Draft

Supplemental Environmental Impact Statement

For

Amendment Of The General Management Plan

Proposed

Great Basin National Park

Visitor Learning Center

Baker, Nevada

U.S. Department of the Interior

National Park Service

Responsible Agency: U.S. Department of Interior, National Park Service, Great Basin National Park

Proposed Action/Location: Supplementing the existing General Management Plan and accompanying Environmental Impact Statement to allow and move the location of the proposed Visitor Center from Baker Ridge which is interior to the park, to Baker, Nevada which is exterior to the park.

Type of Statement: Draft Supplemental Environmental Impact Statement (DSEIS) Contact Person: Chief of Resource Management, 775/234-7331 ext. 223 or Superintendent, 775/234-7331 ext. 202.

Abstract: This Draft Supplemental Environmental Impact Statement was developed to amend the Great Basin National Park General Management Plan of 1993 and describes and discloses the environmental consequences of a proposal to construct a Visitor Learning Center on an 80-acre parcel of National Park Service (NPS) administered land in Baker, Nevada. The General Management Plan recommended building a visitor center on Baker Ridge. The action proposed will supercede the previously approved 1993 recommended action. The proposed action will directly impact archeological site 26WP2016 and indirectly impact the other three sites within the 80-acre parcel north of Baker. Compliance with Section 106 of the National Historic Preservation Act was completed for the Park's S/GMP and required archeological data recovery prior to any ground-disturbing activities at or near these sites. No other significant impacts were identified.

Alternatives including the proposed action include: 1) the no action alternative that continues the course of action contained within the General Management Plan to build the visitor center at Baker Ridge; 2) amend the General Management Plan to eliminate the Baker Ridge Visitor Center; and 3) to maintain the current Lehman Caves Visitor

Center as the only orientation facility.

Comment Due Date: Comments in writing must be postmarked 60 days after the Environment Protection Agency has published the notice of filing in the Federal Register. As soon as this date has been determined, it will be announced in the park website.

Summary

Proposed Actions: Great Basin National Park (GRBA) proposes to implement a project to construct a new Visitor Learning Center (Center) on an 80-acre parcel of land north of the town of Baker, Nevada. The Center size would be between 9,500 square feet and 11,500 square feet and might consist of one, two, but not more than three separate buildings. This is a change from the 1993 GRBA General Management Plan (GMP). The GMP calls for the development on the 80-acre site of a new administration building which would include: office space, two conference rooms, a library, a laboratory, museum and records storage, Great Basin Association (GBA) storage space, restrooms, and a visitor orientation center. The GMP called for the construction of a visitor center within the park on Baker Ridge, a new entrance road, and the infrastructure necessary to operate the facility.

Scoping: On December 1, 1999, a scoping notice was sent to all individuals on the GRBA National Environmental Policy Act (NEPA) mailing list. On December 2, 1999, a scoping notice was published in the Federal Register. On December 15, 1999, a press release was published in the Ely Daily Times. These notices informed the public that the NPS intends to prepare an Environmental Assessment (EA) or Supplemental Environmental Impact Statement (SEIS) for a proposal to construct a combination visitor center/learning center for GRBA in Baker, Nevada and that this environmental compliance process could involve amending the GMP completed in 1993. Six letters of comment were received from the external scoping process. An interdisciplinary GRBA team met on February 4, 15 and 29, 2000, and developed the list of potential issues, based upon external and internal scoping to drive the NEPA analysis.

Issues: The following are the issues developed from the information gathered through the scoping process and used to drive the NEPA analysis.

Effects on:

- **Cave and karst resources**
- **Interpretation and visitor services**
- **Park development**
- **Scenic resources**
- **Cultural resources**
- **Socioeconomics**
- **Ecosystem structure and function**
- **Sensitive plants**
- **Sensitive wildlife species**
- **Other wildlife species**
- **Soils resources**

The following issues were dropped from further analysis

\dministrative offices may be housed separately from interpretive functions

· Any new housing should be constructed in Baker rather than impact land inside the park

· Opposed to the closure of the Baker Creek Narrows road

· Will the action result in changes in stream water quantity and in stream water quality?

· Will the action result in any modification within a Research Natural Area or Protected Natural Area subzone?

· Will the action result in any effects to a wetland within or tributary to the project area or an alteration to the course or flow of floodwaters?

· Will the action result in the possibility of a river or stream being eliminated from consideration as a Wild & Scenic River?

· Will the action result in the possibility of an area being eliminated from consideration as a Wilderness Area?

· Will the action result in impacts to any species listed under the Endangered Species Act of 1973 (ESA) or result in any modification of Critical Habitat as designated?

· Effects to Baker's infrastructure

· ∠ffects of traffic and congestion on the town of Baker

There are currently no species listed under the ESA inhabiting the action areas or GRBA. In addition, GRBA has not been designated as Critical Habitat for any species listed under the ESA. It was determined by the NPS Interdisciplinary Team that these issues were either beyond the scale and scope of the proposed action, were found to be non-significant, or were covered by the existing GRBA GMP.

Alternatives: Based upon the issues, Great Basin National Park (GRBA) has developed three alternatives including the proposal to implement a project to construct a new Visitor Learning Center (Center) on an 80-acre parcel of land north of the town of Baker, Nevada. Alternative 1 is the No Action Alternative. Under this alternative the proposal to build the visitor center at Baker Ridge would remain the approved recommended course of action. Alternative 2 is the new proposed action and preferred alternative, which amends the GMP by constructing a Center in Baker, Nevada. The Baker Ridge Visitor Center would no longer be constructed as planned in the GMP. Alternative 3 amends the GMP to eliminate the Baker Ridge Visitor Center and to maintain the current Lehman Caves Visitor Center as the only orientation facility.

Environmental Consequences: Based upon the issues identified, the following environmental consequences were identified through the analysis process.

For Alternative 1:
· High potential for negative impacts to cave resources
· Potential to increase quality and quantity of visitor opportunity
· Highest potential of the three alternatives for in-park development
· eatest potential of the three alternatives to impact scenic resources
· ɾotential to impact cultural resources
· Little to no socioeconomic benefits to the local community
· High potential to impact ecosystem structure and function and impact sensitive plants located on karst geology
· Infestation of the site by exotic annual grasses and nonnative forbs likely
· Would displace resident Sensitive species and present an obstacle for movement

· Displace two to four deer days from forage loss
· Could lead to bird collisions with the windows and any suspended wires
· Erosion could be a problem with some soil loss

For Alternative 2:
· No effects to cave resources
· Greatest potential to increase quality and quantity of visitor opportunity
· Lowest potential for in-park development
· Lowest potential to impact scenic resources
· Greatest potential to impact cultural resources
· Would improve probability of socioeconomic benefits to the local community
· Low potential to impact ecosystem structure and function and impact sensitive plants
· Minor displacement of species that are prey to Sensitive species
· No displacement of mule deer or Pronghorn antelope
· Potential disturbance of, but no loss of, roost sites for owls, hawks or other birds
· Low risk of erosion impacts at this site

For Alternative 3:
· No effects to cave resources
· No potential to increase quality and quantity of visitor opportunity
· Maintains existing In-park development
· Maintains existing scenic resources impact baseline
· No potential to impact cultural resources
· Maintains existing socioeconomic benefits to the local community
· Maintains existing baseline for impacts to ecosystem structure/ sensitive plants
· No effects to wildlife
· No effects to soil resources

This alternative had the least impacts based upon no new construction. Environmental Consequences were identified.

Resource Impairment:
In addition to determining the environmental consequences of the preferred and other alternatives, NPS Management Policies (NPS, 2000b) and Director's Order-12 (Conservation Planning, Environmental Impact Analysis, and Decision-Making), require analysis of potential effects to determine if actions would impair park resources. Under Alternative 1, there is the potential for major long-term impacts to cave resources with construction of a visitor facility of the scale proposed. The No Action Alternative has the potential to result in permanent resource impairment. There is the potential for major long-term effects on park development with construction of a visitor facility and other associated infrastructure of the scale proposed. The No Action Alternative has the potential to result in permanent resource impairment by increasing development within the park, which is inconsistent with NPS management policy to limit in-park development, and by the actions to develop the necessary infrastructure. There is the potential for moderate long-term effects on scenic resources with construction of a visitor facility on Baker Ridge. The site would be readily visible from numerous backcountry locations within the Baker Creek watershed. The No Action Alternative has the potential to result in permanent resource impairment by degrading scenic resources from several areas within the park's backcountry. There is the potential for minor long-term impacts to archeological resources due to infrastructure development. Water, electricity and wastewater delivery systems would be needed. This would require several miles of underground pipelines that would need to be trenched in several feet below ground. While the Baker Ridge site was found to contain no cultural resource sites, no below ground testing and assessments have been completed for the route of underground utilities. The No Action Alternative has the potential to result in permanent resource impairment by disrupting belowground archeological deposits. There is the potential for cumulative effects to ecosystem structure and sensitive plant species. There are 42 species of nonnative herbaceous plants known to occur in GRBA. Four species are of primary concern and have been identified based on their detrimental effects to native plant and animal communities and their high potential to spread. These species are found along existing roadways and could be easily transported to the Baker Ridge site by vehicle.

Under Alternative 2, there is the potential for long-term minor effects to ecosystem structure and sensitive plants

on the Park's 80-acre administrative site. Construction activities and increased visitation (if unmanaged) can create disturbance that favor exotic plant establishment. Since evasive nonnative plants have the ability to out-compete ive plant communities and spread off site, there is the potential for permanent resource impairment without implementation of the prescribed mitigation measures. The administrative site is outside the boundaries established in 1986 as Great Basin National Park.

Under Alternative 3, there is no potential for resource impairment.

Mitigation Measures: The following measures were developed to minimize and mitigate effects where possible.

Alternative 1 - Conduct seismic investigations to determine if caves were present in the underlying substrate. Conduct geotechnical investigations to determine the bearing capacity of the substrate and to assure that construction would not impact unknown cave systems. If it is determined that cave resources might be adversely affected, the facilities would be redesigned or an alternative location would be selected. Conduct cultural resource clearance. Minimize disturbance during construction, saving and replacing topsoil to retain native seed bank and organic matter, and mulching with native material to prevent establishment of exotic plants. Intensive surveying of area and rerouting planned disturbances and construction away from populations of sensitive plants. Salvaging native plants, especially sensitive species, from construction sites and re-planting disturbed areas with only native plants. Seeding large areas, such as roadsides, with locally collected native plant seed.

Alternative 2 - Conduct cultural resource clearance. Minimize disturbance during construction, saving and replacing topsoil to retain native seed bank and organic matter, and mulching with native material to prevent establishment of exotic plants. Salvage native plants, especially from construction sites and re-plant disturbed areas with only native plants. Seed disturbed areas, such as roadsides, with native plant seed.

Alternative 3 - No mitigation measures required.

Preferred Alternative:
The National Park Service (NPS) preferred alternative is to amend the GMP to allow implementation of Alternative 2, the proposed action: Constructing a Center in Baker, Nevada because it meets the purpose and need for visitor education, and is consistent with the intent of the Park's GMP.

Environmentally Preferred Alternative:
Based upon Section 101b of NEPA, Alternatives 2 and 3 are considered environmentally preferred alternatives. These alternatives cause the least damage to the biological and physical environment. They attain the widest range of beneficial uses of the environment without degradation, risk to health and safety, or other undesirable and unintended consequences. Alternative 3 is the environmentally preferred alternative because it calls for no construction and therefore, causes the least damage to biological and physical environment. However, Alternative 2 achieves a better balance between population and resource use that will permit high standards of living and a sharing of life's amenities.

Table of Contents

List of Table/Figures/Diagrams

CHAPTER 1
INTRODUCTION: PURPOSE OF AND NEED FOR ACTION

1.0 PURPOSE

This Draft Supplemental Environmental Impact Statement (DSEIS) was developed to amend the Great Basin National Park (GRBA) General Management Plan (GMP) of 1993 and describes and discloses the environmental consequences of a proposal to construct a Visitor Learning Center (Center) on an 80-acre parcel of National Park Service (NPS) administered land in Baker, Nevada. It has been determined through the GMP for GRBA and other needs assessments that the Park would benefit from a new visitor facility and learning center. GRBA was established in 1986 from the former Lehman Caves National Monument, which included the Lehman Caves visitor center, and a portion of the Humboldt National Forest (HNF). The GMP, approved in 1993, proposed a new visitor contact station and administrative offices to be located on the Park's 80-acre administrative site in Baker, and a new visitor center to be constructed along with a new entrance road within the boundaries of the Park.

The GRBA GMP calls for intensive development on the 80-acre parcel of land in Baker. The GMP calls for the development of an administration building which would include: office space, two conference rooms, library, a laboratory, museum and records storage, Great Basin Association (GBA) storage space, restrooms, and a lobby. In

addition, the GMP called for the construction of a visitor contact station and orientation center, hiking trails and a picnic pavilion on the 80-acre parcel.

The Center proposed in this DSEIS would enable visitors to learn about the park, seek guidance about what to see and obtain information prior to entering GRBA. The Center will enable the park in partnership with universities, colleges and other educational institutions, the State of Nevada, the Desert Research Institute, HNF, Bureau of Land Management (BLM) and others, to fulfill its mission and offer the public a scientifically based understanding of the Great Basin's cultural and natural resources and allow the development of tools to manage for the long-term health and productivity of the Great Basin ecosystem.

1.1 PROPOSED ACTION

The Park is proposing to construct the Center on NPS administered land adjacent to the town of Baker. The 1993 GMP recommended building a visitor center on Baker Ridge. The action proposed in this document (Alternative 2) will supercede the previously approved 1993 recommended action.

1.2 LOCATION

GRBA is located in east central White Pine County, Nevada near the Utah border (see Fig 1). The park encompasses 77,100 acres of the Southern Snake Range. The park was established in 1986. Wheeler Peak, at 13,063-feet the center piece of GRBA, overlooks two expansive basins -Spring Valley to the west and Snake Valley to the east- but GRBA includes only 80 acres of the basin environment as an administrative site. Surrounding the park are public lands administered by the HNF and BLM.

The park is 300 miles north of Las Vegas, 250 miles southwest of Salt Lake City, and only a few miles south of U.S. Highway 50. The nearest town is Baker, about 5 miles from the current park headquarters. Some 65 miles to the ., Ely, Nevada, provides major services and a regional airport. Delta, Utah, is 90 miles to the east.

1.3 NEED FOR ACTION

The need for this action is to concentrate NPS functions in one location, provide more convenient access for the visiting public, eliminate the potential impacts to park resources by the construction of new facilities within the park, and to follow newer NPS planning guidelines that encourage the construction of NPS facilities outside of the park unit.

1.4 PROJECT OBJECTIVES

Focused on the study and preservation of the Great Basin's viable natural and cultural resources, the Center is intended to facilitate three related goals for the park and surrounding region: 1) Education and public outreach through exhibits, classes and programs; 2) Research, resource management, and preservation through field studies and laboratory projects; and, 3) Visitor information and economic stimulation through visiting tourists, guest and resident scientists, public programs, organized presentations/guest lectures, retail book and gift store.

1.5 DECISION TO BE MADE

The 1993 GRBA GMP and accompanying EIS made the decision to construct a visitor center on Baker Ridge within the park. This DSEIS is designed to amend the final GMP EIS and disclose the environmental consequences of constructing a Center in the town of Baker, Nevada. The DSEIS is concerned only with the impacts associated with the proposed action and alternatives to the proposed action. No other elements of the GRBA GMP are proposed for ... ndment at this time. Other Federal, state, and local jurisdictions have assisted in the analysis of environmental ... sequences and development of alternatives to the proposed action.

1.6 SCOPING

Scoping is an early and open process to solicit public and internal concerns relating to a proposed action. Issues are

generated from scoping comments that drive the NEPA process and determine the range of actions, alternatives and impacts to be addressed.

Fig 1 - Map of Park/Area

· On December 1, 1999, a scoping notice was sent to all individuals on the GRBA NEPA mailing list. The notice informed the public that the NPS intends to prepare an Environmental Assessment (EA) or Supplemental Environmental Impact Statement (SEIS) for a proposal to construct a combination visitor center/learning center for GRBA in Baker, Nevada and that this environmental compliance process could involve amending the GMP completed in 1993.

· On December 2, 1999, a scoping notice was published in the Federal Register. The Scoping Notice informed the public that the NPS intends to prepare an EA or SEIS for a proposal to construct a visitor center/learning center for GRBA in Baker, Nevada and that this environmental compliance process could involve amending the GMP. This new planning effort is intended to implement or refine that management direction specific to the construction of the Center. The environmental compliance document will identify, analyze, and select the management actions necessary to initiate the proposal for construction of a Center that will serve both the visiting public and educational institutions throughout the Great Basin region.

· On December 15, 1999, a press release was published in the Ely Daily Times. The press release informed the public that the NPS intends to prepare an EA or SEIS for a proposal to construct a Center for GRBA in Baker, Nevada and that this environmental compliance process could involve amending the GMP.

· Six letters of comment were received from the external scoping process.

· An interdisciplinary GRBA team met on February 4th, 15th and 29th, 2000, and developed the list of potential issues, based upon external and internal scoping to drive the NEPA analysis.

Consultation with Native Americans

On August 31, 1999, GRBA staff met with representatives of our consulting Tribes. Tribal Representatives present were from the Ely Shoshone Tribe, Kanosh Band of Southern Paiute Tribe, Confederated Tribes of the Goshute Reservation, Kaibab Paiute Tribe, and the Southern Paiute Tribe of Utah. The proposed Center was discussed at this meeting. Concerns raised by all tribal members represented were to make sure that the building not be constructed on a burial site. They recommended that in the proposed archeological data recovery process if such a site were encountered, that it not be disturbed.

On December 1, 1999, a scoping notice was sent to all consulting Tribes. The Scoping Letter informed them that the NPS intends to prepare an EA or SEIS for a proposal to construct a Visitor Learning Center for GRBA in Baker, Nevada and that this environmental compliance process could involve amending the GMP. No further responses were received.

1.7 ISSUES

The following are the major issues developed from the information gathered through the scoping process and used to drive the NEPA analysis.

1.7.1 Issue:Effects on Cave and Karst Resources

GRBA encompasses 30,000 acres of potentially cave-forming carbonate rocks. There are 31 known cave entrances in the park. These include the highest elevation caves in Nevada, the longest cave system in Nevada, and the commercially developed Lehman Caves. Many have not been explored and many more undoubtedly exist. Because of the general lack of knowledge about the location of caves in the park, all areas with the potential for underlying

solution caves are considered sensitive areas.

2 Issue: Effects on Interpretation/Visitor Services

The GMP identified that; "Two aspects of interpretation are of concern in planning for GRBA." The first was the emphasis inside the park on Lehman Caves, "although the creation of the park has greatly expanded the area's interpretive purpose and potential." Second, was the acknowledgment that, "the landforms and ecosystems within the established National Park boundary do not fully represent the physiographic theme that is central to the Great Basin story. For that reason, PL99-565 encouraged the NPS to enter into cooperative agreements with other agencies...." The proposed action allows the opportunity to expand upon the interpretative prospectus as intended with the existing GMP.

1.7.3 Issue: Effects on Park Development

In a comprehensive GMP planning process involving both the NPS and the public, three approaches were defined to ensure the long-term viability of visitor center development at GRBA. The resulting GMP called for removal of nonessential buildings and facilities from within the park, construction of new facilities on the park's 80-acre administrative site adjacent to Baker, Nevada, and construction of a new visitor center within the park on Baker Ridge. The NPS vision for GRBA includes more extensive preservation of the outstanding resources and significant geological and scenic values of the park and fewer modern buildings within the park boundary. A more appropriate balance should be developed so that nature's wonders are not overshadowed by the intrusions of modern buildings.

1.7.4 Issue: Effects on Scenic Resources

The views as one approaches the park greatly enhance experiences and are a significant park resource. The w[illegible]eveloped and unobstructed views of mountainous terrain add significantly to the feeling of scale offered in the [illegible]at Basin. Although the valley is not within the park boundary, it is critical in conveying the theme of the "Great Basin Physiographic Region" to visitors. Without the contrasting valley basins, the mountainous lands within the park can illustrate only a portion of that theme. Visual impairment as a result of industrial, commercial and/or park development could alter the desert basin and rugged mountain scene.

1.7.5 Issue: Effects on Cultural Resources

At least 67 prehistoric archeological sites and 36 historic-period archeological sites have been identified within GRBA (Teague 1990; Wells 1990, 1993; Blalack 2000). Sites range from buried habitation sites; surface artifact scatters and preserved standing structures. The dates of these sites range from the Native American Paleoindian period of 12000-9000 B.C. to the Euroamerican historic period occupations beginning in the 1850s and continuing through to the 1950s. The NPS and GRBA will give consideration to these sites in their development plans under Section 106 of the National Historic Preservation Act (NHPA). Four prehistoric sites and the Baker Ranger Station, a National Register Property, are located within the 80-acre parcel north of Baker. One of these sites, the prehistoric site 26WP2016, is located in the direct impact zone of the proposed visitor center. Archeological testing at 26WP2016 found intact buried deposits with two spatially distinct occupations dating to the Fremont and Archaic periods of prehistory. The intact deposits and the site's research potential make it significant and eligible for the National Register under criterion D (Wells 1993). The Baker Ranger Station is on the National Register of Historic Places and is being managed accordingly by NPS staff. Archeological testing at the three prehistoric sites outside the direct impact zone determined that these sites also are eligible for the Register under criterion D. Compliance with Section 106 of NHPA may be necessary on behalf of these sites in the event of additional development at the 80-acre parcel north of Baker.

1.7.6 Issue: Effects on Socioeconomics

The local community of Baker and the surrounding gateway communities depend on park visitors for a significant portion of income. A visitor survey completed in 1991 indicates that 40% of visitors to the park do not stop in Baker. A business plan for the park and surrounding community identified a new visitor center, to be sited in Baker, as a recommended action for local economic development.

1.7.7 Issue: Effects on Ecosystem Structure and Function and Sensitive Plants

Ecosystems within GRBA are largely intact functional units that provide biological, physical, scenic, and cultural outputs, such as clean water and air, native plants and animals, soil stability, and high quality viewsheds. Any proposed action that affects the biological or physical elements of the system or the way in which the elements interact, can disrupt ecosystem function and degrade the environmental values stated above. The GRBA Resource Management Plan and GMP state that "protecting threatened, endangered, and endemic species and restoring them to within their natural ranges" is a management objective. This mandate is also found in the NPS management policies of NPS-75. The Nevada Natural Heritage Program lists 22 plant species occurring in the Snake Range and surrounding valleys as rare, threatened, or sensitive. Of these species, eight have the potential to grow in the project areas covered by this document.

1.7.8 Issue: Effects on Sensitive Wildlife Species

Documented and probable Sensitive vertebrate species include 13 mammals (11 bats, 1 lagomorph and 1 shrew), 3 amphibians and 6 birds. Of these, 8 mammals (7 bats and the pygmy rabbit (Brachylagus idahoensis)) and 3 birds have been documented within 1 mile of the proposed action areas. The action areas provide foraging habitat and dispersal corridors for these species. The GRBA Resource Management Plan and GMP state that "protecting threatened, endangered, and endemic species and restoring them to within their natural ranges" is a management objective.

1.7.9 Issue: Effects on Other Wildlife Species

A total of 72 mammals are known to occur or potentially occur in the park and on the administrative site in Baker, Nevada. Two hundred and thirty eight species of birds have been seen and documented in the Snake Range and Snake Valley. A total of 28 reptiles and 8 amphibians are suspected to occur in the park. The action areas provide winter range for large ungulates and year round and seasonal habitat for birds and small mammals. Baker Ridge has prominent topographical features, which directs movement and dispersal of birds and mammals. The karst geology provides roost sites, maternity sites and hibernacula for bats.

1.7.10 Issue: Effects on Soils Resources

The condition of the soil resource is important for a wide variety of related resources. Ground disturbance and loss of vegetation affect soil stability and productivity. Soil loss from erosion increases with loss of ground cover and total area of disturbance. In addition, soil suitability for development must be assessed prior to any development activities. A systematic soil survey was completed for the main body of the park in 1992. The small 80-acre parcel of NPS lands located in Baker, NV was not included in the survey. The GRBA GMP states that all proposed development sites would have soils suitability analysis conducted prior to any development.

1.8 ISSUES DROPPED FROM ANALYSIS

The following issues developed from the scoping process were dropped from further analysis. If was determined by the NPS Interdisciplinary Team that these issues were either beyond the scale and scope of the proposed action, were found to be non-significant, or were covered by the existing GRBA GMP.

1) Administrative offices may be housed separately from interpretive functions. This issue was considered a design option and beyond the scale and scope of this DSEIS. This topic will be part of any future design processes resulting from the selected alternative.

2) Any new housing should be constructed in Baker rather than impact land inside the park. This issue was considered beyond the scale and scope of this DSEIS. Analysis is concerned with the placement/environmental consequences of a new Center. However, concern is noted and the issue is consistent with the existing GRBA GMP, which seeks to minimize any new construction that impact land inside the park.

3) Opposed to the closure of the Baker Creek Narrows road. This issue was considered beyond the scale and scope

of this DSEIS. Analysis is concerned with the placement and environmental consequences of a new Center. However, concern is noted and the issue has been addressed within the existing GRBA GMP.

4) Water: Will the action result in changes in stream water quantity and in stream water quality? The locations described in the proposed action and alternatives to the proposed action are not located within or adjacent to any live water sources. There will be no potential impacts to water quantity or water quality.

5) Unique Areas: Will the action result in any modification within a Research Natural Area or Protected Natural Area subzone? The locations described in the proposed action and alternatives to the proposed action are not located within or adjacent to any designated or proposed research natural area or protected natural area subzone. There will be no potential impacts to any designated or proposed Research Natural Area or Protected Natural Area.

6) Floodplains & Wetlands: Will the action result in any effects to a wetland within or tributary to the project area or an alteration to the course or flow of floodwaters? The locations described in the proposed action and alternatives to the proposed action are considered sites not within a flood plain. There is no potential for impacts to flood plains or that could alter the course or flow of floodwaters.

7) Wild & Scenic Rivers: Will the action result in the possibility of a river or stream being eliminated from consideration as a Wild & Scenic River? The existing GMP did not recommend or consider any stream system within the boundaries of GRBA for Wild & Scenic River status. The locations described in the proposed action and alternatives to the proposed action are not adjacent to or within any riverine systems. The proposed action and alternatives to the proposed action will not result in the possibility of a river or stream being eliminated from consideration as a Wild & Scenic River.

8) Wilderness: Will the action result in the possibility of an area being eliminated from consideration as a Wilderness Area? The current GMP did not recommend any areas for inclusion into the National Wilderness System. This possibility was deferred to a later date in conjunction with the development of a Backcountry Management plan. National Forest Wilderness Study Areas (WSA) adjacent to GRBA include the Snake-Peacock WSA. This WSA is located along the Northwest boundary and is located from 7 to 14 miles from the locations described in the proposed action and alternatives to the proposed action. The proposed action and alternatives to the proposed action are all located within the modern subzone. This subzone has been designated to accommodate the highest level of use and development in the park. Based upon the GRBA GMP zoning concept, no lands within the modern subzone would be eligible for inclusion into the National Wilderness System.

9) Threatened and Endangered Species: Will the action result in impacts to any species listed under the Endangered Species Act of 1973 (ESA) or result in any modification of Critical Habitat as designated? There are currently no species listed under the ESA inhabiting the action areas or GRBA. In addition, GRBA has not been designated as Critical Habitat for any species listed under the ESA. There are numerous U.S. Fish and Wildlife Service former Candidate species and NPS species of concerns for which the analysis of impacts has been prepared under the issue of Sensitive Wildlife Species.

10) Effects to Baker's townsite infrastructure: This issue was addressed in the existing approved FEIS/GMP, which identified and analyzed extensive development of the 80-acre administrative site. This resulted in the Federal Government building water, sewer and appurtenant systems for the town of Baker. This work was completed in 1995 and was sized to accommodate projected growth for both park purposes and private development (of the proposed site and surrounding area). The Baker General Improvement District, which manages this system, expected park development of this site, as already approved; and projected revenues from park rate payments have been factored into BGID's operational scenarios subsequent to approval of the FEIS/GMP. The Park FEIS/GMP identified and analyzed public and employee use of administrative and visitor service facilities on the site, as are still similarly proposed under this amendment. This SDEIS does identify and analyze the effects of changing the location for the Park's visitor center, which shall be designed so as to not exceed the scope and scale of Baker's infrastructure during its normal life cycle.

11) Effects of traffic and congestion on the town of Baker town site: This issue was fully addressed in the existing approved FEIS/GMP, which identified and analyzed a visitor contact and orientation center and appurtenant parking

to accommodate visitors. The number of visitors stopping at the proposed Visitor Learning Center is not anticipated to increase dramatically. Some visitors may stay somewhat longer at the site, but overall visitor capacity is not projected to be greater than considered in the FEIS/GMP. The park will still accommodate educational and tour groups, as addressed in the existing approved FEIS/GMP. The FEIS/GMP anticipated this scope and scale of visitor use and parking at the park visitor center, but at a different location. Hence, the only change in the effects of traffic and congestion is the potentially somewhat longer duration of visitor stay at the administrative site, not the number of visitors and this does not have an effect on traffic speeds or management to and from the site and to and from the town of Baker. The effects of the proposed center's additional footprint on soil, wildlife, water, etc. are addressed, as are the effects of the change on Baker socio-economics, the Baker community, etc.

CHAPTER 2

AFFECTED ENVIRONMENT

This chapter describes the affected environment within the proposed action area. This chapter deals with the conditions found based on existing management, resource conditions, and data in relation to those issues found significant from the scoping process.

Issue 1: Effects on Cave and Karst Resources

GRBA encompasses 30,000 acres of potentially cave-forming carbonate rocks. There are 28 known caves in the park. These include the highest elevation caves in Nevada, the longest cave system in Nevada, and the commercially developed Lehman Caves. There exists the potential of finding unknown cave entrances. The caves in the park formed slowly as slightly acidic groundwater dissolved underground passageways, largely along the water table. Caves are rarely isolated features. Nearby there are often other caves, many of which have no entrance or surface indication of their location. One place of cave concentrations is the Baker Creek Cave System near the Grey Cliffs area along Baker Creek. This area is less than ¼ mile from the Baker Ridge site. It contains the longest cave system in Nevada. Upper and Lower Pictograph Cave, while filled by sediments, potentially extend in a northern direction towards Baker Ridge. Mapping of Model and Ice caves also show that they extend in a northern direction towards Baker Ridge.

Karst topography is surface expression of underground solution. It is typified by caves, sinkholes, and sinking streams. GRBA does not contain well-developed karst. The main reason for this is probably the lack of significant precipitation. However, the park does contain streams that are at least partially pirated by subterranean passages (e.g., Snake Creek, South Fork Big Wash, and Baker Creek).

Issue 2: Effects on Interpretation and Visitors Services

The GMP identified ways to increase public understanding and appreciation of all Great Basin's resource values within the context of its larger geographic setting. It also included proposals for interpreting GRBA in areas administered by other agencies and for initiating a cooperative interagency interpretive plan for the region's many and varied resources.

Interpretive media prescriptions were proposed in an Interpretive Prospectus and a Wayside Exhibit Plan, which were both approved in 1994. While these plans have provided a general overview of media, interpretive themes, goals and objectives, and basic visitor experience goals, follow-up detailed plans were not funded until recently, nor media produced. The park's Long Range Interpretive Plan will be completed in 2002.

The existing interpretive operation consists of:

· The visitor center, located in the headquarters building, is open daily except for three holidays. There are exhibits dating from a 1988 plan, a rehabilitated Great Basin exhibit (installed in 2000), and temporary exhibits and bulletin

boards supplement the 1988 exhibits. A multipurpose room adjacent to the visitor center serves as a theater and meeting assembly room. Two audiovisual programs, a film on Lehman caves and a sound slide show (June 1988) presented upon request, or scheduled for school and group visits. Another adjacent room serves as a reference library and office to park interpretive staff. A 1997 addition to the building expanded the interpretive staff workroom and office space. Recreational fee activities in the visitor center include cave tour ticket sales.

· Permanent and seasonal interpretive staff and volunteers sell cave tour tickets, lead guided-walks through Lehman Caves, conduct limited off-site programs upon request from schools and other agencies, staff the information desk year round, and respond to information requests. In the summer season interpreters also give patio talks, present evening campfire programs at Upper Lehman and Wheeler Peak campgrounds, lead hikes to the Bristlecone pine grove accessible from the Wheeler Peak scenic Drive, provide roving interpretation on trails, conduct hikes, and present children's programs.

· The Great Basin Association (GBA) supports interpretation by printing the Bristlecone park newspaper, assisting with information desk coverage, providing appropriate background materials from sales inventories to new employees, scheduling educational speakers, cultural demonstrators and traveling exhibits, printing subject matter pamphlets on various resources and interpretive themes, and selling books and educational items to visitors.

· In the late 1980's through 1998 and 2001, the park and GBA hosted a teacher's workshop. The handouts for the workshop were proposed for a resource activity guide for use in the classroom or on-site. The park has also developed a Junior Ranger Program as well.

Issue 3: Effects on Park Development

The GMP was crafted to preserve the natural resources that make GRBA a special part of the NPS system. It was also formulated to enhance the experience of people who visit the Great Basin region.

Seven years later, few facility development goals of the GMP have been fully realized. Visitors to the park are still served by facilities that existed prior to the establishment of the park. Visitation has grown to over 90,000 per year, almost triple the pre-park visitation for Lehman Caves National Monument. Infrastructure problems with existing facilities are likely to become worse with time and more difficult to solve.

New NPS policies strongly discourage new development within parks. The 2001 NPS Management Policies state:

Section 9.1, Park Facilities, General: "...the Service will not develop, or re-develop, a facility within a park until a determination has been made that the facility is necessary and appropriate, and that it would not be practicable for the facility to be developed, or the service provided, outside the park. "

Section 9.1.1.5, Park Facilities, Facility Siting: "Whenever feasible and authorized by Congress, major park facilities---especially those that can be shared with other entities---should be developed outside of park boundaries. ...Where possible, appropriate, and authorized, the Park Service will cooperatively establish and maintain administration/information facilities with other federal, state, or local entities."

Section 9.3.1.3, Park Facilities, Visitor Centers: "where an in-park location would create unacceptable environmental impacts, authorization should be obtained to place a visitor center outside the park."

Most facilities in the park predate its establishment and were previously part of Lehman Caves National Monument or HNF. The Lehman Caves developed area includes a 4,000 square foot facility that provides interpretive media; ticket sales and staging for cave tours, book sales, and space for most of the park's administrative and management functions. Adjoining the structure is a 1,000 square foot concession facility that provides food service and souvenir sales on a seasonal basis. Located near the existing visitor facility are eight employee houses, two cabins, and three trailers. Next to the housing are the park's maintenance, resource management and law enforcement area that consists of two buildings, a small fire cache and two trailers that have been temporarily set up for office space.

Issue 4: Effects on Scenic Resources

The Lehman Caves visitor center is located fairly well to fit within the existing landscape and is unobtrusive in perspectives from the valleys. Both mountainous views and valley bottoms are currently unobstructed by park developments from this site. The undeveloped and unobstructed views of mountainous terrain add significantly to the feeling of scale offered in the Great Basin.

Issue 5: Effects on Cultural Resources

Four prehistoric archeological sites have been identified within the stabilized sand dunes of the 80-acre parcel north of Baker. Another large prehistoric village site lies a mile northeast of the parcel on BLM property (Teague 1990; Wells 1990, 1993). The four NPS sites, numbered 26WP2015, 26WP2016, 26WP2017, and 26WP2018, all include surface artifact scatters and intact subsurface remains.

Archeological testing found subsurface hearths at two of the NPS sites and it is very possible subsurface features exist at the other sites as well (Wells 1993). See Wells (1993:chapters 2-10) for detailed descriptions of these sites, the test excavations, and the results of artifact and sample analyses. These sites were found eligible for the National Register of Historic Places under Criterion D (Wells 1993). Therefore, these sites are afforded some measure of protection, and impacts from the proposed construction and development and will have to comply with Section 106 of the National Historic Preservation Act.

Only one site, 236WP2016, lies within the direct impact zone of the proposed visitor center. The site has the most deeply buried deposits of the four sites studied, with ground stone, debitage and bone found 30-40 cm below the modern ground surface. This site appears to have two spatially separate temporal components. Artifacts include ground stone, debitage, bone, decorated ceramics, projectile points, bifaces and a notched crystal. Obsidian hydration analysis revealed the obsidian at this site came from four different sources (Wells 1993:128). Prior to construction of the visitor center at this location archeological data recovery, that is excavation, needs to be conducted following the recommendations in Wells' 1993 report.

Both direct and indirect impact to the other archeological sites needs to be considered as plans develop for the 80-acre parcel north of Baker. Plans must also consider the wood frame buildings of the Baker Ranger Station, which are on the National Register of Historic Places.

Issue 6: Effects on Socioeconomics

The communities of Baker and Ely in Nevada, and Delta in Utah, all draw some of their income from park visitation. Communities of Austin and Eureka, Nevada, also situated on the Highway 50 and 6 corridors, believe as well that they derive some of their income from traffic heading to or from the park.

The businesses located in Baker include a motel, gift store, a welding and mechanic shop, two restaurants, three bars, a post office, and a second hand store. All but one bar and the mechanic shop are located south of the junction where the major access road off Highway 50 and 6 intersects the park entrance road. A visitor survey completed in 1991 indicates that 40% of visitors to the park do not stop in Baker; they turn directly up the entrance road to the park. To improve this situation, the local community has published brochures on their businesses and, with the park, has placed a kiosk at the road junction to inform visitors about local businesses and regional recreation opportunities. Nevertheless, the local community still believes it misses a large amount of the park traffic.

The communities of Ely and Baker, Nevada, joined with Delta and Fillmore, Utah, in a Great Basin Heritage Area Partnership to conserve and interpret natural and cultural heritage and improve their economies. This Partnership supports the park's visitor center being located in Baker. The Border Inn, a Baker business located on the Utah-Nevada state line, also strongly supports the Partnership and the visitor center in Baker.

Three businesses located south of Baker are a general store and craft shop in Garrison, Utah, and a guest ranch east of the park boundary in Big Wash. A visitor center located in Baker could improve the income of these businesses by providing visitors with an early orientation to the park and the availability of cave tour tickets before they have already traveled five miles into the park to the Lehman Cave visitor center. It is expected that some of these visitors will choose to visit park destinations such as Snake Creek, Big Wash, Lexington Arch, Big Springs Wash, and other

locations south of Baker.

Issue 7: Effects on Ecosystem Structure/ Function and Sensitive Plants

Sites potentially affected by the alternatives presented contain important structural components of the South Snake Range ecosystem. A mix of native and exotic plant species currently occupies both the Baker Ridge site and the Baker town site. The native component of these plant communities generally contributes to the maintenance of favorable hydrologic function (water infiltration, evapotranspiration, etc.), fire frequency and intensity regimes, and soil stabilization qualities. In general, sites occupied by a preponderance of exotic species, for example cheatgrass and spotted knapweed, suffer compromised hydrologic integrity, unfavorable fire regimes, and decreased soil holding capacity.

Sensitive Plants

Due to the large topographic relief and the isolated geographic position of the Snake Range, plant diversity and endemism are especially high in and around GRBA. Twenty-two species of rare and/or sensitive species occur in or near the park. Sixteen of these species are currently listed by the Nevada Natural Heritage Program (NNHP), which maintains a database of the location, abundance, and status of all sensitive taxa in Nevada. Other groups and agencies that list sensitive or special status plant species in Great Basin region are the Northern Nevada Native Plant Society (NNNPS), U.S. Fish and Wildlife Service (USFWS), USDA Forest Service, and the BLM. No federally listed threatened or endangered plants are known to occur in the area.

The following sensitive species potentially occur on the Baker Ridge or Baker (Hwy. 487) project sites:

Tunnel Springs beardtongue (Penstemon concinnus)

Rare and local native species. In Nevada, occurs only in a few ranges, including the Snake Range. Listed in Table 1 of the GMP as a sensitive species; region 4 USDA Forest Service sensitive species; USFWS species of concern; designated a Nevada Special Status Species by the BLM; on the NNNPS watch-list; listed (G3S2) by NNHP. Presence in park confirmed. Gravelly, mid-elevation alluvial slopes with sagebrush and pinyon-juniper. Threats include sheep grazing, development, and competition from exotic plants, e.g. cheat grass, spotted knapweed.

Pennell's beardtongue (Penstemon leiophyllus var. francisci-pennellii)

Rare native plant, subspecies francisci-pennellii occurring primarily in west-central Nevada. Listed in Table 1 of the GMP as a sensitive species; on the NNNPS watch-list; listed (G3S2) by the NNHP. Presence in the park confirmed. Occurs in dry, rocky alpine and subalpine slopes, alpine meadows, and associated with middle and upper elevation aspen stands. Some location and abundance data exist for GRBA, but the sub-specific taxonomy of GRBA herbarium specimens is questionable. Threatened by livestock grazing and the decline of aspen stands parkwide. Synonymous with P. francisci-pennellii.

Pennell's whitlowgrass (Draba pennellii)

Rare, local native species. Endemic to White Pine County, Nevada, specifically the Schell Creek Range. Listed as a region 4 USDA Forest Service sensitive species; de-listed by the NNNPS; listed (G2S2) by NNHP. Presence in the park unconfirmed, but possible. Cracks, crevices, rocky slopes and ledges, possibly associated with limestone, over a wide elevational range.

Great Basin Fishhook Cactus (Sclerocactus pubispinus)

Globally secure native species. In Nevada, limited to Baker area in White Pine County. Protected as a cactus in Nevada. Presence in park unconfirmed, but occurs in lower elevations below park boundary. Rocky flats and hillsides with Atriplex, Artemesia, and pinyon-juniper, generally below 7000 feet. Potential threats include livestock grazing, development, and illegal harvest by cactus merchants.

Intermountain wavewing (Cymopterus basalticus)

Rare and local native species. Endemic to western Utah and White Pine County areas. Listed in Table 1 of the GMP as a sensitive species; on the NNNPS watch-list; listed (G2G3S1) by NNHP. Presence in the park unconfirmed, but possible (confirmed in the Sacramento Pass area). Low and mid-elevation sagebrush and pinyon-juniper communities. No information on the status, location, demography or ecology of this species exists for GRBA. Potential threats include sheep grazing and development (construction, road improvements).

Watson's goldenbush (Ericameria watsonii)

Globally secure native species occurring in region, but relatively rare in west central Nevada. De-listed by the NNNPS; on the NNHP watch-list. Presence in the park confirmed. Cliffs, rock outcrops, generally dry sites across a wide elevational range. Some location data exist for GRBA. Potential threats include livestock grazing. Synonymous with Haplopappus watsonii.

Rayless tansy-aster (Machaerantha grindelioides var. depressa)

Globally secure native intermountain species, variety depressa relatively rare in Nevada. De-listed by the NNNPS; on the NNHP watch-list. Presence in the South Snake Range confirmed. Occurs on dry alkaline soils and with pinyon-juniper at middle elevations. Potential threats include livestock grazing, development (construction, road improvements) and encroachment of non-native plants into pinyon-juniper communities. Synonymous with Haplopappus nutallii var. depressus. Meadow milkvetch (Astragalus diversifolius) Highly localized intermountain species, uncommon in Nevada. Listed (G2G3S1) by NNHP; Region 4 USDA Forest Service sensitive species; on the NNNPS watch-list. Presence in the park unconfirmed, but possible. The Spring Valley (White Pine County) population represents a disjunct portion of the species range. Alkaline sedge meadows, swales in sagebrush valleys, roadside ditches, 4400-6200 feet. Potential threats to this species include livestock grazing, and development of valley bottoms.

Broad-pod freckled milkvetch (Astragalus lentiginosus var. latus)

Globally secure species; variety latus is rare and local. Listed (G5T1S1) by NNHP; on the NNNPS watch-list. Presence in the park unconfirmed, but possible. Gravelly slopes of the timber belt, calcareous soils of conifer stands, 7400-9400 feet. Potential threats include livestock grazing and development.

Issue 8: Effects on Sensitive Wildlife Species

Baker Ridge contains upland Pinyon and Juniper woodland situated between Lehman Creek and Baker Creek. The ridge contains northerly and southerly exposed slopes. Vegetation is primarily Pinyon and Juniper with lesser understory components of little-leaf mountain mahogany, cliff rose, sagebrush and various bunchgrasses. The Merriam's shrew, a NPS special status or sensitive species, is a likely inhabitant of Baker Ridge but its presence has not been documented. Dense stands of sagebrush provide habitat for pygmy rabbits.

The geology of the area is predisposed for caves and rock crevices providing excellent habitat for bats. Several sensitive bats species have been documented in cave and rock crevices within one mile of the proposed action area including the spotted bat (Euderma maculatum) long-eared myotis (Myotis evotis evotis), long-legged myotis (M. volans interior) and Townsend's big-eared bat (Corynorhinus townsendii pallescens), all NPS special status or sensitive species. The fringed myotis (M. thysanodes thysanodes), listed as a Federal species of concern, are also likely to inhabit the area but have not been documented.

The Baker Administrative site consists of highly disturbed sagebrush and greasewood desert shrub vegetative community. The site supports numerous small mammals, the most visible being the antelope ground squirrel. These squirrels are a primary forage source for NPS special status or sensitive species of raptors. Ferruginous and Swainson's Hawks have been seen foraging in the fields and desert shrub nearby. The southern portion of the site contains trees surrounding several buildings, which likely serve as roosts for bats, owls, hawks and other birds. Irrigated alfalfa and grain fields and several reservoirs are within ½ mile of the Baker Administrative site where

several sensitive migratory shorebird species have been sighted.

ue 9: Effects on Other Wildlife Species

Baker Ridge provides the topographical exposure and plants typical of mule deer winter range and fall/spring transition range. Both little-leaf mountain mahogany and cliff rose exhibit signs of extensive browsing. Helicopter mule deer survey data from Nevada Division of Wildlife indicate that over 50 percent of total deer counts obtained on the east side of the south Snake Range occur between, and include, Kious Basin and Baker Ridge. The topography of Baker Ridge also acts to direct movement of wildlife along Baker Creek and the top of Baker Ridge. The Baker Administrative site supports small mammals including Kit foxes, black-tailed jackrabbits, antelope ground squirrels, Kangaroo rats and mice. These small mammals provide forage for predators, raptors, owls and various snakes. Pronghorn antelope utilize this area.

Issue 10: Effects on Soils Resources

Baker Ridge Soils of the Baker Ridge site are within the Logring-Hopeka-Rock outcrop association, which are lithic xeric torriorthents considered to be shallow, well drained and nonsaline. Vegetation consists of Bluebunch wheatgrass, bluegrass, bottlebrush squirreltail, Indian ricegrass, needle and thread grass, blue grama, Scribner needlegrass, muttongrass, eriogonum, black sagebrush, snowberry, curlleaf mountian mahogany, Stansbury cliffrose, little leaf mountain mahogany, Nevada greasebush, mountain big sagebrush, mountain snowberry, single leaf pinyon, Utah juniper. Surface expression on geologic map is Quaternary alluvium, generally unconsolidated sands and gravels deposited within modern drainage systems.

Soil textures range from very gravelly loam, 3-13" very gravelly loam, very gravelly fine sandy loam, 13" and exposed unweathered bedrock. Clay 8-25 percent, organic matter 1-2 percent. Hydrologic group D with no flooding potential. High water table deeper than 6 feet. Unweathered bedrock depth 4-14 inches, hard. Potential frost action derate. There is a high risk of corrosion for uncoated steel and a low risk of corrosion for concrete.

Site use	**Limitations**
Shallow excavations	Slight
Dwellings w/o basements	Slight: shrink-swell
Dwellings with basements	Slight: shrink-swell
Small commercial buildings	Slight: shrink-swell
Local roads and streets	Moderate: Frost Action
Lawn and landscape	Slight

Baker Town Site

The site is on the lower piedmont/fan apron of the South Snake Range eastern alluvial fan. Surface is a very heterogeneous complex of sand, silt loam, and very cobbly to extremely cobbly areas. Small-scale surface landforms consist of dune structures, alluvial flats, and shallow arroyos on an east-facing 2-4% slope. Vegetation consists of native sage-steppe grasslands, with a minor component of cheatgrass. Dominant vegetation includes *Artemesia tridentata, Oryzopsis hymenoides, Sporobolus cryptandrus.*

The soil has tentatively been classified as a fine-loamy, mixed, calcareous, mesic, xeric torriorthent.

Horizon	Depth (in.)	Texture	pH	
A1	0-5 (0-15)	Sand	8.4	aeolian origin (loess), variable depth
Bw	4-9	Sandy Loam	>9.0	cambic, some redox concentration

C1	9-13	Sandy Loam	>9.0	redox concentration
Ab	13-14	Sandy Loam	>9.0	dark, organic - buried A horizon?
C2	14-24	Sandy Loam	>9.0	redox concentration
	>24	Loam	6.8	cobbly ash layer, discontinuous

Soil is well drained, with water table probably well below plant rooting zone. The matrix of relict oxidized concentrations in the C-horizon suggest a higher, possibly fluctuation water table in the past. The erosion potential is generally low, except for exposed or disturbed dune sands that could be windblown. The soil has the potential for rare flooding in the drainage channels during high-intensity storms. The soil is structurally stable with moderate clay content, making it unlikely to shrink or swell severely. The high pH of the soil could affect concrete and metal pipe deterioration.

Because a soil survey has not been completed for the Snake Valley, the soil series has not been named, nor have the limitations of the soil been fully examined. Natural Resource Conservation Service Soil Scientist Paul Blackburn, has identified a similar soil from Lincoln County that can be used as a guide to the soil's limitations on building sites. Because these estimates of soil limitation are for the Chuffa series, and not for a series identified locally from the Snake Valley, they should be viewed as general guidelines only. The most similar named soil series identified is the Chuffa association. From the Lincoln County Soil Survey, building site limitations on Chuffa association soil are as follows:

Site use	**Limitations**
Shallow excavations	Slight
Dwellings w/o basements	Moderate: shrink-swell
Dwellings with basements	Moderate: shrink-swell
Small commercial buildings	Moderate: shrink-swell
Local roads and streets	Severe: low strength
Lawn and landscape	Slight

CHAPTER 3

ALTERNATIVES

Alternatives 1 and 2 have the concept of activity zones in common. The following describes the various operations to occur in each of three different activity zones. The following activity zones have been defined:

PUBLIC ACTIVITY: Those areas where visitors would have uninterrupted access during open hours.

SEMI-PUBLIC ACTIVITY: Those areas where visitors would have uninterrupted access during open hours except when scheduled events preclude public access.

PRIVATE ACTIVITY: Those areas closed to visitors' access.

3.1 ALTERNATIVE 1.

No Action, Implement GMP Under the GRBA GMP, the new Visitor Center would be constructed on Baker Ridge with direct access from and to the Wheeler Peak Scenic Drive (see Fig 2). This location is approximately 2.0 miles southeast from the current Visitor center along Baker Creek Road. Approximate size of the facility would be 5,000-sq. ft. Diagram 1 shows the approximate location for the building or buildings footprint. The center would include:

BAKER RIDGE VISITOR CENTER

PUBLIC ACTIVITY:
50-vehicle paved parking area, information desk, lobby, entry court, a 75-seat auditorium, exhibit space, large viewing deck, cooperating association sales and public restrooms.

PRIVATE ACTIVITY:
Superintendent and interpretive offices and workspace.

VISITOR ORIENTATION CENTER

The GMP identifies the location for the Orientation Center on the Baker 80-acre administrative site. The Center would serve as a trip-planning center.

PUBLIC ACTIVITY:
Would include: a room where park rangers would provide information and orientation, orientation graphics, publication sales, and a park bulletin board. The center would also include restrooms, a picnic area, and a covered porch where visitors could obtain drinking water and plan their trips.

ADMINSTRATIVE FACILITY

The GMP also identifies the administrative site as the location for the park's administrative facility.

PRIVATE ACTIVITY: The new administrative facilities would include office space for the administrative staff, division chiefs, protection and resource management personnel, two conference rooms, a library, a laboratory, curatorial and records storage as well as other administrative storage, GBA storage space, restrooms, and a lobby.

INTERPRETIVE PERSPECTIVE

The GMP identified that "Two aspects of interpretation are of concern in planning for Great Basin." The first was the emphasis inside the park on Lehman Caves, "although the creation of the park has greatly expanded the area's interpretive purpose and potential." Second, was the acknowledgement that, "the landforms and ecosystems within the established national park boundary do not fully represent the physiographic theme that is central to the Great Basin story. For that reason, PL99-565 encouraged the Park Service "to enter into cooperative agreements with other agencies to interpret the Great Basin ".

The GMP states that,

"Opportunities to experience representative portions of the Great Basin would increase under the proposed action, and interpretation would be expanded. Major facilities to support interpretation would include, the new Great Basin Visitor Center on Baker Ridge, and the rehabilitated Lehman Caves interpretive center, which would focus on cave interpretation.... and a new park orientation center would be built on an 80-acre administrative site new the town of Baker." In the proposed action, "The Baker orientation center would serve as a trip-planning center, providing more detailed information about the park as well as basic information about the Great Basin region. Designed for both staffed and unstaffed operation....

"The orientation center would include a 100-square foot room with service window where rangers would provide information and orientation; information on campground status would be available; and campground permits might be issued. Orientation graphics, limited publication sales focusing on park orientation, self-service pamphlet dispensers, and a park bulletin board would be incorporated into the facility so that it could function without a staff during the off-season. The center would also include a 400-square-foot restroom facility and a covered porch where visitors could obtain drinking water and plan their trips."

"Interpretive brochures and pamphlets describing recreational opportunities in the region would be stored in the service room. Windows and skylights would provide natural lighting. Water would also be provided near the parking area for visitors who planned to camp where potable was unavailable."

"The average length of stay at the orientation center would be about 15 minutes - just long enough to get information about the park and the Great Basin region, to plan a stay, and to obtain a camping permit if desired.

" The GMP further described interpretative development at the Baker Ridge visitor center as follows:

"Great Basin Visitor Center.... The entry court would include interpretive panels identifying significant peaks and landforms visible to the west.

The lobby area of the visitor center would provide information, orientation, and trip-planning services to permit visitors to familiarize themselves about the park and region. However, the primary attraction in the center would be a film that would accomplish the following:

· Provide a basic understanding of the Great Basin physiographic region and the park's significance as part of this landform.

· Convey the message that the park is a mountain island in a desert sea (island biogeography).

· Illustrate the responses of humans, plants, and animals to the stresses of this harsh environment.

· Show visitors how their own actions may be contributing to global warming and how the park serves as an indicator of this trend."

· "The film would be presented in the 75-seat auditorium, and its message would be complimented by providing in-depth treatment of selected aspects of the Great Basin story in the nearby exhibit area."

The following subjects would be the focus of interpretation:

Natural history
Life zones and major habitats
Island biogeography
Climatic change
Glacial geology
Bristlecone pines
Threatened species
Topographical points of interest

Cultural history
Native Americans in the Great Basin (past and present)
Frontier settlement
Ranching and agriculture
Mining (past and present)

· "The final interpretive experience at the visitor center would take place on the outdoor viewing deck, where visitors would be able to immediately associate the subjects in the Great Basin film and exhibits with the magnificent panorama of Snake valley and the distant basins and ranges. Part of the deck area would be shaded, and outdoor space for exhibit panels and programs would be provided. A path would connect the viewing deck with the entry court so that visitors could return to the parking area without passing through the visitor center."

· "A picnic area and a trailhead would be developed near the southwest end of the visitor center parking lot. The trailhead would provide access to an extensive system of hiking and horseback trails at lower elevations in the Baker Creek and Kious Basin areas. An interpretive trail guide dispenser would be installed at the trailhead. Equestrian access to the trail system would be provided near the Grey Cliffs campground."

3.2 ALTERNATIVE 2.

Proposed Action, Baker Visitor Learning Center Under this alternative the Center would be constructed west of Highway 487 on the 80-acre administrative site in Baker (see Fig.3). Approximate size of the structure would be ween 9,500 sq. ft. and 11,500 sq. ft and might consist of no more than three buildings. The Center has been programmed to provide a number of various activities throughout the year including visitor programs, research and resource management. The building will be arranged according to the following Activity Zones concept. This organization will allow for public exhibits and tours to occur simultaneously with community workshops and laboratory research. This location allows the Center to orient visitors not only to GRBA but also distribute information regarding other areas with recreational opportunities. Cultural and natural resources representative of the Great Basin in the Mt. Moriah Wilderness and other public lands of the HNF, BLM in the Snake and Spring Valleys surrounding the park would also be emphasized. Diagram 2 shows the approximate location for the building or buildings footprint. The following outline identifies the various operations to occur in each of the different activity zones as defined above.

PUBLIC ACTIVITY:
The Public Activity Zones will include the Lobby and Exhibit. In addition, Restroom Facilities, Gift shop/Bookstore will also be considered part of this Public Activity Zone and will therefore have a clear connection within the Center to allow for convenient access. The lobby will house a large reception desk with literature, maps and activity guides relative to the Baker and Great Basin area. Park Rangers will staff the information desk and direct visitors to the Center facility, GRBA and other scenic viewpoints and resources beyond. The Exhibit Space, which will occupy one of the largest areas of the Center, will accommodate a variety of different types of audio-visual and demonstration/display exhibits. The structure will also have a large deck with views of Fig 3 - Map of Alt 2 Diagram 2 the park. A picnic area and interpretive natural trail will be constructed. A small gift shop and bookstore for the GBA will be provided.

SEMI-PUBLIC ACTIVITY:
The Semi-Public Activity Zones include classroom/meeting room, research library and an auditorium. These spaces share a common theme of education that will be directed more toward the extended stay visitor, education programs and the residential community of Baker. The classroom could be designed in a flexible manner to allow it to function as smaller rooms to accommodate more user groups or one larger room to accommodate one user group. The library will provide a place of reference for cataloging pertinent information relative to GRBA. Intended for the visitors as well as the scientists and researchers, the auditorium will be a modest space with movable seating and a projection / storage room at one end to accommodate guest lectures and presentations.

PRIVATE ACTIVITY:
The Private Activity Zones include administrative park offices as well as the research laboratories, locker/shower rooms, private restrooms, and museum collection. Museum collections will need to be equipped with built in shelving, locking cabinets, racks and hangers for artifacts in accordance with NPS museum Management Guidelines. Individual offices will be of a simple modular size large enough to accommodate a desk and chair and minimum file storage with an open office and work area. Laboratory will permit both a biology lab (wet) and a geology lab (dry). As with the other activity zones the Private Activity spaces will be clearly linked providing for more efficient building operations.

INTERPRETIVE PERSPECTIVE
The interpretive perspective would be similar to that discussed under Alternative 1 but would provide more opportunity for expanded interpretation of the Great Basin region and interagency participation in the operation of the facility. 3.3

ALTERNATIVE 3. Amend the GMP to maintain Lehman Caves Visitor Center as the only visitor services.

Under this alternative, GRBA would amend the GMP to eliminate the proposed Baker Ridge Visitor Center and ake do with the current Visitor Center at the Lehman Caves entrance area. The Learning Center would not be constructed. The current Visitor Center has been programmed to provide visitor programs only. The current Visitor Center predates the park's establishment and was constructed as part of Lehman Caves National Monument. The Lehman Caves developed area includes a 4,000 square foot facility that provides interpretive media; ticket sales and staging for cave tours, book sales, and space for most of the park's administrative functions. Adjoining the structure is a 1,000 square foot concession facility that provides food service and souvenir sales on a seasonal basis. This

location would continue the current emphasis on Lehman Cave tours and directing visitors to the Wheeler Peak area of the park. Efforts would be made orient visitors to recreation opportunities of the Great Basin in the Mt. Moriah Wilderness and other public lands of the HNF, BLM in the Snake and Spring Valleys. Visitors will have committed themselves to the parks most heavily used area by driving five miles away from roads that access these opportunities.

Environmentally Preferred Alternative:
Based upon Section 101b of NEPA, Alternative 2 and 3 are considered the environmentally preferred alternatives. These alternatives cause the least damage to the biological and physical environment. They fulfill the responsibilities of each generation as trustees of the environment for succeeding generations. They ensure for all Americans a safe, healthful, productive and esthetically pleasing surroundings. They attain the widest range of beneficial uses of the environment without degradation, risk to health and safety, or other undesirable and unintended consequences. In addition, they achieve a balance between population and resource use that will permit high standards of living and a sharing of life's amenities.

Table 1. Comparison of Effects by Alternative

	Alt. 1 No Action	Alternative 2 Proposed Action	Alternative 3 Maintain current VC as only structure
Issue 1 Cave Resources	High potential for negative impacts to cave resource.	No Effects	Maintains existing baseline
Issue 2 Visitors Services	Potential to increase quality and quantity of visitor opportunity	Greatest potential to increase quality and quantity of visitor opportunity	No potential to increase quality and quantity of visitor opportunity
Issue 3 Park Development	Highest potential for in-park development.	Lowest potential forIn-park development.	Maintains existing In-park development.
Issue 4 Scenic Resources	Greatest potential to impact scenic resources.	Lowest potential to impact scenic resources.	Maintains existing scenic resources impact baseline
Issue 5 Cultural Resources	Potential to impact cultural resources	Greatest potential to impact cultural resources	No potential to impact cultural resources.
Issue 6Socioeconomics	Little to no socioeconomic benefits to the local community	Would improve probability of socioeconomic benefits to the local community	Maintains existing socioeconomic benefits to the local community
Issue 7Ecosystem Structure/ Sensitive Plants	High potential to impact ecosystem structure and function and impact sensitive plants located on karst geology. Infestation of the site by exotic annual grasses and nonnative forbs likely.	Low potential to impact ecosystem structure and function and impact sensitive plants. Infestation of the site by exotic annual grasses and nonnative forbs likely.	Maintains existing baseline for impacts to ecosystem structure/ sensitive plants
Issue 8Sensitive Wildlife Species	A visitor center on Baker Ridge would both displace resident Sensitive species and present an obstacle for movement of Sensitive species.	Displacement of species that are prey to Sensitive species.This loss would lead to small mammal population declines of less than five percent.	Maintains existing baseline.
Issue 9 Other Wildlife Species	Displace two to four deer days from forage loss. Disturbance and habituation to human activity. Disrupt wildlife movement. Could lead to bird collisions with	Development here is not expected to displace mule deer or Pronghorn antelope. Small mammals were discussed under Sensitive species. Potential	Maintains existing baseline.

	the windows and any suspended wires. Potential to increase mortality.	disturbance of but no loss of roost sites for owls, hawks or other birds.	
Issue 10 Soils Resources	Water erosion may be a problem. Some soil loss. Flooding is not a problem. Site has been classified as suitable for development. Metal corrosion.	Low risk of erosion impacts at this site. Potential for rare flooding. The high pH could affect concrete and deteriorate metal pipe.	Maintains existing baseline.

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

This chapter provides the analytical basis for comparison of alternatives outlined in the prior section. It discusses the anticipated environmental effects associated with implementation of the various alternatives.

4.0 METHODOLOGY

The following definitions were used to evaluate the context, intensity, duration and cumulative impacts associated with project alternatives:

Context is the setting in which each impact is analyzed, such as affected region, society as a whole, the affected interests, and/or locality. In this DSEIS, the intensity of impacts is evaluated within a project area context. The intensity of the contribution of effects to cumulative impacts is evaluated in a regional and park-wide context.

Intensity is a measure of the scale of the impact, which can be defined as both detrimental as well as beneficial. The intensity of an impact may be:

· negligible, when an impact is localized and not measurable or at the lowest level of detection;

· minor, when the impact is localized and slight but detectable;

· moderate, when an impact is readily apparent and appreciable; or

· major, when the impact is either severely adverse or of great benefit and highly noticeable.

Duration is a measure of the time period over which the effects of an impact persist. The duration of impacts in this DSEIS may be:

· short term, when impacts occur only during the implementation phase or last less than one year; or

· long term, when the impact lasts one year or longer.

Cumulative impacts are impacts on the environment that result from the incremental impacts of the action when added to the other past, present, and reasonably foreseeable future actions regardless of who takes the action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

4.1 IMPAIRMENT OF PARK RESOURCES OR VALUES

In addition to determining the environmental consequences of the preferred and other alternatives, NPS Management Policies (NPS, 2000b) require analysis of potential effects to determine if actions would impair park resources.

The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid or minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impacts do not constitute impairment of the affected resources and values. Congress has given the NPS management discretion to allow certain impacts within parks. That discretion is limited by the statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of the park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources and values. An impact to any park resource or value may constitute impairment. However, an impact would more likely constitute an impairment to the extent it affects a resource or value whose conservation is: 1) necessary to fulfill specific purposes identified in the enabling legislation or proclamation of the park; 2) key to the natural or cultural integrity of the park for opportunities for enjoyment of the park; or 3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents. Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating legally in the park. A determination of impairment is made for each issue under each alternative within each "Conclusion" section of this DSEIS under "Environmental Consequences".

4.2 ALTERNATIVE 1. No Action, Implement GMP

Issue 1: Effects on Cave and Karst Resources

Under the No Action Alternative, the Great Basin Visitor Center would be constructed on Baker Ridge. This area is composed of Limestone karst geology. Due to its close proximity to the Baker Creek cave system there is the high potential for underlying caves.

Caves tend to be easily damaged by both surface and subterranean activities. Possible concerns: above ground development, visitor safety, vandalism, water quality, and contamination for petroleum products and other fluids leaking from vehicles. The GRBA GMP addresses this issue. Page 28 of the GMP speaks to development in the modern subzone that " To protect cave resources from direct disturbance from construction, where facilities were proposed on limestone or on alluvial deposits overlying limestone, the underlying areas would be thoroughly investigated for the presence of caverns before initiating construction."

Conclusion: There is the potential for major long-term impacts to cave resources with construction of a visitor facility of the scale proposed. The no action alternative has the potential to result in permanent resource impairment.

Cumulative Effects: The current location of GRBA's visitor center is adjacent to and above a portion of Lehman Caves. The action proposed in the GMP would locate a new visitor center adjacent to and potentially above a portion of the Baker Creek Cave system. There is the potential for moderate effects by impacting another cave system from development.

Mitigation - Potential effects of alternative 1 on cave and karst resources would be mitigated in the following ways:

Prior to any proposed construction activities:

1) Conduct seismic investigations to determine if caves were present in the underlying substrate.

2) Conduct geotechnical investigations to determine the bearing capacity of the substrate and to assure that construction would not impact unknown cave systems.

3) If it is determined that cave resources might be adversely affected, the facilities would be redesigned or an

alternative location would be selected.

ue 2: Effects on Interpretation and Visitor Services

The GMP identified that "Two aspects of interpretation are of concern in planning for Great Basin." The first was the emphasis inside the park on Lehman Caves, "although the creation of the park has greatly expanded the area's interpretive purpose and potential." Second, was the acknowledgement that, "the landforms and ecosystems within the established national park boundary do not fully represent the physiographic theme that is central to the Great Basin story. For that reason, PL99-565 encouraged the Park Service to enter into cooperative agreements with other agencies...." These opportunities would be met by expanding space and opportunity for enhanced interpretation of the park. These facilities would disperse interpretive services to three areas: Baker, Nevada, Baker Ridge and the Lehman Caves interpretive center.

Conclusion: There is the potential for major long-term beneficial effects on Interpretation and Visitor Services with construction of a visitor facility of the scale proposed.

Cumulative Effects: With the addition of a new visitor center and the conversion of the existing visitor center into a Lehman Caves interpretive Center and tour complex. There is the potential for cumulative effects by increasing the park's ability to interpret the Great Basin.

Issue 3: Effects on Park Development

The development framework that would exist, if actions continue to be implemented as recommended in the GMP, would be on a project-by-project basis and without a comprehensive funding program. Individual actions would be implemented as funding permitted. New facilities on Baker Ridge would be provided as prescribed in the GMP.
:ause implementation of current approved plans would be done on a piecemeal basis and without comprehensive ıunding, the timeline for development cannot be reliably estimated. Development areas and facilities would be retained as prescribed under the GMP. Major maintenance functions, administrative offices and non-critical employee housing would eventually be removed from the park. Extensive utility system infrastructure within the park would be needed to accommodate the Baker Ridge Visitor Center. The cost for the utility systems development is calculated at $8,102,400 (summarized from the GMP) in 1991 dollars.

Conclusion: There is the potential for major long-term effects on park development with construction of a visitor facility and other associated infrastructure of the scale proposed. The No Action Alternative has the potential to result in permanent resource impairment by increasing development within the park, which is inconsistent with NPS management policy to limit in-park development, and by the actions to develop the necessary infrastructure.

Cumulative Effects: With the addition of a new visitor center and the conversion of the existing visitor center into a Lehman Caves interpretive Center and tour complex, there is the potential for cumulative effects by increasing in-park development.

Issue 4: Effects on Scenic Resources

Under this proposal, the construction of the visitor center of Baker Ridge would provide outstanding mountain and valley views. The visitor center itself, however, could detract the unobstructed views from the valley as a prominent building on the ridge and detract from the unobstructed views of mountainous terrain from many of the higher elevation areas within the Baker Creek watershed.

Conclusion: There is the potential for moderate long-term effects on scenic resources with construction of a visitor ılity on Baker Ridge. The site would be readily visible from numerous backcountry locations within the Baker Creek watershed. The no action alternative has the potential to result in permanent resource impairment by degrading scenic resources from several areas within the parks backcountry.

Cumulative Effects: There is the potential for cumulative effects to scenic resources by increasing in-park development.

Issue 5: Effects on Cultural Resources

Implementation of the GMP will not result in direct impact to cultural resources. No archeological sites were found when the location of the proposed Baker Ridge visitor center was surveyed in 1989. However, increased visitor activity in the vicinity of the proposed Baker Ridge visitor center could result in indirect and direct impacts to many of the sensitive archeological resources located within ¼ mile of the proposed visitor center. These sites include the very fragile and important Baker Creek caves and pictographs. Indirect effects to a site may include increased surface wear, erosion, damage and even vandalism (most commonly in the form of artifact theft or graffiti on rock art sites), if the GMP results in an increased number of park visitors to the site's locale.

Conclusion: There is the potential for minor long-term impacts to archeological resources due to infrastructure development. Water, electricity and wastewater delivery systems would be needed. This would require several miles of underground pipelines that would need to be trenched in several feet below ground. While the Baker Ridge site was found to contain no cultural resource sites, no below ground testing and assessments have been completed for the route of underground utilities. The no action alternative has the potential to result in permanent resource impairment by disrupting belowground archeological deposits.

Cumulative Effects: Section 106 Cultural Resource clearance would be required prior to development of a utility system. At this time there are no known cumulative effects to cultural resources.

Mitigation - Potential effects of alternative 1 on cultural resources would be mitigated in the following ways:

Prior to any proposed construction activities:

1) An Archeologist would perform a clearance on utility corridors.

2) An Archeologist would oversee trenching activities and stop work if any cultural resource deposits were disturbed and develop additional mitigation measures at that time.

Issue 6: Effects on Socioeconomics

The GMP calls for an entrance road accessed south of the town of Baker leading to a visitor center within the park. Town businesses believe that when visitors must drive through town to reach the park, more visitors are likely to stop and patronize their businesses. However, park visitors would be traveling to reach the park's main visitor center located within the park, and the effect on socioeconomic of Baker is not expected to be significant under the no action alternative. Park visitors would still receive their park orientation at the visitor center, and would already have driven five miles into the park. They would be likely to continue their visit by traveling to the Lehman Caves and Wheeler Peak Scenic Drive, rather than return back down the hill and drive to other park destinations. Local and non-local contractors would be given the opportunity to bid on construction contracts. Construction workers would improve the local economy by frequenting local businesses during the construction period.

Conclusion: Effects on Socioeconomics would be moderate and long term. The no action alternative has no potential to result in permanent resource impairment on a socioeconomic scale.

Cumulative Effects: There is the potential for cumulative effects to socioeconomic resources.

Issue 7: Effects on Ecosystem Structure and Function and Sensitive Plants

Although no sensitive plant species are, at this point, known to occur at the Baker Ridge site, the Logring-Hopeka-Rock Outcrop soils are known to support NPS sensitive or special status plant species in GRBA. Populations of Penstemon concinnus and Penstemon leiophyllus var. francisci-pennellii occur at similar elevations on this soil type in the Baker Creek and Snake Creek drainages. The dry, limestone parent material of this pinyon-juniper site makes it a possible candidate to harbor alkali-favoring NPS sensitive or special status species such as Astragalus lentiginosus v. latus, Machaeranthera grindelioides v. depressa, and Draba pennellii.

Construction of roads, trails, buildings, etc. at this site could negatively affect plant communities, ecosystem integrity, and especially NPS sensitive or special status plant species. Construction activities create disturbance openings that favor aggressive exotic plants, particularly cheatgrass and spotted knapweed, that can out-compete native plants, reduce biodiversity, and disrupt local ecological processes. Increased visitation would provide for the introduction of nonnative plants by vehicles. Development activities could negatively affect sensitive plants species by destroying habitat and directly uprooting or otherwise killing plants.

Conclusion: There is the potential for long-term minor effects to ecosystem structure and sensitive plants. Construction activities and increased visitation can create disturbance that favor exotic plant establishment and impact sensitive plant species. Since evasive nonnative plants have the ability to out-compete native plant communities and spread off site, there is the potential for permanent resource impairment without implementation of mitigation measures.

Cumulative Effects: There is the potential for cumulative effects to ecosystem structure and sensitive plant species. There are 42 species of nonnative herbaceous plants known to occur in GRBA. Four species are of primary concern and have been identified based on their detrimental effects to native plant and animal communities and their high potential to spread. These species are found along existing roadways and could be easily transported to the Baker Ridge site by vehicle.

Mitigation - Potential effects of Alternative 1 on plant communities and NPS sensitive or special status plant species would be mitigated in the following ways:

1) Minimizing soil disturbance during construction, saving and replacing topsoil to retain native seed bank and organic matter, and mulching with native material to prevent establishment of exotic plants.

ntensive surveying of area and rerouting planned disturbances and construction away from populations of sensitive plants.

3) Salvaging native plants, especially sensitive species, from construction sites and re-planting disturbed areas with only native plants.

4) Seeding large disturbed areas with locally collected native plant seed only.

Issue 8: Effects on Sensitive Wildlife Species

The population density of Merriam's shrew, pygmy rabbits and bats in the proposed action area is unknown. Likewise, the population density of small mammals that are important forage for TES species is unknown. Therefore, estimation of potential population declines due to the proposed actions is not possible. What will be estimated is the area of displacement and numbers of breeding pairs that could be impacted as a result of completed development at the sites.

A visitor center on Baker Ridge would both displace resident Sensitive species and present an obstacle for movement of Sensitive species. Construction would likely disturb approximately 10 acres on Baker Ridge. This would have the potential to displace five breeding pairs of Merriam's shrew and one breeding pair of pygmy rabbits. Habitat for pygmy rabbits is marginal on Baker Ridge but may provide a foraging area. This loss of forage could potentially reduce the carrying capacity for pygmy rabbits. Due to the small size of Merriam's shrew, the proposed visitor center could isolate individuals from one another by presenting a major obstacle between them. However, this acreage represents less than one percent of the available pinyon juniper community available in the area. This loss would lead to small mammal population declines of less than five percent.

No known rock crevices or caves are located in the construction zone. Therefore, displacement of bats is not expected. In fact, the new visitor center may provide additional habitat for bats. Surveys for cave resources prior to construction would identify any potential bat habitat surrounding the construction area. Disturbance of bats by construction and visitor activities is not expected due to the nocturnal nature of bats and diurnal activity of construction and visitation. The topography of the Baker Ridge site, which is located in a saddle, would direct

movement of animals through it. Though not a major obstacle, the placement of the visitor center in the saddle may require bats to go further distances to avoid it, expending more energy reserves.

Conclusion: There is the potential for long-term negligible effects to TES wildlife species. Construction activities and increased visitation can create disturbance that discourage wildlife use of the site. However, the effects of such would be very localized and on a landscape scale the proposed action would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to negligible effects on a very localized scale.

Issue 9: Effects on Other Wildlife Species

Like sensitive species, population densities of mule deer are not known. It is only known that mule deer use the proposed action area as winter and spring/fall transition range. Based on approximately 10 acres being developed and an ocular estimate of 80 pounds of forage (excluding juniper) per acre, placement of the visitor center on Baker Ridge could displace two to four deer days permanently. Deer days would represent the number of days a given area could support one adult deer and fawn. This is due to the loss of available forage as a result of development. The lower figure would reflect plantings for landscaping that could mitigate for the loss of natural forage.

Individual mule deer respond differently to disturbance and habituation to human activity. Some individual deer may avoid human activity at all cost while others habituate readily. Because of this, development activity and visitation is not suspected to affect population densities. Deer more adaptable will replace deer that avoid human activity.

The placement of the visitor center in the saddle of Baker Ridge could disrupt mule deer movement along the ridge. Saddles provide low, less steep areas to traverse from one basin to another. Placement of a visitor center here would further restrict an available corridor making mule deer more vulnerable to predation or, in the case of being directed along the Narrows road on Baker Creek, being more susceptible to human induced accidents or poaching. Thus, there is a potential to increase mortality, which could reduce population densities.

In addition, birds probably use the saddle to fly through. Constructing a building, particularly with large view windows, could lead to bird collisions with the windows and any suspended wires. Mitigation could include placing silhouettes of accipiters (goshawks, cooper's hawks) on the windows, which would direct birds away, and requiring all wires be underground or flush with the building.

Conclusion: There is the potential for long-term negligible effects to wildlife species. Construction activities and increased visitation can create disturbance that discourage wildlife use of the site. However, the effects of such would be very localized and on a landscape scale the proposed action would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to negligible effects on a very localized scale.

Issue 10: Effects on Soils Resources

The proposed visitor center site at the Baker Ridge is in an area with a K erosion factor 0.10-1.0 (greater than 0.35 means it erodes easily), which means that water erosion may be a problem in this soil type. Some soil loss would be anticipated as a result of development. Landscaping and site restoration, post development, would minimize this potential. Flooding is not a problem since the site does not occur within a flood plain. Site has been classified as suitable for development. A concrete foundation would assure the best structural stability. Metal, if exposed to the soils, would corrode. The soil is structurally stable with low clay content, making it unlikely to shrink or swell.

Conclusion: There is the potential for short-term negligible effects to soil resources. Construction activities can create disturbance areas, which would be mitigated upon revegetation of the site. The effects of such would mainly occur during the construction phase and be very localized. On a landscape scale the proposed action would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to negligible effects on a very localized scale.

Unavoidable Adverse Effects

.e No Action Alternative would directly affect approximately 10 acres of undisturbed or minimally disturbed lands. Impacts range from complete vegetation removal, excavation, grading and surfacing to selective tree removal and brush removal for vista improvement and fuels reduction around structures.

Irreversible and Irretrievable Commitment of Resources

Irreversible commitments of resources include consumption or destruction of nonrenewable resources such as minerals and archeological remains. Under the No Action Alternative, the NPS intends to meet its obligation under the Archeological Resources Protection Act. An archeological clearance will be performed as documentation for a determination of no effect by the project on archeological resources. If any archeological sites are found within the area of the proposed action, consultation with the Nevada State Historic Preservation Office will be initiated. Under the No Action Alternative, the NPS intends to protect all archeological resources to the extent practical. No historic structure or extraction of nonrenewable resources is involved with implementation of this alternative. Due to the mitigation measures to assure no impacts to cave resources, no irreversible commitment of cave resources would occur.

Irretrievable commitments of resources are uses that may cause them to be lost because the lands providing these resources are allocated for other uses. Under the No Action Alternative, approximately 10 acres are being developed and an ocular estimate of 80 pounds of forage (excluding juniper) per acre, placement of the visitor center on Baker Ridge could displace two to four deer days permanently. The placement of the visitor on Baker Ridge could disrupt mule deer movement and restrict an available corridor making mule deer more vulnerable to predation or, in the case of being directed along the narrows road on Baker Creek, being more susceptible to human induced accidents or poaching. Thus, there is a potential to increase mortality, which could reduce population densities. Approximately ıcres of mature, open pinyon-juniper woodland with a sagebrush/bunchgrass understory would be lost to ue.velopment. Although most of the developments could be removed and the site restored to previous conditions over time, the use of the land and financial resources to implement the no action alternative would in a practical sense, be an irretrievable commitment of resources.

Precedent Setting

This action does not establish a precedent for future actions, which are similar in nature but that might have significant effects. Future modifications to the existing GMP will follow the NEPA process to allow amendment.

Effects

The environmental consequences associated with the action are not highly uncertain and do not involve unique or unknown risks. The environmental consequences associated with the action are not likely to be highly controversial. Following prescribed mitigation measures, the environmental consequences associated with the action have no potential for significant effects upon the human environment.

4.3 ALTERNATIVE 2. Proposed Action, Baker Visitor Learning Center

Issue 1: Effects on Cave and Karst Resources

The proposed site in the town of Baker area is not located on limestone karst geology. There is no potential for underlying solution caves. No adverse impacts to cave and karst resource would occur with implementation of this alternative. Caves tend to be easily damaged by both surface and subterranean activities. Possible concerns: above ~ und development, visitor safety, vandalism, water quality, and contamination for petroleum products and other fluids leaking from vehicles. Currently, approximately 30 to 40 percent of the 80,000 to 90,000 visitors to GRBA participate on the Lehman Cave tours. Most of these visitors come to the existing visitor center. By relocating the main visitor center to the town of Baker, impacts to Lehman Caves would be minimized from those existing as less petroleum products and other fluids leaking from vehicles would wash into the soils and eventually percolate into the cave system.

Conclusion: There is no potential for even short-term negligible impacts to cave resources due to a lack of karst geology. No impairment to cave and karst resources will occur.

Cumulative Effects: The action proposed will have no potential for cumulative effects to cave and karst resources.

Issue 2: Effects on Interpretation and Visitor Services

This proposal would expand the size and the quality and quantity of visitor information, orientation and interpretive function of the Baker, Nevada facility proposed in the GMP. It would move the interpretive media prescriptions and operations proposed for the Baker Ridge facility to the Baker, Nevada site. The operation would be year round. There would be the opportunity for interagency and partner participation in the operation of the facility.

Conclusion: There is the potential for major long-term beneficial effects on Interpretation and Visitor Services with the action as proposed. No impairment will occur.

Cumulative Effects: With the addition of a new visitor learning center and the conversion of the existing visitor center into a Lehman Caves interpretive Center and tour complex, there is the potential for cumulative effects by increasing the park ability to interpret the Great Basin.

Issue 3: Effects on Park Development

The Baker Ridge Visitor Center and the associated utility system development would not be constructed. Alternatively, a multi-purpose facility would be constructed on the Administrative Site adjacent to Baker, Nevada. The facility would use existing water and sewer services provided by the town of Baker and would not require a park owned or operated utility system.

The use of the Administrative Site location for development would substantially reduce the impact on land inside the park boundary for construction and be would be consistent with new NPS management policies. Development at the Administrative Site can be reliably estimated based on funding availability and with the coordination of our partnership organization, the Great Basin National Park Foundation. Completion of the visitor services facility could take place as soon as September of 2004.

The management-zoning concept that has been developed under the current GMP focuses on diversity in planning and development for recreational experiences. The difference in the levels and types of use and the types of physical developments for park areas is fundamental to the park-zoning concept and is strengthened by this proposed action. The entire Administrative Site is located in the Modern Subzone, a zone that is established to accommodate the highest levels of use: "All major developments would be confined to this subzone. Existing and potential modifications might include visitor centers, surfaced parking lots and roads, transportation systems, rustic and limited-service campgrounds, maintenance facilities, residential areas, water and sewage treatment facilities, and various other support facilities."

Conclusion: The potential for effects on park development is nonexistent. No new facilities would be constructed in the park. No resource impairment will occur.

Cumulative Effects: There is no potential for cumulative effects from increasing in-park development.

Issue 4: Effects on Scenic Resources

The facility in Baker, Nevada would be larger than the Baker orientation center proposed in the GMP and incorporate views across the basin to the east and the surrounding ranges to the north, south and west. The observation points around the Baker Ridge facility would not be available. The views across the basin would be from the Lehman Cave interpretive facility. It's possible that the presence of the Center would attract other forms of development on nearby private lands. Under this proposal, the construction of the visitor center on Baker Ridge would not occur and therefore could not obstruct views from the valley or detract from the unobstructed views of mountainous terrain from higher elevation areas within the Baker Creek watershed.

Conclusion: There is no potential for even short-term negligible effects on scenic resources with construction of a facility in the town of Baker. The alternative has no potential to result in permanent resource impairment by degrading scenic resources.

Cumulative Effects: There is no potential for cumulative effects to scenic resources.

Issue 5: Effects on Cultural Resources

The proposed action will directly impact archeological site 26WP2016 and indirectly impact the other three sites within the 80-acre parcel north of Baker. All of the sites in this parcel of land, that is sites 26WP2015, 2016, 2017, and 2018, are significant under National Register criterion D, the potential to provide information important to the understanding of prehistory (Wells 1993). Therefore compliance with Section 106 of the National Historic Preservation Act will be required prior to any ground-disturbing activities at or near these sites.

Construction activities related to the proposed action (for example, blading, trenching, paving, grading, etc.) may directly impact the surface or subsurface area of any of the sites. To mitigate the effects of direct impacts, archeological data recovery in the form of full-scale excavation is recommended (Wells 1993) for 26WP2016 (Wells 1993).

Sites outside the construction footprint may experience indirect negative impacts, most likely in the form of increased artifact scavenging and damage or vandalism from the increased numbers of visitors the proposed Center will bring to the area. Future planning in the 80-acre parcel must include consideration of these archeological sites and of the Baker Ranger Station, which is on the National Register of Historic Places.

Conclusion: Effects on archeological resources would be negligible with construction of the Center by implementing mitigation measures. Effects on archeological resources would be long term and minor with increased visitation if scavenging and vandalism occurs. The alternative has no potential to result in permanent resource impairment.

Cumulative Effects: Since Section 106 Cultural Resource clearance would be required prior to development there are no known cumulative effects to cultural resources.

Mitigation - Potential effects of alternative 2 on cultural resources would be mitigated in the following ways:

Prior to any proposed construction activities:

1) Archeological data recovery in the form of full-scale excavation.

Issue 6: Effects on Socioeconomics

A visitor education center in the town of Baker will inform visitors not only about park resources and features, but also about opportunities within the surrounding region, including Baker and many destinations and routes into the park. Because most park visitors are expected to stop and view the exhibits and orientation information at the center, it is expected that patrons of Baker businesses will increase significantly.

The total visitation could increase because the center will be located nearer to Highway 50 and 6, and will be a destination for visitors to the general region, including Bureau of Land Management, U.S. Forest Service lands, and the Great Basin Heritage Area. However, based on visitation data for the years 1991-2001 and traffic data for Highway 50 and 6, the visitation is not expected to increase dramatically.

business and tourism organizations from Ely, Nevada to Delta, Utah; the Ely Districts of the BLM and the USDA Forest Service; and the Nevada Commission on Tourism have documented their support for a visitor center located in Baker. They believe this location will help increase total visitors who patronize Baker businesses. Some business owners believe the new center will also improve the town appearance and stimulate other town improvements. Local and non-local contractors would be given the opportunity to bid on construction contracts. Construction workers would improve the local economy by frequenting local businesses during the construction

period.

Conclusion: Effects on Socioeconomics would be moderate and long term.

Cumulative Effects: There is the potential for beneficial cumulative effects to socioeconomic resources.

Issue 7: Effects on Ecosystem Structure and Function and Sensitive Plants

Construction disturbance caused by implementation of this alternative at the Baker site could have significant impacts on ecosystem processes and sensitive plant populations on the Park's 80-acre administrative site. Although no spotted knapweed (Centaurea maculosa) currently occurs on the site, the probability of this invasive plant being introduced to disturbed areas by heavy equipment and vehicle traffic is high. Heavy infestation of the site by exotic annual grasses (e.g. Broumus tectorum) and early-successional forbs such as Russian thistle (Salsola iberica) and tumble mustard (Sisymbrium altissimum) is likely to occur in locations where mineral soil is exposed. Proliferation of exotic plants in response to construction and increased vehicle traffic at the proposed site could result in disruption of natural ecological processes and could threaten populations of sensitive plant species likely to occur in the Snake Valley. Sensitive species potentially affected include *Astragalus diversifolius,* and *Sclerocactus pubispinus*.

Conclusion: There is the potential for long-term minor effects to ecosystem structure and sensitive plants. Construction activities and increased visitation can create disturbance that favor exotic plant establishment and impact sensitive plant species. Since evasive nonnative plants have the ability to out-compete native plant communities and spread off site, there is the potential for permanent resource impairment without implementation of mitigation measures; since these interventions will be stipulated, there is no park impairment.

Cumulative Effects: There is the potential for cumulative effects to ecosystem structure and sensitive plant species. There are 42 species of nonnative herbaceous plants known to occur in GRBA. Four species are of primary concern and have been identified based on their detrimental effects to native plant and animal communities and their high potential to spread. These species are found along existing roadways and could be easily transported to site by vehicle.

Mitigation - Negative effects of alternative 2 on plant communities and sensitive plant species will be mitigated in the following ways:

1) Minimizing soil disturbance during construction, saving and replacing topsoil to retain native seedbank and organic matter, and mulching with native material to prevent establishment of exotic plants.

2) Intensive surveying of area and rerouting planned disturbances and construction away from populations of sensitive plants. Install barrier fencing.

3) Salvaging native plants, especially sensitive species, from construction sites, or purchasing them, and re-planting disturbed areas with only native plants.

4) Seeding large disturbed areas, such as roadsides, with locally collected native plants only.

5) Aggressively removing infestations of exotic plants, especially spotted knapweed, on the site.

Issue 8: Effects on Sensitive Wildlife Species

The population density of small mammals on the Baker Administrative site is not known. Therefore, estimation of potential population declines due to the proposed actions is not possible. What will be estimated is the area of displacement and numbers of breeding pairs that could be impacted as a result of completed development at the proposed action areas.

A visitor center on the Baker Administrative site would primarily displace species that are prey to Sensitive species.

The visitor center may also isolate smaller individual mammals, such as shrews, from other individuals. This is due the development blocking direct access throughout the site. Several acres of parking lots or buildings can represent significant obstacles for smaller species to go around. Construction would likely disturb approximately 10 - 15 acres at the Baker Administration Site. This would have the potential to displace a number of breeding pairs of mammals associated with this acreage. This could vary between perhaps a dozen pairs of antelope ground squirrels to one pair of black-tailed jackrabbits. Landscaping with native vegetation and providing islands of native vegetation within walkways and parking lots would reduce numbers displaced. However, this acreage represents less than one percent of the available greasewood desert shrub available in the area that supports desert small mammal communities. This loss would lead to small mammal population declines of less than five percent.

Trees surrounding the old Baker Ranger Station at the south end of the site would not be disturbed so potential roost sites for Ferruginous and Swainson's hawks and bats would be maintained. Nor would agriculture fields or reservoirs be altered as a result of the proposed action.

Conclusion: There is the potential for long-term negligible effects to TES wildlife species. Construction activities and increased visitation can create disturbance that discourage wildlife use of the site. However, the effects of such would be very localized, and on a landscape scale the proposed action would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to negligible effects on a very localized scale.

Mitigation - Negative effects of alternative 2 on plant communities and sensitive plant species could be mitigated in the following ways:

1) Landscape with native vegetation and provide islands of native vegetation within walkways and parking lots

ue 9: Effects on Other Wildlife Species

Population densities of mule deer or Pronghorn antelope are not known for the Baker Administrative site. A visual walk through indicated that use by these ungulates was not significant. Deer may travel through on their way to agricultural fields east of the site following the heavily vegetated ditch. It is suspected that local, domestic dogs inflict harassment to the point that deer and antelope avoid the area. Thus, development here is not expected to displace mule deer or antelope. Small mammals were discussed under TES species. Trees surrounding the old Baker Ranger Station at the south end of the site would not be disturbed so potential roost sites for owls, hawks or other birds would be maintained. Nor would agriculture fields or reservoirs be altered as a result of the proposed action.

Conclusion: There is the potential for long-term negligible effects to wildlife species. Construction activities and increased visitation can create disturbance that discourage wildlife use of the site. However, the effects of such would be very localized and on a landscape scale the proposed action would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to negligible effects on a very localized scale.

Issue 10: Effects on Soils Resources

All construction and increased use will be focused on the Baker Administrative site, which has a low risk of erosion impacts. The area is located on an alluvial outwash plain with the slight potential for flooding in the drainage channels during high-intensity storms. The matrix of relict oxidized concentrations in the C-horizon suggests a higher, possibly fluctuating water table in the past. The erosion potential is low, except for exposed dune sands that could be windblown, if disturbed. The soil is structurally stable with low clay content, making it unlikely to shrink well. The high pH of the soil could affect concrete and deteriorate metal pipe.

Conclusion: There is the potential for short-term negligible effects to soil resources. Construction activities can create disturbance areas, which would be mitigated upon revegetation of the site. The effects of such would mainly occur during the construction phase and be very localized. On a landscape scale the proposed action would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to negligible effects on a very localized scale.

Unavoidable Adverse Effects

Approximately 15 acres of moderately disturbed lands would be directly affected by the proposed action. Impacts range from complete vegetation removal, excavation, grading and surfacing to selective brush removal for vista improvement and fuels reduction around structures.

Irreversible and Irretrievable Commitment of Resources

Under the proposed action alternative, the NPS intends to meet its obligation under the Archeological Resources Protection Act. If any archeological sites are found within the area of the proposed action, consultation with the Nevada State Historic Preservation Office will be initiated. Under this alternative, the NPS intends to protect all archeological resources to the extent practical. No historic structure or extraction of nonrenewable resources is involved with implementation of this alternative.

Under the proposed action alternative, approximately 10 - 15 acres of salt brush/sagebrush plant community are being developed. The placement of the visitor on the Baker administration site would have little potential to disrupt wildlife movement and restrict any available wildlife corridor. Although most of the developments could be removed and the site restored to previous conditions over time, the use of the land and financial resources to implement the alternative would be an irretrievable commitment of resources.

Precedent Setting

This action does not establish a precedent for future actions, which are similar in nature but that might have significant effects. Any future modifications to the existing GMP will follow the NEPA process to allow amendment.

Effects

The environmental consequences associated with the action are not highly uncertain or involve unique or unknown risks. The environmental consequences associated with the action are not likely to be highly controversial. The environmental consequences associated with the action. The environmental consequences associated with the action have no potential for significant effects upon the human environment.

4.4 ALTERNATIVE 3. Amend the GMP to maintain Lehman Caves Visitor Center as only visitor Center.

Issue 1: Effects on Cave and Karst Resources

Under this alternative, impacts to cave and karst resources would be no greater than currently exist. Both the current Visitor Center and parking lots are located above underlying solution caves. These facilities have disrupted natural water infiltration into these cave systems potentially slowing cave formation growth and altering the natural cave environment. Petroleum products that leak from vehicles in the parking lot are undoubtedly impacting these underlying cave systems.

Conclusion: There is no potential for even short-term negligible effects due to no action occurring. The action as proposed would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to no action occurring.

Issue 2: Effects on Interpretation and Visitor Services

Under this proposal, there would be no change to the existing interpretative and visitor services from what currently exists. No expanded potential to interpret the entire Great Basin would occur. No opportunities would exist to expand into an interagency operation to provide visitors information about other opportunities in the area beyond

what currently exists.

Conclusion: There is the potential for major long-term effects on Interpretation/Visitors Services with the loss of an additional visitor facility as proposed in the GMP. Interpretation and Visitor Services would be limited to the current baseline condition. No resource impairment would occur above the current baseline.

Cumulative Effects: With the loss of a new visitor center as proposed in the GMP there is the potential for minor cumulative effects by decreasing the park ability to interpret Great Basin as proposed in the GMP.

Issue 3: Effects on Park Development

The Baker Ridge Visitor Center would not be constructed. Existing water and sewer services would not need to be developed or expanded for new facilities. Without development, there would be no additional impact to assets within the park. Infrastructure problems with existing facilities would become worse with time and more difficult to solve and require increasing funds to manage. Conclusion: There is no potential for even short-term negligible effects due to no action occurring. The action as proposed would not result in resource impairment. Cumulative Effects: There is no potential for cumulative effects due to no action occurring. Issue 4: Effects on Scenic Resources Under this proposal there would no change to the existing scenic resources.

Conclusion: There is no potential for even short-term negligible effects due to no action occurring. The action as proposed would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to no action occurring.

Issue 5: Effects on Cultural Resources

This alternative has no direct effect on the park's cultural resources. That is, if no new construction activities are proposed, there should be no related effect on the condition of the cultural resources, either within the 80-acre Baker administrative site or within the park. Indirectly, however, the lack of a fully developed Center could negatively affect the park's cultural resources. An expanded Center will allow the park to expand its message regarding cultural resources preservation.

Conclusion: There is no potential for even short-term negligible effects due to no action occurring. The action as proposed would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to no action occurring.

Issue 6: Effects on Socioeconomics

Under this proposal there would be no change to the existing socioeconomic conditions.

Conclusion: Effects on socioeconomics would be moderate and long term on a very localized scale due to loss of increased visitor services. There is no potential for permanent resource impairment on a socioeconomic scale when compared to the existing baseline.

Cumulative Effects: There is no potential for cumulative effects when compared to the existing baseline.

Issue 7: Effects on Ecosystem Structure and Function and Sensitive Plants

Implementation of this alternative would result in no additional activity at either the Baker Ridge or Baker town site. This alternative would result in no environmental consequences additional to those currently occurring on these sites.

Conclusion: There is no potential for even short-term negligible effects due to no action occurring. The action as proposed would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to no action occurring.

Issue 8: Effects on Sensitive Wildlife Species

Baseline conditions of TES species would not change at Baker Ridge or the Baker Administrative site due to no development.

Conclusion: There is no potential for even short-term negligible effects due to no action occurring. The action as proposed would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to no action occurring.

Issue 9: Effects on Other Wildlife Species

There would be no impact to other wildlife species at Baker Ridge or the Baker Administrative site due to no development occurring under Alternative 3.

Conclusion: There is no potential for even short-term negligible effects due to no action occurring. The action as proposed would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to no action occurring.

Issue 10: Effects on Soils Resources

Implementation of this alternative would result in no additional activity at either the Baker Ridge or Baker town site. This alternative would result in no environmental consequences additional to those currently occurring on these sites.

Conclusion: There is no potential for even short-term negligible effects due to no action occurring. The action as proposed would not result in resource impairment.

Cumulative Effects: There is no potential for cumulative effects due to no action occurring.

Unavoidable Adverse Effects

There are no unavoidable adverse effects with implementation of this alternative.

Irreversible and Irretrievable Commitment of Resources

There are no irreversible and irretrievable Commitment of Resource with implementation of this alternative above that which already exist with the current Lehman Caves Visitor Center.

Precedent Setting

This action does not establish a precedent for future actions, which are similar in nature but that might have significant effects. Any future modifications to the existing GMP will follow the NEPA process to allow amendment.

Effects

The environmental consequences associated with the action are not highly uncertain and do not involve unique or unknown risks. The environmental consequences associated with the action are not likely to be highly controversial. The environmental consequences associated with the action have no potential for significant effects upon the human environment.

Table 2. Mitigation Matrix

Issue	Alt 1 Mitigation Measures	Alt 2 Mitigation Measures	Alt 3 Mitigation Measures	Responsible Party
Issue #1 Cave Resources	Conduct seismic investigations to determine if caves were present in the underlying substrate;Conduct geotechnical investigations to determine the bearing capacity of the substrate and to assure that construction would not impact unknown cave systems; and,If it is determined that cave resources might be adversely affected, the facilities would be redesigned or an alternative location would be selected	None Required	None Required	Chief of Resource Management and/or Physical Scientist Cooperation from the Geologic Resource Division of the NPS
Issue #2 Visitor Services	None Required	None Required	None Required	
Issue #3 Park Development	None Required	None Required	None Required	
Issue #4 Scenic [illegible]sources	None Required	None Required	None Required	
Issue #5 Cultural Resources	Data recovery Cultural Resource Clearance	Data Recovery	None Required	Resource Management Specialist
Issue #6Socioeconomic	None Required	None Required	None Required	
Issue #7 Ecosystem Structure/ Sensitive Plants	Minimizing soil disturbance during construction, saving and replacing topsoil to retain native seed bank and organic matter, and mulching with native material to prevent establishment of exotic plants. Intensive surveying of area and rerouting planned disturbances and construction away from populations of sensitive plants. Salvaging native plants, especially sensitive species, from construction sites and re-planting disturbed areas with only native plants Seeding large disturbed areas, such as roadsides, with locally collected native plants only.	Minimizing soil disturbance during construction, saving and replacing topsoil to retain native seed bank and organic matter, and mulching with native material to prevent establishment of exotic plants. Intensive surveying of area and rerouting planned disturbances and construction away from populations of sensitive plants. Salvaging native plants, especially sensitive species, from construction sites and re-planting disturbed areas with only native plants. Seeding large disturbed areas, such as roadsides, with locally collected native plants only.Aggressively removing infestations of exotic plants, especially spotted knapweed, on the site.	None Required	Ecologist and/or Resource Management Specialist
Issue #8				

Sensitive Wildlife Species	None Required	Landscape with Native Vegetation	None Required	
Issue #9 Other Wildlife Species	Plantings for landscaping to mitigate for the loss of natural forage.	None Required	None Required	Biologist
Issue #10 Soils	Landscaping and site restoration	Landscaping and site restoration	None Required	Resource Management Specialist

CHAPTER 5

COMPLIANCE/PARTICIPANTS/REVIEW

5.1 Compliance

The following laws and associated regulations provided direction for the design of project alternatives, the analysis of potential impacts and the formulation of mitigation measures:

National Environmental Policy Act of 1969 (Title 42 U.S. Code Sections 4321 to 4370 [42USC 4321-4370]).
The purpose of NEPA include encouraging "harmony between [humans] and their environment and promote efforts which would prevent or eliminate damage to the environment...and stimulate the health and welfare of [humanity]". The purposes of NEPA are accomplished by evaluating the effects of federal actions. The results of these evaluations are used to inform the public, federal agencies and public officials in documented format for consideration prior to taking action or making decisions. Implementing regulations for the NEPA are contained in Part 1500 to1515 of Title 40 of the U.S. Code of Federal Regulations (40CFR 1500-1515).

Endangered Species Act of 1973, as amended (ESA) (16USC 1531-1544).
The purposes of the ESA include providing "a means whereby the ecosystems upon which an endangered species and threatened species depend may be conserved". The ESA requires that "all Federal departments and agencies shall seek to conserve endangered species and threatened species" and "each Federal agency shall...insure that any action authorized, funded or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species". Section 7 of the ESA requires that through consultation with the U.S. Fish and Wildlife Service or National Marine Fisheries Service the effects of any agency action that may affect endangered, threatened, proposed species or designated critical habitat must be evaluated. Implementing regulations that describe procedures for interagency consultation to determine the effects of actions on endangered, threatened, proposed species or designated critical habitat are contained in 50 CFR 402.

National Historic Preservation Act of 1966, as amended (NHPA) (16 USC 470 et sequential).
Congressional policy set forth by the NHPA includes preserving "the historical and cultural foundations of the Nation" and preserving irreplaceable examples important to our national heritage to maintain "cultural, educational, aesthetic, inspirational, economic and energy benefits". Section 106 of the NHPA requires that federal agencies take into account the effects of their actions and consult as appropriate in fulfilling Section 106 requirements. Section 106 further requires federal agencies to propose and evaluate alternatives to undertakings that would adversely affect historic properties or to adequately mitigate adverse effects if avoidance cannot be reasonably achieved.

5.2 List of Preparers

The core interdisciplinary team consisted of the following GRBA personnel:

Mike Allison,Facility Manager
Issues Analyzed: Effects on Park Development

Neal Darby, Wildlife/Fisheries Biologist
ues Analyzed: Effects on Threatened, Endangered, and Sensitive Wildlife Species Effects on Other Wildlife
Species

Betsy Duncan-Clark, Interpretive Specialist
Issues Analyzed: Effects on Interpretation and Visitor Services Effects on Scenic Resources

Jon Jasper, Former Physical Science Technician
Issues Analyzed: Effects on Cave and Karst Resources

Becky Mills, Superintendent
Issues Analyzed: Effects on Socioeconomics

Kym Sigler, Former Administrative Officer
Issues Analyzed: Effects on Socioeconomics

Joe Sirotnak, Former Ecologist
Issues Analyzed: Effects on Ecosystem Structure and Function and Sensitive Plant Species

Susan Wells, Archeologist, Western Archeological and Conservation Center
Issues Analyzed: Effects on Cultural Resources

Tod Williams, Natural Resource Program Manager
Role: Interdisciplinary Team Leader

. . Roberts, Natural Resource Specialist
Issues Analyzed: Effects on Cave and Karst Resources Effects on Soil Resources

5.3 List of Recipients:

Federal Agencies

Humbolt National Forest
Ely Ranger District

Bureau of Land Management
Ely Resource Area

Natural Resource Conservation Service
Ely Office

Bureau of Indian Affairs
Western Regional Office

Bureau of Indian Affairs
Eastern Nevada Field Office

Bureau of Indian Affairs
Southern Paiute Office

U.S. Fish and Wildlife Service
Ecological Services - Reno Field Office

EPA Region 9 Office
Pacific Southwest Region

Baker Post Office

Garrison Post Office

Nevada Congressional Delegation

State of Nevada Delegation

Senator Harry Reid

Governor Kenny Guinn

Senator John Ensign
Representative Jim Gibbons
Representative Shelley Berkley

Senator Mike McGinness
Assemblywomen Marcia de Braga
Assemblyman Roy Neighbors

State Agencies

Dept. of Conservation and Natural Resources
Division of State Parks

Regional Visitor Center
Cathedral Gorge State Park

Economic Development Commission
Carson City Office

Commission on Tourism
Carson City Office

Nevada Environmental Commission
Carson City Office

Division of Environmental Protection
Carson City Office

Local Agencies

White Pine County Commission
Ely, NV

White Pine Chamber of Commerce
Ely, NV

Great Basin Business and Tourism Council
Baker, NV

Baker Citizens Advisory Board
Baker, NV

Great Basin Natural Heritage Area Partnership

Native American Tribes

Southern Paiute Tribe of Utah
Cedar City, UT

Indian Peaks Band
Southern Paiute Tribe, Cedar City, UT

Southern Paiute Consortium
Fredonia, AZ

Goshute Business Council
Ibapah, UT

Ely Shohone Council
Ely, NV

Skull Valley Band of Goshutes, UT

Organizations/Business

Baker Senior Citizens Center
Border Inn, Baker
The Outlaw, Baker
T&D's, Baker
Silver Jack Motel
National Parks & Conservation Association
Toiyabe Chapter, Sierra Club
Ely Times, Newspaper
Great Basin N.P. Foundation
Lehman Caves Cafe

Individuals

Stanley Jones, Henderson, NV
Abigail C. Johnson, Carson City, NV
David E. Moore, Baker, NV

5.4 List of Abbreviations and Acronyms

BLM = Bureau of Land Management
EA = Environmental Assessment
EIS = Environmental Impact Statement
GMP = General Management Plan
GRBA = Great Basin National Park
HNF = Humboldt National Forest
NEPA = National Environmental Policy Act
NHPA = National Historic Preservation Act
NNHP = Nevada Natural Heritage Program
NNNPS = Northern Nevada Native Plant Society
NPS = National Park Service
SEIS = Supplemental Environmental Impact Statement
DSEIS= Draft Supplemental Environmental Impact Statement
TES = Threatened, Endangered and Sensitive Species
USFWS = U.S. Fish & Wildlife Service
WSA = Wilderness Study Area

5.5 Glossary of Terms

Action - All activities or programs of any kind authorized, funded or carried out, in whole or in part by Federal agencies. **Activity Zones** - Areas identified within a building that limit accessibility to groups and individuals. **Affected Environment** - Is the description of the existing environment potentially affected by the proposed action and alternatives to the proposed action.
Context - Is the setting in which each impact is analyzed, such as affected region, society as a whole, the affected interests, and/or locality.
Cumulative Impacts - Is the impact on the environment, which results from the incremental impacts of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or persons under take such actions.
Duration - Is a measure of the time period over which the effects of an impact persist.
Environmental Consequences - Are the analytic evaluations of the potential effects or impacts of the proposed action and alternatives to the proposed action to the effected environment.
Intensity - Is a measure of the scale of the impact, which can be defined as both detrimental as well as beneficial.
Issues - Are concerns and opportunities raised by the internal and external public about the proposed action through the scoping process. Issues drive the NEPA process and determine the range of actions, alternatives and impacts to be addressed.
Irretrievable Commitment of Resources - Are uses that may cause resources to be lost because the lands providing these resources are allocated for other uses.
Irreversible Commitment of Resources - Includes consumption or destruction of nonrenewable resources such as minerals and archeological remains.
Karst Resources - Resources related to the Limestone land surface topography shaped by general rock dissolution.
Mitigation Measure - Are actions designed to minimize or eliminate adverse impacts of an action on the environment. **Scoping** - Scoping is an early and open process to solicit public and internal concerns relating to a proposed action. **Sensitive Species** - Species whose population status is either unknown or thought to be declining.
Threatened and Endangered Species - Any species of fish, wildlife or plant actually listed under Section 4 of the Endangered Species Act.

REFERENCES

Blackburn, Paul and Sirotnak, Joe. "GRBA Baker Tract Soil Analysis" Elko National Resources Conservation Service and Great Basin National Park. March 28, 2000.

Blake, Edward W. "Soil Survey of Great Basin National Park" USDA Soil Conservation Service, April 1992.

Blalack, JoAnn . In prep. Archeological Survey and Site Recording at Great Basin National Park, 1998 and 1999. To be published in the Western Archeological and Conservation Center Publications in Anthropology series.

Baggs, J.E. 1993. Annotated bibliography of biological collections from Great Basin National Park, Vol.II: Fauna.

Cooperative National Park Studies Unit, University of Nevada; Las Vegas.

Jacobs, R. W., and M. Flora. 1994. Water resources management plan, Great Basin National Park. 176 pages.

National Park Service.1993, General Management Plan - Great Basin National Park. Pacific Northwest Region.

National Park Service. 1993, Resource Management Plan - Great Basin National Park, Pacific Northwest Region. Unpublished. Baker, Nevada.

National Park Service. 1988, Great Basin National Park Resource Baseline Inventory. Great Basin National Park Special Publication No.1 NPS/WR GRBA/92-01. University of Nevada, Las Vegas, Nevada

National Park Service. 1991, NPS-77 Natural Resource Management Guidelines.National Park Service, Washington Support Office Washington, D.C.

Teague, George A. 1990 Archeological Survey of the Baker Center Property, Baker Nevada. On file, Western Archeological and Conservation Center, National Park Service, Tucson.

Wells, Susan J.
1990 Archeological Survey and Site Assessment at Great Basin National Park. Western Archeological and Conservation Center Publications in Anthropology 53. Western Archeological and Conservation Center, National Park Service, Tucson. 1993 Archeological Investigations at Great Basin National Park: Testing and Site Recording in Support of the General Management Plan. Western Archeological and Conservation Center Publications in Anthropology 64. Western Archeological and Conservation Center, National Park Service, Tucson.

USDA Forest Service. 1991. Threatened, endangered, and sensitive species of the Intermountain Region. Intermountain Region, Ogden, Utah.