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APPENDIX E: FOUNDATION STATEMENTS

E.1 EXAMPLES OF HOW ALL ELEMENTS OF A FOUNDATION STATEMENT INTERRELATE

The following abbreviated examples from the Lava Beds National Monument and City of Rocks National Reserve foundation statements illustrates how the purpose, significance, primary interpretive themes, and fundamental resources and values all come together in the analysis of two fundamental resources — caves and the California Trail. The park purpose and significance statement with its associated fundamental resource relating to cave structures and features are identified below.

Lava Beds National Monument

Park Purpose: Lava Beds National Monument protects and interprets volcanic and natural features of scientific interest and evidence of prehistoric and historic human settlement, use, conflicts.

Significance: Lava Beds National Monument protects and interprets the largest concentration of lava tube caves in the continental United States along with its unique environments and cave-dependent species.

Fundamental Resource: Caves.

Fundamental Resource or Value	1.1 Cave structures and features
Importance of the Resources and Values	The monument currently has more than 500 documented significant caves, which have formed in the parks basalt and andisite flows. The caves are products of volcanic processes that characterize the showering vents, rivers of molten rock, collapses and gaseous explosions that once sculpted the surrounding landscape. The park's lava tubes systems and other caves are notable for their: ▪ Abundance ▪ Complexity and lengths of passages ▪ Excellent preservation of primary volcanic features and secondary depositions. Many of the park's caves preserve archeological and historical materials including: Pictographs, remains, artifacts and CCC era developments. Sheltered deposits in caves also contain paleontological materials, along with sediments useful for evaluating past events and paleoclimate.
Current Conditions and Trends	Of the 500+ known significant caves in the park only 20% have had any formalized inventory or survey and even now many of these are out of date with current cave inventory and mapping standards. The potential area of cave development is vast, and there is a great likelihood of many more cave discoveries. Some of the park's significant lava trenches and their associated cave systems are either sourced or meander outside the current park boundary. Future agreement with neighboring federal agencies will have to be made in order to protect these important systems. The park has seen a steady rise in visitation and with it an increase in impacts on caves open and closed to the public. In the future increased monitoring, impact studies, and restoration efforts will have to be undertaken to minimize these impacts on cave resources. Along with mitigation efforts the park will have to increase its efforts to educate the public on resource fragility and light caving techniques. Many visitors lack an understanding of cave development or the sensitive ecologies the caves contain, often resulting in unintended impacts. More callus visitors have left garbage, waist, and graffiti behind and damage sensitive features. Paint guns, geo cashing, off road vehicles, and the ease of which sensitive information can be published are

Fundamental Resource or Value	1.1 Cave structures and features
	all new challenges for the park. Climate change, development in the basin, agricultural practices, and transportation all pose serious challenges for the fragile ecologies of cave systems with in the park. Little is currently known about the parks unique cave and trench microenvironments, or the ecologies of the organism dependant on these stable systems. The effects of drawing down of the local water tables, introduction of petrol chemicals off of paved surfaces, fertilizer, pesticide loading, even air and water quality are still unknown.
Potential Threats	There are many threats to cave resources and their associated features both within and outside the National Monument. As the City of Klamath Falls and the 139 corridor continues to develop the park will begin to see increased impacts from outside and in turn pressures to facilitate a growing visitor base within the monument. The most relevant current threats outside the park are now global climate change, altered plant communities, fire repression, development within the basin and agricultural practices. Agricultural and residential use of herbicide, pesticide, nitrate and fertilizer use still have unknown affects for the park caves. The threat of chemical, waist and fuel spills along road ways either inside or outside the park could have serious consequences. Also the native silence of park caves is often broken by military and commercial over flights and road noise. The silent soundscape is a precious feature of caves. Within the park, future developments to facilitate an increased visitation use could adversely affect cave resources. The resurfacing of roads, expanding campground facilities, and an increase in cave visitation could degrade the park's well-preserved cave resources. Existing infrastructure such as parking lots, broken mains and sewage lines, along with leaking septic and fuel tanks could have dire consequences for cave resources. New and outdated infrastructure both pose potential threat that could introduce pollutants, divert drainage, increase runoff and introduce invasive flora in disturbed areas. The resurfacing of roads and heavy construction equipment may damage underlying cave systems or lead to the collapse of a cave roof. The repair or the development of trail systems in a cave can adversely affect cave resources. These activities disturb natural surfaces, often break irreplaceable formations and alter the natural cave environment. The modifying of entrances can have repercussion though out the rest of the cave. With visitation inevitably comes trampling, breakage and disturbance. Lint off of clothes, hair and dead skin cells rapidly accumulates in dry caves. Litter, tattered remains of shoes and clothes, and the material fallen from pockets. The ill effects of visitation are usually unintended however a few individuals leave a heavier mark on the park. Graffiti, theft, vandalism and littering are not strangers to the park. These impacts are accumulative and can rapidly degrade cave resources. The park staff spends a large amount of time and funds every year cleaning up after a few callus guests. An increase in visitation requires that more time and funds be allocated for monitoring and restorative measures. An increase in visitation may also bring about the greater recurrence of visitors wanting an undeveloped or wilderness cave experiences. Often time cavers notify and work with park staff; however clandestine trips are not unknown. An increase in visitation to the park's little visited backcountry caves will have negative affects on previously unimpaired cave resources. The park has a history of encouraging research and working with interest groups. However, studies within the park can impact cave resources. Collections, visitation and studies can have an accumulative impact on the often pristine cave environments or less visited caves researchers want to visit. These activities require training, oversight on researchers and the implementation of non impairing research methods. Natural events such as earthquakes and volcanic activities also have potential to alter cave resources. FOIA release of sensitive cave data for wide spread distribution is a threat to the protection of cave resources.

Fundamental Resource or Value	1.1 Cave structures and features
Stakeholders	*Local and Regional Organizations:* Cave Research Foundation in supporting the preservation, data collection, and public understanding of the monument's cave resources. Shasta Grotto Speleological Society *National Organizations:* National Speleological Society, Cave Research Foundation, Bat Conservation International *Government Agencies and Tribes:* The Klamath Tribes, United States Geological Survey, Bureau of Reclamation, Modoc National Forest, Klamath National Forest, Shasta-Trinity National Forest, United States Fish & Wildlife
Law and Policies	**Cave Protection** Source: Federal Cave Resources Protection Act of 1988 (FCRPA) NPS *Management Policies 2006; NPS-77: Natural Resources Management Guidelines* Policy Direction: The Park Service manages to perpetuate the natural systems associated with the caves and karst such as drainage patterns, air flows, mineral deposition, and plant and animal communities. Wilderness and cultural resources and values will also be protected.

City of Rocks National Reserve

Purpose

City of Rocks National Reserve was created to preserve through cooperative efforts the scenic qualities and attributes of the California Trail landscape, historic rural setting, and granite features.

City of Rocks National Reserve — Significance Statement 1
As part of the largest overland emigration route in American history, City of Rocks National Reserve preserves the most intact and authentic setting of the California Trail. The trail served as a landmark and critical refuge that inspired numerous written accounts of the landscape.

Primary Interpretive Theme

City of Rocks National Reserve was a major landmark for emigrants traveling along the California Trail. City of Rocks provided rest and inspiration for the many weary travelers who were heading for Granite Pass and ultimately for California or Oregon.

Fundamental Resources and Values Associated with Park Significance Statement 1
1.1) the California Trail remnants and artifacts, such as wagon ruts, inscriptions, and encampments
1.2) the diaries, art, and other written records documenting the experiences and thoughts of emigrants passing through City of Rocks
1.3) the historic vegetation communities (1840-1870) observed by the emigrants
1.4) the geologic formations that provided landmarks and inspiration for the emigrants (e.g., naming of rocks)
1.5) the archives of the national reserve that document the signatures, historic vegetation communities, and emigrant encampments

Analysis of the Fundamental Resource 1.1 — The California Trail	
The California Trail remnants and artifacts, such as wagon ruts, inscriptions, and encampments	
Importance of this Resource	The remnants and artifacts of the California Trail are evidence of a nationally significant event. The preserved resources demonstrate the stories and facts that support the primary interpretive themes of the national reserve. These cultural resources distinguish this national park system unit from the countless miles of trail corridor that no longer provide actual evidence, bolstering their integrity and national significance.

Analysis of the Fundamental Resource 1.1 — The California Trail	
Current Conditions, Trends, and Potential Threats	The California Trail remnants and artifacts, such as wagon ruts, inscriptions, and encampments, are still obvious and recognizable. Theses cultural resources are well documented and investigated with ongoing study and research of the landscape and archeological resources that provide a baseline of information. The associated fundamental resources continue to degrade due to the forces of nature and will not remain into perpetuity, especially signatures and wagon ruts. The potential threats to the California Trail remnants and artifacts, such as wagon ruts, inscriptions, and encampments, include vandalism, cattle grazing, weather and erosion, private land uses, and visitor use impacts.
Stakeholders	State Historic Preservation Office — mission is to document and protect the historic values of Idaho Oregon–California Trail Association — a nonprofit organization advocating for preservation of the trails Access Fund — interested in climbing and recreation issues related to City of Rocks National Reserve
Laws and Policies	**Archeological Resources** *Source:* National Historic Preservation Act; Archeological Resources Protection Act; the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation;* Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (1995); NPS *Management Policies 2001;* NPS "Cultural Resources Management Guideline" (DO-28, 1996) *Policy Direction:* Archeological sites are identified and inventoried and their significance is determined and documented. Archeological sites are protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable. When disturbance or deterioration is unavoidable, the site is professionally documented and excavated and the resulting artifacts, materials, and records are curated and conserved in consultation with the Idaho state historic preservation office (and American Indian tribes if applicable). **Cultural Landscapes** According to the National Park Service's "Cultural Resource Management Guideline" (DO-28), a cultural landscape is *a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions.* *Source:* National Historic Preservation Act of 1966, as amended (16 USC 470); Advisory Council on Historic Preservation's implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800); *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (1996); NPS *Management Policies 2001*; NPS "Cultural Resources Management Guideline" (DO-28, 1996) *Policy Direction:* Cultural landscape inventories are conducted to identify landscapes potentially eligible for listing in the national register and to assist in future management decisions for landscapes and associated resources, both cultural and natural. The management of cultural landscapes focuses on preserving the landscape's physical attributes, biotic systems, and use when that use contributes to its historical significance. The preservation, rehabilitation, restoration, or reconstruction of cultural landscapes is undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guideline's for the Treatment of Cultural Landscapes*. **Historic Structures** *Source:* National Historic Preservation Act; the *Secretary of the Interior's Standards and Guidelines for*

Analysis of the Fundamental Resource 1.1 — The California Trail	
	Archeology and Historic Preservation; *Secretary of the Interior's Standards for the Treatment of Historic Properties*; Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (1995); NPS *Management Policies 2001;* NPS "Cultural Resources Management Guideline" (DO-28, 1996) *Policy Direction:* Historic structures are inventoried and their significance and integrity are evaluated under National Register of Historic Places criteria. The qualities that contribute to the listing or eligibility for listing of historic structures on the national register are protected in accordance with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (unless it is determined through a formal process that disturbance or natural deterioration is unavoidable)

E.1.a Petrified Forest National Park Foundation Statement

Ecosystem: Recovering Native Grassland of the Colorado Plateau and Riparian Areas	
Fundamental Resource/Value	• Diversity of flora and fauna, including shared characteristics of three ecological regions (Great Basin, Sonoran, Great Plains) • Ecological values — structure and composition, function, health, and recovery — owing to the lack of recent grazing relative to other areas of shortgrass prairie • Ephemeral water resources (washes, seeps and springs, tanks, tinajas, depressions) are critically important for flora and fauna • Riparian areas are critically important for refuge and habitat
Importance	• One of the best Arizona short grass, prairies, preserves habitats for a variety of flora and fauna for Colorado Plateau Region; not grazed • Refuge for several animals of concern such as, pronghorn, prairie dogs, milk snakes • Great Basin, Sonoran, Great Plains meet and diversity of flora and fauna. • Limited water resources are ephemeral and important to refuge and habitat (above).
Concerns and Opportunities	• Exotic species invasions, such as Tamarisk threaten the diversity of native plant communities. • Grazing on the park expansion lands alters native short grass prairie communities. Native grasslands could be restored on expansion lands. Restoration of grasslands could mask cultural sites. • Dumpsites, quarries, mines affect natural environments on park expansion lands. • Poaching affects wildlife. • Roads and fences on expansion lands may impede wildlife movements. • There are opportunities for black footed ferret restoration and prairie dogs protection. Expanding transportation corridors affect wildlife by further limiting or preventing movement. Opportunities include wildlife overpasses. • Nonnative elk which have been re-introduced into Arizona are moving into the park, which has not traditionally been elk habitat. • Increasing visitation and recreation demands could affect the grassland ecosystem. • A pronghorn herd is "trapped" between the interstate and the railroad, resulting in a biologically isolated herd. • There are no known federally listed threatened and endangered species or critical habitats within the park. • Sewage lagoons within the park provide an unnatural abundance of water. Wildlife has become dependent on man-made water guzzlers on expansion lands. • Seeps and springs are disappearing due to regional draw down and drought. Large-

Ecosystem: Recovering Native Grassland of the Colorado Plateau and Riparian Areas	
	scale groundwater pumping occurs from the Salt River project, generating stations, which draw from aquifers that lie beneath the park. • Manmade structures and human use can accelerate erosion, cause channelization and gullying, affecting the ecosystem. • The Puerco River corridor has upstream impacts from a uranium mine. It is also a corridor for invasive exotic plants, such as Tamarisk. It has been determined to be eligible as a Wild and Scenic River. There are opportunities to restore the Puerco River corridor. • Outside of the park, there is an underground liquefied petroleum gas (LPG) storage facility that also involves brine used to displace the LPG. The facility operates under a permit from the Arizona Department of Environmental Quality, which monitors aquifers. ADEQ and NPS Geological Resources have found no significant hazards to park resources posed by the plant. • The park has a lack of professional biological staff technicians, wildlife biologists, or botanists. • There is a need for continued inventory and monitoring of biological resources • There is a lack of baseline data regarding water quality.
Trends	• Recovery of grasslands • Disappearance of prairie dogs • Increased visitation – potential increased impacts • Exotic species invasions – increasing • Increase use of the transportation corridors • Development pressure – fractionation of habitats, disruption of migration patterns, demands for scarce water resources.
Stakeholder Interest	• AZ Game and Fish • Researchers/Universities/School groups • Local hunters • Adjacent property owners • Developers • BSNF/ADOT • Tribes • Communities/Counties • Visitors • Landowners within expansion lands have interest in continuing grazing • The concessioner will likely have interest in broadening visitor access and services. • The Bureau of Land Management and the State own lands within the expansion area, and have different missions that affect natural resources.
Relevant Laws and Regulations	• Organic Act • Lacey Act • Endangered Species Act • State Laws (i.e. hunting, water quality) • NPS Management Policies • Wildlife water • Mining Act • Clean Water Act

Ecosystem: Recovering Native Grassland of the Colorado Plateau and Riparian Areas	
	• Wilderness Act • Grazing provision in legislation • EPA polices • National Environmental Policy Act • Wild and Scenic Rivers Act (Puerco River is eligible as a Scenic River)
General Law and Policy Guidance	• The park's ecosystem is health and resilient to stress. Management occurs at multiple levels (local, regional, continental, and global), depending on the need to protect and perpetuate ecological processes. • Hydrological processes are not critically affected by human intervention and water use. These processes sustain riparian and ephemeral ecosystems in good condition, unaffected to any significant extent by human interactions. Water quality contamination levels are low enough to preclude unacceptable stress on ecological systems or processes, or damage to their physical and biological components. • Native shortgrass prairie is restored and sustained to its normal extent, structure, and role in the park's ecological systems. • Nonnative, invasive species are absent in the park's ecosystems, or if present, are effectively controlled. • Disturbance regimes, such as fire, are restored or allowed to proceed unimpeded, taking into account the protection of people and property. • Disruption of ecological systems by NPS management actions or by human actions outside park boundaries are prevented or mitigated to the extent possible.
Management Direction within Law and Policy	• Continue participation in the NPS Natural Resource Challenge, a program under way to establish science-based management in parks. Petrified Forest National Park is part of the Southern Colorado Plateau network, which is charged with helping the parks carry out a vital signs monitoring program. Specific indicators and standards will continue to be developed. Extend the program to expansion lands. • Inventory new park lands for threatened and endangered species and critical habitat. • Determine the impacts of grazing on the shortgrass prairie ecosystem and strive to mitigate or eliminate those impacts and restore the prairie. • Establish baseline information on groundwater levels and quality and determine the present human use and impact on hydrological systems. Work with agencies, local governments, residents, and others to prevent human activities from adversely affecting the hydrologic system. • Inventory, map and monitor riparian areas and ephemeral water sources. • Prepare and keep current a wildland fire management plan (with public involvement) that restores to the extent possible the ecological role of wildland fire as a disturbance regime, protects neighbors, and identifies appropriate actions in coordination with federal, state, and local agencies. • Inventory man- made structures and modifications and remove any of them that do not contribute to the purposes and management of the park. • Develop exotic plant species management area plans for the prevention and control of invasive plants. • Identify those species known to have occupied the monument in the past. Evaluate the feasibility and advisability of reintroducing missing species, and removing those that are not a part of the past ecosystem. • Identify wildlife movement routes and human impediments to movement. Develop mitigation measures and work with federal, state, and local entities and with private landowners and others to protect movement corridors.
Existing Planning Guidance	The 1993 General Management Plan and the 2004 General Management Plan Revision provide overall guidance for the management of natural resources within the original

Ecosystem: Recovering Native Grassland of the Colorado Plateau and Riparian Areas	
	national park boundaries. • Continue recovery of shortgrass prairie. • Consult with U.S. Fish and Wildlife Service to consider the feasibility of re-introducing the black-footed ferret. • Survey for threatened and endangered species. • Develop and implement a fire management plan. • Develop a resource management plan to expand site evaluation and monitoring. • Conduct a rare plant survey. • Prepare a hazardous materials plan. • Protect sewage lagoons near Rainbow Forest from floods. • Management zoning describes basic protection of natural resources, by area, within the original park boundary.
Planning Needs	• Develop a resource stewardship strategy • Extend management zoning to expansion lands
Data and Analysis Needs	• Inventory of health of shortgrass prairie ecosystem on expansion lands • Inventory of hydrological resources on expansion lands. • Inventory of threatened and endangered species on expansion lands.

E.2 Considerations for Identifying Important Cultural Resources and Values

Are the cultural resources listed on or eligible for listing on the National Register of Historic Places or as a national historic landmark?

- National historic landmarks should always be addressed in planning, whether as fundamental resources or as "other important" resources.
- Historic/cultural units of the national park system are automatically listed on the National Register of Historic Places, and many of the cultural resources within these units are likely to be "fundamental resources and values," and many could be "other important resources and values."
    - In these parks, "non-fundamental" resources and values that may be associated/affiliated with or provide support to the fundamental resources and values are most likely to be considered "other important resources and values."
- Park units that have been created for their natural resource values may not necessarily include cultural resources in their "fundamental resources and values," unless these resources are specifically identified in the park's establishing legislation. These parks may, on the other hand, contain "other important resources and values" that are cultural resources that are listed or may be eligible for listing on the National Register

Are there strong support groups? For example,

- Are there traditionally associated peoples related to these cultural resources?
- Is there strong local and/or state political, social, or other sentiment for these cultural resources?

- Would controversy occur if these resources did not receive planning attention?

Is there a specific or critical planning issue that needs to be resolved?

For listing on the National Register of Historic Places, either a property is significant or it is not. The local, state, and national levels of significance refer to the contexts within which a cultural resource is significant. The local, state, national distinctions are not hierarchical levels of significance such as minimal, moderate, high significance (these concepts do not exist in the national register program). The National Register of Historic Places is seen as a planning tool by identifying those properties that are significant and worthy of preservation/ protection. How we preserve/protect/manage these properties is based on numerous other factors, not on any hierarchy of significance. See the *National Register Bulletin*, "How to Apply the National Register Criteria of Evaluation," chapter V, for more information (www.cr.nps.gov/nr/publications/bulletins/nrb15/nrb15_5.htm).

E.3 EXAMPLES OF SPECIAL MANDATES

Not a Special Mandate	Special Mandate
Colorado National Monument has seven historic properties that are listed in the National Register of Historic Places, along with several others that have been determined formally to be eligible. These properties are protected in accordance with the *Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation.*	Sand Dunes National Preserve, adjacent to Great Sand Dunes National Park: Hunting, fishing, and trapping shall generally be permitted on land and water within the preserve in accordance with applicable federal and state laws. Areas may be designated where, and limited periods established when, no hunting, fishing, and trapping are permitted for reasons of public safety, administration, or compliance with applicable law (Great Sand Dunes Act of 2000).
Big Dry Desert National Park's airshed is designated "class I" by federal standards.	Petrified Forest National Wilderness Area was one of the first designated wilderness areas in the national park system. It was designated by Congress on 23 October 1970 (84 Stat. 1105). The wilderness area within Petrified Forest National Park is composed of 50,260 acres (about 54% of the park) and consists of two separate units. The Painted Desert unit in the northern segment of the park comprises 43,020 acres, and the Rainbow Forest unit in the southeast segment of the park comprises 7,240 acres.
Colorado National Monument currently allows the Rim Rock Run, a foot race conducted in the fall along Rim Rock Drive under a permit. Requests for such activities are considered on a case-by-case basis.	A May 1986 court order settled a dispute about right-of-way through the monument on the eastern segment of Rim Rock Drive in Colorado National Monument. It determined that a public right-of-way exists on this segment and the use of that road for continuous travel through the monument is a nonrecreational use (including commercial traffic), for which no fee can be charged.
Friends of Big Dry Desert National Park is a not-for-profit organization that provides volunteers and raises money for park scientific research and education.	The Secretary of Interior has responsibility for establishing a "Great Sand Dunes Advisory Council." The council is to advise the Secretary with respect to preparation and implementation of a general management plan for the national park and preserve. (Great Sand Dunes Act of 2000).

Notes about the above examples:

- Properties on the National Register of Historic Places are not considered a special mandate unless there is some unusual specific legislation relating to these resources in a particular park. Typically, they are addressed as fundamental or other important resources if they meet those standards, or they may be addressed more generally under the servicewide legal and policy requirements. Air quality and endangered species are similarly treated.
- Hunting within Great Sand Dunes National Preserve is allowed by legislation, so it is listed as a special mandate, not a purpose. Hunting was a legislative compromise that led to the designation of part of the expansion lands as a "national preserve" rather than a "national park"; it is not a purpose for which the park and preserve were created.
- There is no long-term agreement to continue the Rim Rock Run; it is subject to renewal of a permit. Therefore, it is not considered a special mandate. The court-ordered right-of-way is a strong mandate.

E.4 Example of Resources and Values Considered but Determined Not to Be Fundamental to the Purpose of the Park

Example identifying what is not fundamental to help reach consensus about what is fundamental.

Visitor Opportunities at Great Sand Dunes		
Significance	**Fundamental Resources/Values**	**Considered but Not Fundamental**
Provides tremendous scenic settings that, for many, provoke strong emotional responses. These settings (including massive dunes surrounded by alpine peaks, a desert valley, creeks flowing on the surface of the sand, pristine mountains, and rural rangeland) offer spacious relief from urban America, exceptional opportunities for solitude and quiet, and a remarkably unspoiled day and night sky. Provides special opportunities for recreation, exploration, and education in the highly resilient dune mass and adjoining creek environments.	The Great Sand Dunes are attractive, inviting, and approachable. These qualities and certain inspirational, recreational, and educational opportunities must be managed and protected to maintain the park's purpose and significance: • Climbing and descending the high dunes • Experiencing surge flow, playing in Medano Creek near the dunes • Seeing the heavens (Milky Way, stars planets, comets, etc.), dark night skies must be protected • Viewing the dune mass with the backdrop of the high peaks and from the mountains. Key elements: views from west and south, viewing the dunes from the mountains, changing light conditions. Shadow and contrast especially impressive in early morning and evening. Air quality and undeveloped mountain slopes must be protected. • Seeing wildlife in its natural setting (e.g., elk, pronghorn, deer), important habitat must be protected. • Learning about the dunes system – its components and dynamic nature. Includes research, education, and stewardship opportunities. • Experiencing quiet, solitude, isolation in a wilderness environment • Driving on the sand on the Medano Pass backcountry road (high-clearance four-wheel-drive vehicle required)	The high country wilderness experience is wonderful, but is not peculiar to the Great Sand dunes, and it is probably not critical to maintaining the purpose and significance. The high country was added to the park to protect the Sand and Medano Creek watersheds. Other opportunities that were determined not to be critical to maintaining the park's purpose and significance include mountain hiking, fishing and hunting, and backcountry camping.

E.5 EXAMPLE OF ANALYSIS OF OTHER IMPORTANT RESOURCES AND VALUES

Petrified Forest National Park: Painted Desert Headquarters Complex	
Importance	The Painted Desert Headquarters Complex is eligible for the National Register of Historic Places. Renowned architects Richard Neutra and Robert Alexander created a modern planned community for visitors and NPS staff. Illustrates Mission '66.
Current State and Related Trends	Structural problems resulting from poor construction, inadequate repairs, and altered stormwater drainage problems. Staff needs improved workspace that meets current codes, visitor center needs to be improved, need for curatorial space.
Potential Future Threats	1993 GMP did not recognize the historic significance of the property and proposed demolition and relocation of headquarters to a new site. Piecemeal maintenance, if continued, may not keep up with deterioration.
Stakeholder Interest	AIA and architects nationwide interested in the works of Richard Neutra and this particular work. Arizona SHPO very interested in preserving modernism architecture, and this complex in particular.
Law and Policy Guidance	National Historic Preservation Act of 1966, as amended (16 USC 470). Advisory Council on Historic Preservation's implementing regulations for the "Protection of Historic Properties" (36 CFR 800). Section 110 of the National Historic Preservation Act and the *Secretary of the Interior's Standards and Guidelines for Federal Agency Preservation Programs Pursuant to the National Historic Preservation Act.* *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* "Memorandum of Agreement among the National Park Service, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers" (1995). NPS *Cultural Resources Management Guideline* (DO-28, 1998) Condition per NPS policy: The qualities of the complex that contribute to its eligibility for listing on the national register are protected in accordance with the *Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation*, unless it is determined through a formal process that disturbance or natural deterioration is unavoidable. Management direction (with or without a GMP): Continue to maintain and repair the structures in accordance with the *Secretary's Standards* and in consultation with the SHPO. Policy level issues (may be GMP-level issues) Whether or not to invest in improving the complex to meet the needs of visitors and park staff, or replace the complex with new structures
Assessment of Information	Needed information: Condition assessments of the complex Inventory of existing space and future space needs for visitors and staff Historic structures report if decision is to retain complex.

E.6 Example Demonstrating the Relationship between Significance Statements and Primary Interpretive Themes

The following diagram illustrates the development of theme "A" from the content of four significance statements. Note the overlap and recombination of content when translating factually formatted significance statements into story-based theme statements. This set of primary interpretive themes was not only developed based on theme-writing principles that are stated above, but also on these additional, specific premises.

Each theme is the essence of a story used to help visitors explore the multiple meanings of resources. These themes represent abstractions of the actual stories, the details of which form the content of the resulting interpretive services.

Each theme incorporates universal concepts: large ideas that mean something to everyone, though not necessarily the same thing to everyone.

Each is stated as a single sentence that includes tangible and intangible elements. Within the sentence structure itself, content often tends to progress from tangible resources to intangible resources to universal concepts.

Tangible and Intangible Heritage Resources of Hawai'i Volcanoes National Park	
Set of Significance Statements	**Set of Primary Interpretive Themes**
Hawai'i Volcanoes National Park features Mauna Loa and Kilauea, two of the most active volcanoes in the world. Mauna Loa — measured from its base deep beneath the surface of the sea to its peak — contains more material by volume than any other mountain on Earth	The approachable, active volcanoes of Hawai'i Volcanoes National Park allow first-hand discovery of and connection with one of the most fundamental forces of our world — in both its creative and destructive roles.
The unusually high degree of approachability to the park's active volcanism affords opportunities for fundamental and detailed research not duplicated (or even approached) in any other park in the world, offering relatively safe experiences with lava flows, fountains, and other products of active volcanism. The long history and collaborative nature of the research performed by the USGS Hawai'i Volcano Observatory and others at Hawai'i Volcanoes National Park have made Mauna Loa and Kilauea among the most studied and best understood volcanoes in the world.	The journeys of the Hawaiian people, who continue to inhabit these rich and diverse lands, include cultural clashes, adaptations, and assimilations that provide enduring lessons about human resourcefulness, interdependence, and respect for the life of the land.
Hawai'i Volcanoes National Park provides critical living space in a wide variety of ecological zones for the highly endemic native biota, much of which is threatened or endangered, requiring active management of native and non-native species. The diversity and importance of the cultural resources in Hawai'i Volcanoes National Park — and the protection of natural features and processes afforded by national park status — combine to make Hawai'i Volcanoes critically important to the perpetuation of traditional native Hawaiian religion and culture.	In Hawai'i, active volcanism created an isolated home for a few immigrant species that gave rise to a rich yet fragile endemic biota; due to the accelerating change brought about by human actions, much of that unique heritage continues to be lost to extinction, challenging all of us to learn from the past and work together to preserve the remaining native plants and animals.
Hawai'i Volcanoes National Park encompasses the largest expanse of Hawaiian natural environment managed as wilderness, with the associated wilderness values of natural sounds, lack of mechanization and development, natural darkness, and opportunities for solitude.	Kilauea, the home of Pele, is sacred to many Native Hawaiians: it is a place of birth and the well-spring of many spirits and forces; the active volcanism, the features of the terrain, and the plants and animals that live there are all important to Native Hawaiian sense of identity, unity, and continuity.
The park's resources are so rare, valuable, and inspirational to all the people of the world that the United Nations has declared the park an International Biosphere Reserve and a World Heritage Site.	Hawai'i Volcanoes National Park provides an opportunity for people to experience the values of Hawai'i's diverse wilderness; the park's designation as a World Heritage Site and International Biosphere Reserve attests to its importance as a benchmark for monitoring
Hawai'i Volcanoes National Park protects the most extensive tract of protected montane tropical rain forest in the National Park Service.	

E.7 EXAMPLES OF SERVICEWIDE LEGAL AND POLICY REQUIREMENTS

Example 1: List the laws and policies, then management action and direction in a table

Dry Tortugas National Park	
Law or Policy	**Management Direction / Action**
Endangered Species Act of 1973 Migratory Bird Conservation Act of 1929 Fish and Wildlife Coordination Act of 1958 Marine Mammal Protection Act of 1972 NPS *Management Policies* *NPS-77: Natural Resources Management Guideline*	Policies and guidelines for natural resource direct that the park must • Identify and complete the inventories of natural resources for baseline information. • Maintain and protect the natural ecological processes occurring in the Dry Tortugas and its immediate environs. • Minimize impacts of human activities, developments, and uses on marine and terrestrial resources. • Establish systems to monitor the condition of key natural resources and to identify and monitor threats to those resources. • Continue to close areas of the park to protect birds and turtles during mating season. • Manage endangered, threatened, and candidate species.
36 CFR 1.5, 1.6, 1.10, 2.1, 2.2, 2.3, 2.4, 2.5	CFR Title 36 provides authorization for • Closing areas and limiting public use to protect resources • Prohibiting the destruction, defacing, or disturbance of resources • Protecting fish and wildlife and permitting research

Example 2: List the topic, then generically how laws and policies are applied in a table

Petrified Forest National Park	
Topic	**Current Laws and Policies Require that the Following Conditions Be Achieved**
Visitor Experience and Understanding	Visitor and employee safety and health are protected. Visitors understand and appreciate park values and resources and have the information necessary to adapt to the national park environments. Visitors have opportunities to enjoy the park in ways that leave resources unimpaired for future generations. Recreational uses are promoted and regulated. Basic visitor needs are met in keeping with park purposes. To the extent feasible, facilities, programs, and services in the park are accessible to and usable by all people, including those with disabilities.

Example 3: Put applicable laws and policies in a list in an appendix

Note: In this example, management strategies for fundamental resources and values that are guided by laws and policies were discussed in the front of the document, without citing specific laws and policies. This appendix was provided as a reference to authorities.

Colorado National Monument
Cultural Resources
American Indian Religious Freedom Act of 1978 (42 USC 1996)
Archeological Resources Protection Act of 1979 (16 USC 470)
Advisory Council on Historic Preservation's implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
National Historic Preservation Act, section 110, and the *Secretary of the Interior's Standards and Guidelines for Federal Agency Preservation Programs Pursuant to the National Historic Preservation Act*
Executive Order 13007, May 24, 1996, Indian Sacred Sites
Indian Self-Determination and Education Assistance Act of 1975 (25 USC 450-451n, 455-458e)
Memorandum of Agreement among the NPS, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (1995)
Museum Properties Act of 1955
National Historic Preservation Act of 1966, as amended (16 USC 470)
National Park Service's Cultural Resources Management Guideline (Director's Order 28, 1998)
National Park Service's Museum Handbook
Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001-3013)
Presidential Memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments
Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation

Example 4: Narrative description of how most resources are managed within applicable law and policy

Zion National Park
Air Quality
Zion National Park is designated a class I area under the Clean Air Act. This designation allows air quality characteristics, including visibility, to be degraded the least, compared to other Clean Air Act designations.
Desired Conditions: Zion's class I air quality is maintained or enhanced with no significant degradation. Nearly unimpaired views of the landscape both within and outside the park are present. Scenic views, which are integral to the visitor experience and have been identified in the park as per the Clean Air Act, are substantially unimpaired. For example, Mt. Trumbull and the Kaibab Plateau, both over 50 miles away in northern Arizona, can usually be seen from Lava Point. Park staff carry out prescribed fires to replicate ecological conditions and/or reduce dangerous fuel loading, in a manner that minimizes local effects to visibility from smoke production.
Strategies: The National Park Service would continue to work with appropriate state and federal government agencies, industries, nearby communities, land managers, the Southwest Utah Planning Authorities Council (SUPAC), the Utah Division of Air Quality, and the Western Regional Air Partnership to maintain park and regional air quality.
Park staff and other scientists would inventory and monitor air quality in the park to gain baseline data and to measure any significant changes (improvement or deterioration) to Zion's airshed. This would include a complete inventory of in-park emission sources, as well as those in the immediate vicinity of the park.
The Park Service would review, comment on, and recommend actions to minimize or reduce emissions from sources being proposed within 64 miles (100 kilometers) of Zion.
Park managers also would attempt to minimize the effects of in-park pollution sources on air quality. For example, emissions from burning wood in campgrounds and residences may be reduced by establishing nonburn days or by banning wood-burning stoves.