State of Michigan, and other local and governmental bodies, to adequately conserve, protect, and interpret

* * * * *

(4) Kaiser Corporation supported women workers by installing child care centers at the shipyards so mothers could work while their children were well cared for nearby.

(5) These women, referred to as "Rosie the Riveter" and "Wendy the Welder", built hundreds of Liberty and Victory ships in record time for use by the United States Navy. Their labor played a crucial role in increasing American productivity during the war years and in meeting the demand for naval ships.

(6) In part the Japanese plan to defeat the United States Navy was predicated on victory occurring before United States shipyards could build up its fleet of ships.

(7) The City of Richmond, California, has dedicated the former site of Kaiser Shipyard #2 as Rosie the Riveter Memorial Park and will construct a memorial honoring American women's labor during World War II. The memorial will be representative of one of the Liberty ships built on the site during the war effort.

(8) The City of Richmond, California, is committed to collective interpretative oral histories for the public to learn of the stories of the "Rosies" and "Wendys" who worked in the shipyards.

(9) The Rosie the Riveter Park is a nationally significant site because there tens of thousands of women entered the workforce for the first time, working in heavy industry to support their families and the War effort. This was a turning point for the Richmond, California, area and the Nation as a whole, when women joined the workforce and successfully completed jobs for which previously it was believed they were incapable.

(b) STUDY.—

(1) IN GENERAL.—The Secretary of the Interior shall conduct a feasibility study to determine whether—

(A) the Rosie the Riveter Park located in Richmond, California, is suitable for designation as an affiliated site to the National Park Service; and

(B) the Rosie the Riveter Memorial Committee established by the City of Richmond, California, with respect to that park is eligible for technical assistance for interpretative functions relating to the park, including preservation of oral histories from former works at the Richmond Kaiser Shipyards.

(2) REPORTS.—Not later than 6 months after the date of the enactment of this Act, the Secretary shall complete the study under paragraph (1) and submit a report containing findings, conclusions, and recommendations from the study to the Committee on Resources of the House of Representatives and the Committee on Energy and Environment of the Senate. Deadline.

SEC. 506. FORT DAVIS HISTORIC SITE, FORT DAVIS, TEXAS.

The Act entitled "An Act Authorizing the establishment of a national historic site at Fort Davis, Jeff Davis County, Texas", approved September 8, 1961 (75 Stat. 488; 16 U.S.C. 461 note), is amended in the first section by striking "not to exceed four hundred and sixty acres" and inserting "not to exceed 476 acres".

* * * * *

"(3) LAND ACQUISITION.—Notwithstanding subsection (h), the Secretary is authorized to acquire, in partnership with other entities, a less than fee interest in lands at Thompson Island within the recreation area. The Secretary may acquire the lands only by donation, purchase with donated or appropriated funds, or by exchange.".

Approved November 6, 1998.

LEGISLATIVE HISTORY—H.R. 3910:

CONGRESSIONAL RECORD, Vol. 144 (1998):
Oct. 10, considered and passed House.
Oct. 14, considered and passed Senate.
WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 34 (1998):
Nov. 6, Presidential statement.

○

APPENDIX 2: FUTURE PLANS AND STUDIES NEEDED

Future plans and studies needed for Fort Davis NHS include:

- New Comprehensive Archeological Survey
- Condition Assessments of Archeological Sites
- Cultural Landscape Inventory
- Cultural Landscape Report
- Ethnographic Study
- Comprehensive Interpretive Plan
- Natural Resource Management Plan and Fauna Study
- Cultural Resource Management Plan
- Safety Plan
- Flash Flood Plan (includes floodplain map)
- Historic Preservation Plan identifying types and levels of treatment
- Structural Fire Management Plan
- Wildland Fire Management Plan
- Transportation Study: Should visitation reach 125,000 visitors a year, a study would be initiated to evaluate the feasibility of a transportation system from the town of Fort Davis

APPENDIX 3: DRAFT STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11988 "FLOODPLAIN MANAGEMENT"

General Management Plan/Environmental Impact Statement

Fort Davis National Historic Site

Texas

Recommended: _____

Superintendent, Fort Davis National Historic Site Date

Concurred: _____

Chief, Water Resources Division Date

Approved: _____

Director, Intermountain Region Date

In accordance with Executive Order 11988 (Floodplain Management) and National Park Service guidelines for implementing the order, the National Park Service (NPS) has evaluated flooding hazards for Fort Davis National Historic Site and has prepared this statement of findings (SOF). As an integral part of the effort to develop a general management plan (GMP), the SOF describes the flood hazard, alternatives, impacts, mitigation, and informed decisions for the continued use of the historic site. Additional detail regarding the historic site, flooding history, and future plans may be found in the GMP.

INTRODUCTION

Fort Davis National Historic Site was authorized in 1961, symbolizing the era of western migration and the essence of the late 19th-century U.S. Army. The park preserves the historic landscape and buildings, ruins, and foundations of two forts, and makes them available to thousands of visitors for their enjoyment, understanding, education, and appreciation.

Since the establishment of Fort Davis in 1854, military personnel and now park managers have been plagued by periodic flash flooding of the site. Intense thunderstorms, which are characteristic of the region, often produce high volumes of runoff water. Given the small size of the watershed and the fort's position on an alluvial fan, some flooding may occur during summer months when rainfall is average or above average. The fort location is very likely within a flash flood zone.

During the second fort period (1867–1891), the army constructed a series of dikes and ditches to alleviate flooding of the fort. These protective structures are still in use, but because of limited design effectiveness (less than 100-year flood protection), erosion, human disturbances, and extensive maintenance requirements, these safeguards are not adequate to protect the area. Three action alternatives were considered in the general management plan, because of the fort's position on the alluvial fan no structural alternative could significantly reduce the threat of flash flooding while meeting the park's legislated purpose.

The NPS will continue to operate Fort Davis NHS with an operational plan (flood mitigation plan) that lowers the threat to life and property within the park. Fort Davis NHS will develop this plan, regularly educate staff and visitors in its detail, and periodically review it with any additional weather or flooding information that becomes available. The proposed plan in the general management plan (Alternative C) would reduce some flooding risk to historic structures and the cultural landscape of the fort, but would not provide any additional protection to those resources, park staff, or visitors during floods of a magnitude greater than the 100-year flood.

USE OF THE FLOODPLAIN

The historic core area of the fort lies on the alluvial floodplain. The U.S. Army chose this location for the fort. The NPS is committed through its enabling legislation to preserve and interpret the historic resources that include structures in the floodplain. The flood-prone alluvial fan area of the fort is occupied primarily

during daytime hours. Three on-site staff residences are present along the far north edge and distal end of the alluvial fan. Occupation of a floodplain in a flash flood-prone area constitutes a Class III action in reference to the National Park Service Floodplain Management Guidelines (NPS 1993), with the regulatory floodplain defined as that inundated by an extreme flood, and requires notification, warning, and development of mitigation for the flooding threat. The Maximum Estimated Flood (Qme) has previously been used as an estimate of the largest possible flood for a given watershed. Floods of this magnitude are exceptionally rare and not useful as a practical structural design standard. However, knowledge of the conditions associated with the worst-case flood can be useful for planning purposes and to help ensure human safety.

FLOOD RISK

Primary surface drainage through the fort occurs in the South Channel, flowing westerly around the historic structures. A floodplain map for the fort is not available at this time, but several surveyed cross sections were used with the U.S. Army Corps of Engineers' computer model, HEC-RAS, to compute hydraulic capacities of the dike and ditch system on site.

The dikes and ditches constructed by the army more than 100 years ago carry portions of surface flow as intercepting ditches and as diversion and detention ditch and dikes during storm events as little as 2–5-year floods and up to 50–100-year floods (see further description in Draft Environmental Impact Statement/General Management Plan, Fort Davis National Historic Site). During a flood event of 50 to 100-year frequency most of the partial flood control devices built by the army and maintained by the NPS would be overwhelmed, allowing flooding to access portions of the historic buildings. Flood flows in this area have the potential to affect the headquarters building, the visitor center, the barracks, and the on-site staff residences. The staff residences would be expected to experience backwater conditions, not any destructive depths or velocities during the 50-100, and even the 500-year frequency events.

Hydraulic modeling indicates that during the 500-year recurrence flood, overbank flow would attain depths less than 1 foot and associated velocities would not exceed 3 feet per second. The **Qme***,* on the other hand, could be capable of achieving depths in the range of 2 feet across the fan, with associated velocities ranging from 4–6 feet per second. While these conditions are not extremely dangerous, the combination of the depth, velocities, and the large area of inundation could be life threatening during daytime hours when the facility is occupied, and at night to the staff residences. Thus, in all but the most extreme flood, staff and visitors would still have enough time and ability to evacuate the flood-prone areas to safety.

The **Qme** flow would reach the majority of the fort buildings and staff residences building with at least shallow, but swiftly flowing water and debris. The **Qme** poses a potentially dangerous flooding condition to visitors and staff if it occurs. There are no reasonable alternatives that would provide for full protection from the **Qme** flood damage to the historic resources or to staff and visitors at the fort. Options to improve flood protection using on-site historic water conveyances, such as the North Ditch and the South Channel dike system, are sympathetic to the current and future objectives for the site and have been proposed as alternative elements in the current GMP. However, the optimized North Ditch and South Channel dike system would provide protection from flash flooding at less than the 100-year magnitude event. (NPS

1999). The construction of additional protective dikes and diversion structures has also been considered for many years, but has been deemed to be too disruptive to the cultural and historic resources of the site. These additional protective devices would also have to be constructed very close to the historic buildings (NPS 1997).

There have been no structural proposals that would provide any significant additional protection to staff and visitors to flash flooding. Short of the unreasonable options of completely denying access to staff and visitors from the flash flood-prone fort location or moving structures out of the flood zone there are no absolute protective measures available. Flood warning systems that rely on electronic sensors or personal observations are not foolproof in flash flood-prone areas such as this one.

PROPOSED ACTION

The NPS will continue to operate Fort Davis National Historic Site in a safe and prudent manner by optimizing on-site flood protective dike and ditch systems and flood threat awareness training for staff and visitors. Park staff will seek funding for topographic mapping of the site, especially the flood-prone areas of the fort, in order to produce an accurate floodplain map.

The NPS will develop a flood mitigation plan to address flooding threats, considering:

- Development of a decision tree for staff to minimize the threat to life, historic structures and staff residences by clear planning choices, including:
- Closure conditions
- Seasonal, watershed saturation, and storm event priorities
- Notification protocols for staff, visitors, and local emergency organizations
- Training for staff and volunteers in the implementation of the plan
- Preparation of informational and warning signs, brochures
- Establishment of formal notification/warning procedures between the park and the National Weather Service
- Heightened awareness periods during the monsoon rain months of July, August, and September, especially when the watershed is saturated by previous rains.
- Preemptive closures during small flooding events to avoid being trapped by larger ones
- Formalization of evacuation routes and mobilization sites for rescue
- Review and revision of the plan elements every 2–3 years

This proposed action does not represent a new or expanded impact on natural resource, cultural resource, or park infrastructure floodplain values at the fort. It does represent an informed decision concerning the continuation of a risk to human life, historic structures, and historic objects that is reduced by the mitigation contained in the flood mitigation plan. The risk to human life cannot be eliminated entirely.

SUMMARY

The NPS will continue to operate Fort Davis National Historic Site at a location that is very likely within a flash flood zone. Through the completion of the preferred alternative in the general management plan the park will optimize the higher frequency (50 to 100-year) flood improvements. The park will also produce a flood mitigation plan to substantially lower the threat to life and property within the fort area during the lower and higher frequency of occurrence (100-year to Qme) flood events. The park will develop this plan, regularly educate staff and visitors in its detail, and periodically review it with any additional relative weather or flooding information that becomes available.

REFERENCES

National Park Service

1999. Flood Hazard Assessment for Fort Davis National Historic Site, Draft Copy 6-17-99, Water Operations Branch U.S. Department of the Interior, National Park Service. 7 pp.

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APPENDIX 4: CONSULTATION

United States Department of the Interior

FISH AND WILDLIFE SERVICES

Austin Ecological Services Office
Hartland Bank Building
10711 Burnet Road, Suite 200
Austin, Texas 78758
(512)490-0057

AUG 17 1999

2-15-99-I-0580

Jerry R. Yarbrough
National Park Service
Fort Davis National Historic Site
P.O. Box 1456
Fort Davis, Texas 79734

RE: Species List Request/Fort Davis National Historic Site

Dear Mr. Yarbrough:

This responds to your letter, dated July 8, 1999, requesting the most current list of federally listed or proposed threatened and endangered species that may occur in Jeff Davis County, Texas. It is our understanding that the Fort Davis National Historic Site has begun a planning effort to develop a General Management Plan and that an Environmental Impact Statement (EIS) will be prepared.

We have enclosed the information you requested. This information should serve only as a general guide. We suggest that you evaluate habitat that is to be modified by any proposed activity to determine if it is suitable for any federally listed or proposed threatened or endangered species. If suitable habitat exists on or adjacent to proposed activities and impacts to the habitat are anticipated, we recommend that you consult with us further.

We recommend you also contact the Texas Parks and Wildlife Department (Endangered Resources Branch), Fountain Park Plaza Building, Suite 100, 3000 South IH-35, Austin, Texas 78704 (telephone 512/912-7011) for information concerning fish, wildlife, and plants of State concern.

We appreciate your concern for fish and wildlife resources and look forward to providing comments on the draft EIS. If we can be of further assistance, please contact Nathan Allan at (512) 490-0057.

Sincerely,

David C. Frederick
Supervisor

Enclosure

Federally Listed as Threatened and Endangered Species of Texas
June 30, 1999

This list represents species that may be found in counties throughout the state. It is recommended that the field station responsible for a project area be contacted if additional information is needed (see enclosed map).

DISCLAIMER

This County by County list is based on information available to the U.S. Fish and Wildlife Service at the time of preparation, date on page 1. This list is subject to change, without notice, as new biological information is gathered and should not be used as the sole source for identifying species that may be impacted by a project.

Edwards Aquifer species: (Edwards Aquifer County) refers to those six counties within the Edwards Aquifer region. The Edwards Aquifer underlies portions of Kinney, Uvalde, Medina, Bexar, Hays, and Comal Counties (Texas). The Service has expressed concern that the combined current level of water withdrawal for all consumers from the Edwards Aquifer adversely affects aquifer-dependent species located at Comal and San Marcos springs during low flows. Deterioration of water quality and/or water withdrawal from the Edwards Aquifer may adversely affect eight federally-listed species.

Comal Springs riffle beetle	(E)	*Heterelmis comalensis*
Comal Springs dryopid beetle	(E)	*Stygoparnus comalensis*
Fountain darter	(E w/CH)	*Etheostoma fonticola*
Peck's cave amphipod	(E)	*Stygobromus (=Stygonectes) pecki*
San Marcos gambusia	(E w/CH)	*Gambusia georgei*
Texas wild-rice	(E w/CH)	*Zizania texana*
Texas blind salamander	(E)	*Typhlomolge rathbuni*
San Marcos salamander	(T □w/CH)	*Eurycea nana*

* The Barton Springs salamander is found in Travis County but may be affected by activities within the Barton Springs Segment of the Edwards Aquifer, which includes portions of Northern Hays County.

Migratory Species Common to many or all Counties: Species listed specifically in a county have confirmed sightings. If a species is not listed they may occur as migrants in those counties.

American peregrine falcon	(E‡)	*Falco peregrinus anatum*
Least tern	(E)	*Sterna antillarum*
Whooping crane	(E w/CH)	*Grus americana*
Arctic peregrine falcon	(TSA)	*Falco peregrinus tundrius*
Bald eagle	(T)	*Haliaeetus leucocephalus*
Piping plover	(T)	*Charadrius melodus*
Loggerhead shrike	(SOC)	*Lanius ludovicianus*
White-faced ibis	(SOC)	*Plegadis chihi*

Jeff Davis County

American peregrine falcon	(E‡)	*Falco peregrinus anatum*
Black-capped vireo	(E)	*Vireo atricapillus*
Least tern	(E)	*Sterna antillarum*
Northern aplomado falcon	(E)	*Falco femoralis septentrionalis*
Southwestern willow flycatcher	(E‡)	*Empidonax traillii extimus*
Comanche Springs pupfish	(E)	*Cyprinodon elegans*
Pecos gambusia	(E)	*Gambusia nobilis*
Little Aguja pondweed	(E)	*Potamogeton clystocarpus*

Bald eagle	(T)	*Haliaeetus leucocephalus*
Mexican spotted owl	(T‡)	*Strix occidentalis lucida*
Mountain plover	(P/T)	*Charadrius montanus*
Shinner's tickle-tongue	(C)	*Zanthoxylum parvum*
Ojinaga ringstem	(SOC)	*Anulocaulis reflexus*
Watson's false clappia-bush	(SOC)	*Pseudoclappia watsonii*
Texas false saltgrass	(SOC)	*Allolepsis texana*
Ferruginous hawk	(SOC)	*Buteo regalis*
Northern gray hawk	(SOC)	*Buteo nitidus maximus*
Northern goshawk	(SOC)	*Accipiter gentilis*
Western burrowing owl	(SOC)	*Athene cunicularia hypugea*
White-faced ibis	(SOC)	*Plegadis chihi*
Limpia Creek pocket gopher	(SOC)	*Thomomys umbrinus texensis*
Davis Mountain cottontail rabbit	(SOC)	*Sylvilagus floridanus robustus*
Limpia southern pocket gopher	(SOC)	*Thomomys umbrinus limpiae*
Presidio mole	(SOC)	*Scalopus aquaticus texanus*
Texas horned lizard	(SOC)	*Phrynosoma cornutum*
Texas minute moss beetle	(SOC)	*Limnebius texanus*
Diminutive amphipod	(SOC)	*Gammarus hyalleloides*
Brune's tryonia	(SOC)	*Tryonia brunei*
Davis County springsnail	(SOC)	*Fontelicella davisi*
Phantom Lake cave snail	(SOC)	*Cochliopa texana*
Phantom tryonia (=Cheatum's snail)	(SOC)	*Tryonia cheatumi*
Dense cory cactus	(SOC)	*Coryphantha dasyacantha dasyacantha*
Desert night-blooming cereus	(SOC)	*Cereus greggii* var. *greggii*
Fringed paintbrush	(SOC)	*Castilleja ciliata*
Hinckley's jacob-ladder	(SOC)	*Polemonium pauciflorum* ssp. *hinckleyi*
Hinckley's brickelbush	(SOC)	*Brickellia brachyphylla* var. *hinckleyi*
Livermore sandwort	(SOC)	*Arenaria livermorensis*
Livermore sweet-cicely	(SOC)	*Osmorhiza mexicana* ssp. *bipatriata*
Long spur columbine	(SOC)	*Aquilegia longissima*
Many-flowered unicorn plant	(SOC)	*Proboscidea spicata*
Sandhill goosefoot	(SOC)	*Chenopodium cycloides*
Standley whitlow-grass	(SOC)	*Draba standleyi*
Texas purple spike	(SOC)	*Hexalectris warnockii*
Withered wooly milk-vetch	(SOC)	*Astragalus mollissimus marcidus*
Young's snowbell	(SOC)	*Styrax youngae*

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Statewide or areawide migrants are not included by county, except where they breed or occur in concentrations. The whooping crane is an exception; an attempt is made to include all confirmed sightings on this list.

E	=	Species in danger of extinction throughout all or a significant portion of its range.
T	=	Species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
C	=	Species for which the Service has on file enough substantial information to warrant listing as threatened or endangered.
CH	=	Critical Habitat (in Texas unless annotated ‡)
P/	=	Proposed ...
P/E	=	Species proposed to be listed as endangered.
P/T	=	Species proposed to be listed as threatened.
TSA	=	Threatened due to similarity of appearance.

SOC	=	Species for which there [illegible] information showing evidence of vulnerability, but not enough data to support listing at this tim[illegible]
□	=	with special rule
‡	=	CH designated (or proposed) outside Texas
–	=	protection restricted to populations found in the "interior" of the United States. In Texas, the least tern receives full protection, except within 50 miles (80 km) of the Gulf Coast.

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August 20, 2001

Superintendent
Fort Davis National Historic Site
P. O. Box 1456
Fort Davis, Texas 79734

Dear Mr. Yarbrough,

Thank you for sharing with us a copy of your recently completed General Management Plan. The National Park Service and The Texas Parks and Wildlife have always shared similar demands from the visiting public. Notwithstanding, we have similar operational philosophies with respect to the preservation of cultural and natural resources. With respect to the latter, I offer the following comments based on ten years of experience managing natural resources on Davis Mountains State Park.

Texas Parks and Wildlife has completed a comprehensive inventory of threatened and endangered species as well as other species of special concern on state park property directly adjacent to Fort Davis National Historic Site. The inventory, the results of which are detailed in the Resource Management Plan for Davis Mountains State Park (Hedges, Roberts, Bryan and Ing, May 2001), indicates that several species are present that fall in the above categories and therefore are of potential management concern for your site.

These species include:

FLORA - Species of Special Concern
No state or federal endangered or threatened species are known from Davis Mountains State Park. The following are rare and/or limited species that have been documented from the site.

- **Texas false saltgrass (*Allolepis texana*):** This stoloniferous grass is a native perennial found along sandy foodplains in the Trans-Pecos and the Mexican states of Durango and Coahuila. It is known from silty or sandy soil (Powell 1994) as well as cultivated and waste meadowlands or sand flats (Silveus 1933). Specimen label data from the mid-20th century suggest that it was once common to abundant in limited areas whereas currently it is extremely rare and local (Montgomery 1998). Texas false saltgrass is a dioecious species: male and female flowers occur on separate plants. No female populations are currently known and it is assumed that the species is surviving through asexual reproduction by stolons, which can reach 50 feet in length. Texas false saltgrass has been ranked as imperiled and very vulnerable to extinction throughout its range on a global scale (G2), and critically imperiled in Texas

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with less than six known occurrences (S1), making it especially vulnerable to extirpation from the state (Poole et al. 2000).

In 1994, Paul Montgomery found a small, isolated population growing along the Limpia Creek floodplain in the Texas Highway 118 highway right-of-way and just inside the adjacent DMSP boundary fence (Appendix A, Map 9). Stolon cuttings from this population were planted in a more protected area along the alluvial terrace of Limpia Creek in the Limpia Canyon Primitive Area. Although these plants persisted with supplemental water for a time and began to spread, drought conditions have taken a toll and very few if any plants remain alive. The only other known population in the Davis Mountains is near Wild Rose Pass on the Texas Highway 17 right-of-way, north of the park. Paul Montgomery found a small population along the highway right-of-way north of DMSP in 1994, but this population has not been relocated. See Montogomery (1998) for a complete summary of the known status and range of this rare grass. A monitoring plot has been established at the DMSP site (Hedges 2000).

- **Scented croton (*Croton suaveolens*):** This low shrub of the spurge family (Euphorbiaceae) is highly localized in the Trans-Pecos, with scattered records from Jeff Davis, Brewster, and Val Verde counties, as well as Coahuila, Mexico. It is locally common at Fort Davis National Historic Site and occurs in two known locations among syenite outcroppings and boulders at DMSP (Appendix Map 9). Scented croton is ranked as somewhat vulnerable to extinction (G3) on a global scale due to its rare and local nature, with less than 100 known occurrences (Jackie Poole, personal communication 3 May 1999).
- **Dense cory cactus (*Coryphantha dasyacantha* var. *dasyacantha*):** Barton H. Warnock recorded this cactus from DMSP on a collection report dated 1967. No specimen can be located, however, at either Sul Ross State University, The University of Texas-Austin, or the herbarium case at the Interpretive Center at DMSP which houses many of Warnock's collections from the park. Thus, locale data are unavailable; it is not known where or if Dense cory cactus occurs presently at DMSP. This species was formerly ranked a candidate for federal listing as endangered or threatened (FC2) but is now considered only a "species of concern" at the federal level (Poole and Carr, 1997). Additionally, it is considered imperiled and vulnerable to extinction in Texas due to rarity (S2), with 6 – 21 known occurrences, and vulnerable to extinction at the global level as well (G3), with 21 – 100 known occurrences (Poole et al. 2000). Dense cory cactus is endemic to the Trans-Pecos region of Texas, occurring among igneous rocks in grasslands and woodlands between 2,600 feet and 5,100 feet elevation from El Paso to Big Bend National Park (Correll and Johnston 1970). A moderately large population has been documented at the Chihuahuan Desert Research Institute, approximately three miles southeast of Fort Davis (Patricia Manning and A. Michael Powell, personal communication 4 May 1999). This species should

be looked for at Davis Mountains State Park among igneous rocks and outcrops.

- **Withered locoweed (*Astragalus mollissimus* var. *marcidus*):** This rare variety of wooly loco weed is known only from Dallam, Jeff Davis, and Presidio counties in Texas. It is ranked as demonstrably secure globally (G5) although imperiled in Texas due to rarity (S2), with 6 – 20 known occurrences. Until recently, the only specimen known from Jeff Davis County was collected in Musquiz Canyon over 50 years ago. In April 2000, a confirmed specimen was collected in grassland habitat approximately 5 miles northwest of DMSP (Jackie Poole and Linda Hedges, personal communication 16 May 2000). In 1993, a desiccant specimen suggestive of withered loco, but unconfirmed, was collected near the same locale (Clifton Ladd, personal communication 23 March 2000). Withered locoweed is not known from Davis Mountains State Park, however the common wooly locoweed (*Astragalus mollissimus* var. *earlei*) is abundant. Since the two taxa are very similar in appearance, are known to occur sympatrically (Turner 1959), and because withered loco has been confirmed in similar habitat near DMSP, the park's locoweeds need to be given closer scrutiny.

FAUNA - Species of Special Concern

Most species of concern occurring in the Davis Mountains are found in restricted habitat such as the summit of Mount Livermore or in enclaves of unique habitat along isolated stream courses deep in the mountains. The following list represents those species known to occur in DMSP unless otherwise noted (see Texas Natural Heritage Program 1993b for more data).

Endangered Species

- **Southwestern Willow Flycatcher** (*Empidonax traillii extimus*) was only recently listed as endangered at the federal level. It is a migrant and potential summer resident in the area. During fall and spring migration, the species is uncommon and can be found in a variety of habitats including many of those found on FDNHS. As a migrant, it utilizes habitat for shelter, feeding and roosting. Stands of large oaks are especially suitable habitat during migration. Breeding territories are strictly confined to riparian woodlands with a strong willow component; however, only historical nesting records exists for the species within Jeff Davis County.

Threatened Species

- **Bald Eagle** (*Haliaeetus leucocephalus*) has been recently established (or reestablished) as an occasional or uncommon winter resident in the Davis Mountains. It is an occasional transient at DMSP, typically observed passing overhead.
- **Zone-tailed Hawk** (*Buteo albonotatus*) is a common but local summer resident in the mountains and the foothills; however, observations at DMSP

almost always involve individuals flying overhead and to date the species has not been documented as nesting within the park boundaries.

- **Common Black-Hawk** (*Buteo anthracinus*) is also considered a rare and local summer resident in the mountains. This is a peripheral species that ranges over much of northern South American, Central America and Mexico. About 250 pair nest in the United States, with less than one percent of that total nesting in Texas (Schnell, et al. 1988). An obligate riparian nester dependent on mature, relatively undisturbed habitat supported by a permanent flowing stream, Common Black-Hawk occupies cottonwood gallery woodlands in the foothills of the Davis Mountains. At least two nesting pair occur within five miles of DMSP. The nesting birds located on adjacent property and immediately downstream from park property are frequently encountered feeding along the Limpia Creek riparian corridor located within the park. Post fledgling juveniles have been observed utilizing the same portion of the creek for feeding. On occasion, one or both of the adult birds have been observed in Keesey Canyon, in (or overhead of) the campground and adult birds regularly soar over the ridgeline where skyline drive is located. Should the downstream habitat become unsuitable for any reason, there is potential for the pair to nest within DMSP by occupying (nesting in) one of the larger trees located along the permanent section Limpia Creek in the eastern portion of the park. Should this occur, the management strategy for the Common Black-Hawk, outlined in Chapter 3, would change resulting in use restrictions being placed on the area occupied by the nesting pair.
- **Gray Hawk** (*Buteo nitidus*) has been recorded within Jeff Davis County on five occasions; two records (one sight record and one specimen) are from Limpia Canyon. The potential for this species nesting in the area is remote; its current status within the vicinity of DMSP is that of a transient species observed rarely during migration or post-nesting. There are only one to two pair known to nest along the Rio Grande at Big Bend National Park, the nearest nesting activity for the predominately tropical species. [2001 update: for the past two years a pair of Gray Hawks have apparently occupied a nesting territory in the old Sproul Campground on the north side of Limpia Creek directly north of FDNHS. Access to the area to confirm the presence of the nest has not been granted. The adult birds have been observed perching on the tops of igneous pinnacles on FDNHS and are almost certainly searching for prey items on the park as well as up and down Limpia Creek. The adult pair was first observed in 2000 in early May and produced one young in that year. In 2001 the adult pair was first observed in late March which is likely their normal arrival time. As of early August they were still being observed along Limpia Creek. This represents the first known nesting records for all of West Texas other than the 2-3 pair that breed along the Rio Grande in Big Bend National Park.]
- **Peregrine Falcon** (*Falco peregrinus*) has a similar status to that of the Bald Eagle except that current records are confined only to the spring and/or fall

migration periods. Historically, Peregrine Falcon nested in the Davis Mountains and in Limpia Canyon, approximately 15 miles downstream from DMSP (Pansy Espy personal communication). Currently, the only nesting falcons in the Davis Mountains are Prairie Falcon and American Kestrel.

- **Texas Horned Lizard** (*Phrynosoma cornutum*) is frequently encountered in Fort Davis and the basin flats surrounding the Davis Mountains. Since this threatened lizard occurs within one-half mile of the park it is surprising that no verified sightings exist within DMSP. The most likely location for the horned lizard within the park is in Hospital Canyon in the southeastern portion. The declining status of this species has been described by Donaldson, et al. (1994). A related species that is also listed as threatened, mountain short-horned lizard (*P. hernandesi*) occurs in the Davis Mountains but is much farther removed from DMSP. It occurs at higher elevations (normally above 5,500 feet) and occupies montane habitats in the central portions of the mountain range. It likely occurs on Blue Mountain (elevation 7,331 feet) at the head of Keesey Canyon, approximately two miles west of DMSP.
- **Big Bend blackhead snake** is a rare species that has been collected from the Texas Highway 118 right-of-way at or near the park (*fide* Mark Lockwood, 2 May 2000) and elsewhere in Jeff Davis County. The state-threatened list includes Big Bend blackhead snake (*Tantilla rubra*) but does not indicate a subspecific designation (Texas Parks and Wildlife Department, Endangered Resources Branch 1999). Dixon, Vaughn, and Wilson (2000) propose that Big Bend blackhead snake (*T. rubra cucullata*) be afforded full species status as *T. cucullata* while reserving *T. rubra* for a more southerly-ranging group of exclusively Mexican *Tantilla*. Regardless of the taxonomy, this highly nocturnal snake is rarely encountered in the Davis Mountains.

Species of special concern would include the following:

- **Ferruginous Hawk** is considered a winter resident in the Fort Davis area. Birds have been observed passing over the state and national park during migration and at other times but do not establish winter territories within either park's boundary. No special management recommendations are suggested for this species.
- **Mountain Plover** is a migrant and summer resident in basin grasslands that surround the Davis Mountains. The breeding population that existed 4 miles south of Fort Davis appears to be extirpated. As with the previous species, mountain plovers likely pass overhead during migration. No special management recommendations are suggested for this species, which is currently being considered as a candidate for threatened status.
- **Loggerhead Shrike** is a permanent resident species in the area and occupies habitat within FDNHS. The species is most vulnerable during the nesting season and nesting territories should be protected from disturbance.
- **Spotted Owl** (of the Mexican race) is represented in the Davis Mountains by a very small resident population currently located in isolated areas of forest

with adjacent vertical cliffs. However, this species is know to wander to lower elevations in winter and potentially could occupy oak-juniper woodlands adjacent to pinnacles of igneous rock found on portions of the national park.

- The exact status and taxonomy of **Eastern Cottontail** in the Davis Mountains has yet to be fully defined. Heretofore, all "Eastern" cottontails in the area were thought to be the large bodied "Robustus" form. It now appears that Robustus (recently split as a species), small bodies Easterns and Western cottontails are all sympatric within the area. Of the above, the small bodied Eastern Cottontail appears to be the rarest in occurrence.
- The **Limpia Botta's Pocket Gopher** has not been collected in the wild since the early 1970s. The exact status of the very localized population is unknown and may be extinct. It is likely that this species existed on FDNHS in the 1940s and the type specimen location is from Limpia Creek directly adjacent to and north of the national park. William B. Davis, who described the new subspecies in 1940, found the population to still be viable in 1946. However, researchers from Texas Tech University could not relocate the species at the type locality site in the early 1970s; the only populations located then were 8 miles northeast of Fort Davis above Wild Rose Pass. The species appears to have been displaced by the Yellow-faced Pocket Gopher, which is now abundant in riparian areas as well as in uplands of the state and national park.

At present only the Texas Horned Lizard appears to be a candidate for the application of critical habitat, but only if its federal status changes. Currently, it is recognized as threatened only at the state level. In summary, although a number of endangered and threatened species and species of special concern exist in the area, management considerations for their protection are few. If we can assist with any of the literature cited herein please advise.

I thank you for the opportunity to contribute to your General Management Plan and hope that the data collected from the adjacent Davis Mountains State Park have been of value in considering their management implications for your site. If you have additional questions, please do not hesitate to ask.

Sincerely,

Kelly B. Bryan

Kelly B. Bryan, Regional Resource Coordinator
Natural Resources Program, Region 1
Texas Parks and Wildlife Department

APPENDIX 5: ERRATA, PUBLIC COMMENTS, AND NPS RESPONSE

DRAFT EIS ERRATA

This section outlines errata made to the draft EIS and incorporated into the final EIS. None of the changes modify any of the alternatives. Changes were necessary to clarify management prescriptions, improve document organization, and bring EIS information in line with existing site conditions, some of which changed since the publication of the DEIS.

Purpose and Need for the Plan

Special Mandates: Historic District

"110 buildings" was changed to "over 250 buildings."

"listed on the National Register" was changed to "listed on or eligible for listing on the National Register of Historic Places."

Desired Future Conditions

The heading "Historic Fabric" was changed to "Historic Preservation."

The Proposal and Alternatives

This chapter has been split into two chapters. The first part of the chapter has been named "Chapter 2: Management Prescriptions and Resource Areas." The Second part of the chapter has been named "Chapter 3: Alternatives."

Visitor Experience and the Park Environment

The heading "Visitor Experience and the Park Environment" has been changed to "Park Resources and Visitor Use." The text under this new heading was modified to better relay the intended message about the importance of protecting resources while at the same time providing for visitor use.

Resource Opportunity Area Changes

Various public comments indicated that the Resource Opportunity Areas described in the text were somewhat unclear. Comments indicated that the text was especially unclear as to how the ROAs should fit in with the Management Prescriptions and how they would relate to each of the Alternatives. Text of the ROAs has been modified to clarify their roles. Each Alternative now has a section under "Land Use Management" where the proposed management prescriptions for all three ROAs are discussed.

Resource Opportunity Areas Map

In the Map Key, "Core Resource" was changed to "Historic Core."

Management Prescription Changes

The Draft EIS originally contained four Management Prescriptions for use at Fort Davis National Historic Site (Historic Developed, Historic Rural, Outlying Historic, and Semi-Primitive). Various comments as well as internal review of the management prescriptions indicated that the prescriptions outlined in the draft EIS were unclear and did not accurately relay the proposed management of the park. The park staff evaluated and modified each management prescription as needed to make the descriptive text match the intended purpose of the management prescription.

First, the "Outlying Historic" management prescription and the "Semi-Primitive" management prescription were combined and renamed "Undeveloped Landscape" to more accurately portray the emphasis of the management prescription. The staff felt that the two original management prescriptions

were redundant and essentially prescribed the same management strategy. The text describing the management prescription has also been modified to clearly indicate its intention and emphasis.

Second, the "Historic Developed" management prescription was renamed "Historic Interpretive / Developed" to more accurately indicate the interpretive emphasis of the management prescription. This management prescription was also expanded to cover all areas of the park where any active interpretation would take place or where the environment would be modified for interpretive purposes.

Third, the "Historic Rural" management prescription was incorporated into the new "Historic Interpretive/Developed" management prescription. The staff determined that the "Historic Rural" management prescription was essentially a watered-down version of the "Historic Interpretive/Developed" management prescription and was unnecessary.

Fourth, a new management prescription named "Outlying/Modern Development" was created to describe areas of the park where modern intrusions and developments would be allowed for maintenance and facility management. This management prescription was needed because these areas currently exist within the park and the management prescription was needed to accurately describe land use management for the No Action alternative and Alternative B.

In tandem with the changes made to the management prescriptions, the land use management maps for the four alternatives have been modified to show the changes.

Alternative Changes

All four of the original alternatives (A, B, C, and D) continue to emphasis and outline the same basic proposals as indicated in the draft EIS, but moderate changes, additions, and clarifications have been added to each alternative. Most changes consist of textual changes for clarity and ease of reading. Other changes include adding required sections which were missing from the draft EIS.

Changes Common to all Alternatives

In each of the four alternatives, an updated discussion indicating how the management prescriptions will be applied in each of the three park Resource Opportunity Areas was placed under the heading of "Land Use Management."

In each alternative, the management prescription acreage, which was previously located under "Land Use Management", has been removed. The staff felt that an accurate map showing the areas designated under each management prescription would be more informative than listing the acreage in text format.

In each alternative, the "Historic Core ROA" sub-section now contains a discussion on the proposed management of the existing maintenance yard in Hospital Canyon. A discussion of this area was not included in the Draft EIS.

In each alternative, the text under the heading of "Natural Resource Management" was moved into a section named "Resource Protection" to better reflect the emphasis of the text. The heading of "Natural Resource Management" now incorporates the existing sub-sections of "Wetland / Floodplain / Flash Flood," "Intrusive Noise," and "Air Quality." In addition, two new sub-sections entitled "Wildlife" and "Vegetation" have been added to discuss management of these resources.

In each alternative, the sub-heading of "Historic Fabric" was changed to "Historic Preservation."

To clarify the similarities and differences of the four Alternatives, paragraphs of text, which were identical or similar to paragraphs in a previous alternative, were

prefaced with indicative text (I.E. "As with Alternative A, . . .").

Changes to Alternative A

Wetlands/Floodplain/Flash Flood

The draft EIS incorrectly places wetlands within the ditch and dike system constructed by the army in the 1880s. In reality, the only wetland areas are located on the eastern edges of the park and are not within any of the constructed ditch/dike systems. In contrast to the original text, the wetlands are not disrupted by moderate to heavy flooding, but instead are rejuvenated by moderate to heavy flooding. The text in Alternative A has been modified to indicate that the "No Action Alternative" will not affect any change on the existing wetlands.

Changes to Alternative B

The title of this alternative was changed to "Alternative B – Safety, Protection, and Accessibility Compliance" to better indicate the emphasis of the alternative.

Wetlands/Floodplain/Flash Flood

The text was modified from "Wetlands located downstream . . . would continue to be disrupted during periodic moderate to heavy flooding events" to "Wetlands located downstream . . . would not be modified in this alternative." The original text states that the wetlands would be disrupted during moderate to heavy flooding events, when in reality they are rejuvenated during moderate to heavy flooding events. The text has been changed to emphasize that the proposed plan would not physically impact the wetlands.

General Emphasis

The partial restoration and refurnishing of the post hospital (dependent on private sector funding) was inadvertently left out of Alternative B in the draft EIS. It has been included here, in Table 2 – Possible Future Development Costs, and in Table 3 – Comparison of Alternatives.

Changes to Alternative C

A descriptive title has been added to the name of this Alternative. The title now reads "Alternative C—Improved Visitor Services and Resource Management (NPS Proposal)."

The two-phase concept of this proposal has been clarified and better explained. Phase 2 of this alternative now includes removing the existing maintenance yard from Hospital Canyon.

Outreach and Partnerships

This section now discusses the addition of an Education Specialist. This position was noted in Table 1 (Operational Cost Increases) of the draft EIS but was not noted in the text of the alternative.

Historic Preservation

This section now discusses the addition of a Cultural Resource Specialist and a Clerk Typist. These two positions were noted in Table 1 (Operational Cost Increases) of the draft EIS but were not noted in the text of the alternative.

Interpretation

This section now discusses the addition of 2 seasonal Park Guides. These two positions were noted in Table 1 (Operational Cost Increases) of the draft EIS but were not noted in the text of the alternative.

Changes to Alternative D

A descriptive title has been added to the name of this Alternative. The title now reads "Alternative D—Improved Visitor Services and Resource Management with Expansion and Relocation."

Outreach and Partnerships

This section now discusses the addition of an Education Specialist. This position was noted in Table 1 (Operational Cost Increases) of the draft EIS but was not noted in the text of the alternative.

Historic Preservation

This section now discusses the addition of a Cultural Resource Specialist and a Clerk Typist. These two positions were noted in Table 1 (Operational Cost Increases) of the draft EIS but were not noted in the text of the alternative.

Interpretation

This section now discusses the addition of 2 full-time and 1 part-time seasonal Park Guides. These three positions were noted in Table 1 (Operational Cost Increases) of the draft EIS but were not noted in the text of the alternative.

Wetlands/Floodplain/Flash Flood

The sentence "Periodic maintenance of the South Channel after heavy flooding events would cause some short-term wetland and vegetation disturbance" was removed in the final EIS. As noted earlier, the wetlands of the park are located downstream of the constructed dike/ditch system. Periodic maintenance of the constructed ditch/dike system would not disturb or affect the wetlands.

Table 3—Comparison of Alternatives

Each section in this table has been modified to match any changes in the text of the Alternative. Those changes will not be individually listed here. Other changes include clarifying and simplifying the table. Bulleted text which was identical to text of the previous alternative was replaced with "Same as Alternative #." This change removes much of the redundant text and allows the differences between the alternatives to be more visible and more readily identified.

Table 4: Comparison of Environmental Impacts

Table 4 was moved and placed at the end of chapter 4 (Environmental Consequences). In the draft EIS, this table had been placed behind Table 3 in Chapter 2 (Proposal and Alternatives).

Appendices

A letter from Davis Mountain State Park (Texas Parks and Wildlife) has been added to Appendix 4. This letter lists and discusses threatened and endangered species, which have been identified in the immediate area of Fort Davis.

NPS RESPONSES TO SUBSTANTIVE COMMENTS

In this section, the National Park Service has listed and responded to substantive comments received from the public about the Fort Davis General Management Plan / Draft Environmental Impact Statement.

All public comments on the draft EIS were reviewed by park staff, but only those comments which where considered to be substantive have received responses in this section. Substantive comments, as defined by the Council on Environmental Quality and the National Park Service are comments, which do one or more of the following:

- Question, with reasonable basis, the accuracy of information in the EIS.
- Question, with reasonable basis, the adequacy of environmental analysis.
- Present reasonable alternatives other than those presented in the EIS.
- Cause changes or revisions in the proposal.(NPS Director's Order #12 Handbook, 4.6(A)).

Public Comments

Substantive comments are organized in the following table (5) for convenience. The left column contains the question or comment with the person's name who submitted the comment in brackets. The right column contains the National Park Service's reply.

NPS RESPONSE TO PUBLIC COMMENTS

Public Comment	NPS Response
[Ken Fitch] Park Purpose: "The Park Purpose should include a statement about the participants in the military operations and their lives at the Fort, as this is a major theme."	Interpreting and educating the public about "the participants in the military operations and their lives at the Fort" are major themes that are addressed in the second part of the second park purpose statement found in this document. A General Management Plan is a very broad document that will and must be implemented by more detailed plans. The Comprehensive Interpretive Plan (CIP) for Fort Davis National Historic Site covers these interpretive themes. They are also covered in a number of other site-specific documents such as the Interpretive Prospectus for Fort Davis National Historic Site and the Strategic Plan for Fort Davis National Historic Site.
[Ken Fitch] Significance: "… a statement should be included that Fort Davis offers an opportunity for understanding the life of soldiers at a frontier fort, as well as the clash of military, civilian and tribal cultures that was reflected in the operations and actions here. Also conspicuously absent from the document, a[nd] certainly a point of significance, is reference to Lt. Henry Flipper, an historical figure of importance and accessibility whose life offers a key to understanding the life of a soldier at this fort."	Understanding the life of soldiers at frontier forts (including Lt. Henry Flipper) and the "clash of cultures" are themes included in significant statements 2 and 6.
[Ken Fitch] Desired Future Conditions – Archaeology: "(Add) Appropriately qualified staff persons should be assigned to monitor and manage resources."	Standard NPS regulation requires that archaeological resources be identified, documented, and monitored by individuals who meet the Secretary of the Interior's qualifications for an Archaeologist. Because this standard is inherent to the NPS, it does not need to be noted in the GMP.
[Ken Fitch] Desired Future Conditions – Interpretation: "The emphasis on 'quality and accuracy' as well as the breath of the concept here are admirable. Interpretation should also include information on the environmental conditions at this site, including flash flood situations at the Fort and the potential for impacts on current visitor experience."	Interpreting environmental conditions such as flash floods and their impacts on the visitor experience are subjects that are addressed in numbers 2, 4, and 7 of the desired future conditions under interpretation. Again, other site-specific plans address interpreting natural resource conditions.
[Ken Fitch] Desired Future Conditions – Historic Fabric: "All 'treatments' and their material components should be carefully documented.	Statement 2 has been changed to read "all treatments will be compatible with the original, based on current research and documented for future reference."
[Ken Fitch] Proposal and Alternatives – ROA – Foreground ROA: "There is a VERP [Visitor Experience and Resource Protection] issue of concern here in the designation of 'historic cottonwoods' as offering recreational opportunities."	The historic cottonwood trees at Fort Davis NHS are a significant and valued resources. Their protection and perpetuation is guided by a number of approved plans and directives including Director's Order #28: Cultural Resource Management Guidelines and an approved Historic Tree Management Plan for Fort Davis NHS. Even though a picnic area is located on the fringes of the main grove of trees, barbecue grills, vehicles, and other potential impacts that may have a negative effect are prohibited.
[Ken Fitch] Proposal and Alternatives-ROA-Foreground ROA: "Are garden sites, wood yards, pump houses, etc. located in the Foreground ROA or Historic Core?"	These resources are located in the Foreground ROA. An error incorrectly shifted two paragraphs to a different column in the Draft EIS. The error has been corrected in the final plan.
[Ken Fitch] Management Prescriptions-Historic Developed – Visitor Experience: "Conspicuously absent here is reference to the life at the Fort…. "	The paragraph that Mr. Fitch referenced has been changed to say " history and life of the fort."

NPS RESPONSE TO PUBLIC COMMENTS

Public Comment	NPS Response
[Ken Fitch] Alternatives: "'Loss of original ruins and portions of structures' and loss of historic fabric as described in Alternatives A and B, is unacceptable and would represent a failure of responsibility on the part of The National Park Service. Approval of such a proposal would also be illegal."	No matter what preservation measures are taken, loss of some historic fabric is inevitable. The NPS at Fort Davis is committed by law to prevent the loss of any and all original materials. Alternatives A, B, and D have been included in the EIS in order to provide the public with various options to compare and contrast with the NPS Proposal (Alternative B). According to the Council on Environmental Quality (CEQ) which interprets the National Environmental Policy Act of 1969, these additional alternative must be included even if they are in conflict with a law (40 CFR 1500.1 (a)).
[Ken Fitch] Alternatives: "Alternative C proposes a Phase 2 during which relocation of supportive facilities would occur, 'dependent on partnerships for private sector funding.' What are the potential or anticipated partnerships, and how would they be constructed? What agendas would partners bring to these projects? Is the relocation to leased, rented or NPS owned facilities? If the facility is private owned, what is the permanence of such a relationship?"	"Phase 2" of Alternative C has been rewritten so that it is not dependent on private sector funding. If relocation did occur it would not be to a privately owned facility. It would more than likely be (as it the case with many government facilities) a GSA facility that would be leased to the NPS.
[Ken Fitch] Alternatives: "How does Alternative C function should Phase 2 not occur?"	"Phase 1" and "Phase 2" of Alternative C function independently of one another. This section has been rewritten to more clearly show how each functions.
[Ken Fitch] Alternatives: "A focus on the history of the Fort and the lives of the military personnel who inhabited this place should be the priority [of interpretive efforts] because it is resource based…."	The interpretive programs do and will continue to focus on the lives of those who served at the post. The second part of the park purpose statement defines this, as do significant statements 2, 3, and 5. The significant statements serve as the foundation for developing interpretive themes and desirable visitor experiences. They, in turn, serve as the basis for all interpretive programs.
[Ken Fitch] Alternatives: "The overwhelming need in the future will be the continued preservation of the physical resources (historical and cultural) and the GMP should be adamant and insistent and inescapable in that focus."	It should be noted that Mr. Fitch addresses the need for preservation in several places, and that this response is directed to all of those comments. As stated above, the preservation of the historic fabric at Fort Davis NHS is the primary focus for all actions at Fort Davis NHS and will continue to be so in the future. It is a task mandated by the legislation that established Fort Davis NHS and is incorporated in the park purpose.
[Ken Fitch] Collections: "Conditions for storage and display must be 'state of the art.' Failure to fully address and remedy any deficiencies in conditions for preservation, or to permit deterioration or [sic] would be irresponsible."	Fort Davis National Historic Site is mandated by law to fully address and remedy any deficiencies in conditions and to prevent deterioration when possible. Deficiencies that currently exist do not precipitate a negative impact. Storage and display areas are rated adequate to very good.
[Ken Fitch] Natural Ecosystems-QME Flow: "While the Qme flow would be a rare event or occurrence, the importance of the resources that would be affected demands a plan, and preventative actions that would be put in place, and this potential should be addressed in the plan."	Specific issues regarding the QME are addressed in other documents, i.e. Flood Mitigation Plan.
[Ken Fitch] Natural Ecosystems – Alternatives: "…Before determining and implementing a decision (regarding Alternative D and use of the South Channel), a survey/study of archaeological resources that would be more directly by these overflows should be conducted."	The National Park Service completed "The Archeological Survey of Fort Davis" in 1986 and the "Archeological Assessment of Eight Prehistoric Sites at Fort Davis National Historic Site, Texas" in 1999. The need for further archeological resource studies in the channel areas is not considered necessary for the proposed work.
[Ken Fitch] Facilities: In this section, Mr. Fitch proposes a number of questions dealing with a variety of topics. They deal with topics such as what are the impacts of large vehicles on existing/proposed road surfaces to protection to "unprotected and exposed ruins." He asks "what is the management prescription for buildings, ruins, and sites in "poor" condition."	All of the questions Mr. Fitch asks are somewhat valid questions, but they do not fit into the scope of this document. They are addressed in more site-specific reports and documents. No management prescription is included in this document "for buildings, ruins and sites in poor" condition as federal legislation (GPRA) ensures that they be raised to good condition. A timetable for the completion of this has been established and annual goals have been set.

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