



National Park Service  
U.S. Department of the Interior  
Timpanogos Cave National Monument  
American Fork, Utah

# Install New Electrical Line Environmental Assessment

April 2009





# **Install New Electrical Line**

---

## **Environmental Assessment**

### **Summary**

The National Park Service is proposing to install a new electrical line at the Timpanogos Cave National Monument (Monument) that would supply more dependable electrical power to the caves. The current condition of the existing electrical lines/poles is so poor that PacifiCorp (doing business as Rocky Mountain Power) can no longer safely maintain them, thereby increasing the potential for more frequent and severe power outages and possibly a failure to the system that could cause the caves in the Monument to lose electrical power altogether. In addition, the caves have only radio communication which is less dependable than a hard land line telephone. Therefore, this project is needed to 1) maintain consistent and dependable electrical power to the caves, 2) improve safety and accessibility of the power line, and 3) provide a dependable telephone system at the caves, and 4) provide a solution that minimizes impacts to park resources.

This Environmental Assessment evaluates two alternatives: a no action alternative and an action alternative. The no action alternative is the current situation, and is primarily used as a baseline assessment from which to analyze the action alternative. The action alternative would reduce the total number of pole/anchor locations from eight to three and would install a new fiber optic cable to provide telephone capability to the caves in addition to electrical power. The eight existing poles and power lines would be removed and those areas would be rehabilitated, as needed. The proposed new electrical line would be constructed with a conductor (wire) manufactured with internal fiber optic strands that are intended to be used for telephone/communication service. The telephone line would be used to upgrade the security system for the cave. Because the proposed line would begin at a disturbed quarry site in the Uinta-Wasatch-Cache National Forest and then enter the Monument for the remainder of its run up to the caves, NPS is working in cooperation with the U.S. Forest Service on this project.

This Environmental Assessment has been prepared in compliance with the National Environmental Policy Act (NEPA) to provide the decision-making framework that 1) analyzes a reasonable range of alternatives to meet objectives of the proposal, 2) evaluates potential issues and impacts to Monument's resources and values, and 3) identifies mitigation measures to lessen the degree or extent of these impacts. Resource topics included in this document because the resultant impacts may be greater-than-minor include geology and soils; visitor use and experience; and park operations. All other resource topics were dismissed because the project would result in negligible or minor effects to those resources. No major effects are anticipated as a result of this project. Public scoping was conducted to assist with the development of this document and comments were received, mostly in support of the proposed project.

### **Public Comment**

If you wish to comment on the Environmental Assessment, you may post comments online at <http://parkplanning.nps.gov/tica> or mail comments to: Superintendent; Timpanogos Cave National Monument, R.R. 3 Box 200, American Fork, Utah 84003. This Environmental Assessment will be on public review for 30 days. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. Although you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

# TABLE OF CONTENTS

|   |           |
|---|-----------|
| <b>PURPOSE AND NEED .....</b>   | <b>3</b>  |
| Introduction.....   | 3         |
| Purpose and Need .....  | 3         |
| Relationship to Other Plans and Policies .....                          | 4         |
| Appropriate Use .....   | 4         |
| Scoping .....   | 5         |
| <b>Impact Topics Retained for Further Analysis .....</b>                | <b>5</b>  |
| Geology and Soils.....  | 6         |
| Cave Resources .....  | 6         |
| Visitor Use and Experience.....   | 7         |
| Park Operations.....  | 7         |
| <b>Impact Topics Dismissed From Further Analysis.....</b>               | <b>8</b>  |
| Vegetation .....  | 8         |
| Wildlife.....   | 9         |
| Special Status Species .....  | 10        |
| Water Resources.....  | 10        |
| Wetlands .....  | 11        |
| Floodplains .....   | 11        |
| Wilderness .....  | 11        |
| Air Quality .....   | 12        |
| Soundscape Management .....   | 12        |
| Lightscape Management .....   | 13        |
| Historic Structures .....   | 13        |
| Archeological Resources .....   | 14        |
| Ethnographic Resources.....   | 14        |
| Cultural Landscapes.....  | 14        |
| Museum Collections.....   | 15        |
| Socioeconomics.....   | 15        |
| Prime and Unique Farmlands .....  | 15        |
| Environmental Justice .....   | 16        |
| <b>ALTERNATIVES .....</b>   | <b>17</b> |
| <b>Alternatives Carried Forward.....</b>                                | <b>17</b> |
| Alternative A – No Action .....   | 17        |
| Alternative B – Install New Electrical Line .....                       | 17        |
| <b>Mitigation Measures.....</b>   | <b>21</b> |
| <b>Alternatives Considered and Dismissed.....</b>                       | <b>22</b> |
| <b>Alternative Summaries .....</b>                                      | <b>24</b> |
| <b>Identification of the Environmentally Preferred Alternative.....</b> | <b>25</b> |
| <b>Selection of the Preferred Alternative .....</b>                     | <b>26</b> |
| <b>ENVIRONMENTAL CONSEQUENCES.....</b>                                  | <b>27</b> |

|  |           |
|--|-----------|
| <b>Cumulative Effects .....</b>  | <b>27</b> |
| <b>Impairment .....</b>  | <b>28</b> |
| <b>Unacceptable Impacts .....</b>  | <b>28</b> |
| <b>Geology and Soils .....</b>   | <b>29</b> |
| Intensity Level Definitions .....  | 29        |
| Impacts of Alternative A - No Action .....   | 29        |
| Impacts of Alternative B (Preferred) - Install New Electrical Line.....                      | 30        |
| <b>Cave Resources.....</b>   | <b>31</b> |
| Intensity Level Definitions .....  | 31        |
| Impacts of Alternative A - No Action .....   | 31        |
| Impacts of Alternative B (Preferred) - Install New Electrical Line.....                      | 32        |
| <b>Visitor Use and Experience.....</b>   | <b>33</b> |
| Intensity Level Definitions .....  | 33        |
| Impacts of Alternative A - No Action .....   | 33        |
| Impacts of Alternative B (Preferred) - Install New Electrical Line.....                      | 34        |
| <b>Park Operations.....</b>  | <b>35</b> |
| Intensity Level Definitions .....  | 35        |
| Impacts of Alternative A - No Action .....   | 35        |
| Impacts of Alternative B (Preferred) - Install New Electrical Line.....                      | 36        |
| <b>CONSULTATION AND COORDINATION.....</b>  | <b>37</b> |
| <b>Internal Scoping .....</b>  | <b>37</b> |
| <b>External Scoping .....</b>  | <b>37</b> |
| <b>Environmental Assessment Review and List of Recipients .....</b>                          | <b>37</b> |
| <b>List of Preparers .....</b>   | <b>38</b> |
| <b>REFERENCES .....</b>  | <b>39</b> |
| <b>LIST OF TABLES</b>  |           |
| Table 1 – Summary of Alternatives and How Each Alternative Meets Project Objectives.....     | 24        |
| Table 2 – Environmental Impact Summary by Alternative.....                                   | 25        |
| <b>LIST OF FIGURES</b>   |           |
| Figure 1 – Alternatives A (No Action) and B (Install New Line).....                          | 19        |
| Figure 2 – Option 1 (Surface Cable Installation) and Option 2 (Cave Cable Installation)..... | 20        |
| Figure 3 – Alternative Locations Dismissed from Further Consideration.....                   | 23        |

# PURPOSE AND NEED

## Introduction

Timpanogos Cave National Monument (Monument) is situated in the Wasatch Mountains in northern Utah, approximately 30 miles south of Salt Lake City. The Monument was established October 14, 1922 (42 STAT 2285) when President Harding signed a proclamation creating the Monument under the 1906 Antiquities Act. The proclamation directs the park to preserve and protect the unusual scientific interest of the cave and to assure preservation of national resources of scientific interest and importance in such manner as serves the public interest.

The purpose of this Environmental Assessment is to examine the environmental impacts associated with the proposal to install a new electrical line at the Monument that would supply more dependable electrical power to the caves. The proposed action would remove the existing power poles and cable, and replace them with new poles and a conductor (wire) that provides both electrical power and telephone capability. This Environmental Assessment was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 CFR §1508.9), and the National Park Service Director's Order (DO)-12 (*Conservation Planning, Environmental Impact Analysis, and Decision-Making*).

## Purpose and Need

Currently, there are eight wooden power poles situated within the Monument that supply electricity to Timpanogos Cave, which provides lighting and other electrical needs for cave tours. The current condition of the poles is so poor that the power company can no longer safely maintain the line, which increases the potential for a failure to the system and for the Monument to lose electrical power altogether. Therefore, the purpose of the project is to supply dependable, safe, and accessible electrical power and telephone communication to the caves in the Monument.

Rocky Mountain Power Company maintains the poles and the electrical line; however, several factors have made this routine maintenance difficult, unsafe, and/or impossible:

- The poles are old -- dating back to the 1960s and earlier -- and the wood is rotting, which makes it unsafe for Rocky Mountain power employees to maintain the electrical line. Normally, employees from the power company climb the poles to service the line; however, the condition of the wooden poles has deteriorated to a point where it is not possible for the power company employees to secure proper footing or a harness to be able to safely climb the poles.
- The majority of the poles—specifically the top four-- are situated on steep cliffs or in high rockfall areas, and these locations are difficult for the power company to access and maintain.
- One pole is near the point of collapsing and is currently being suspended by ropes. The power company will not permit its employees to access or maintain this pole due to safety hazards.
- Winter access creates even more safety hazards and accessibility issues. Snow can block access to the base of the poles and ice creates slippery conditions further preventing the power company employees from climbing the poles.

- In addition to the deteriorating condition of the poles, the cable that strings between the poles is deteriorating. In particular, the cable from the last pole to the cave entrance crosses an avalanche/rock chute and receives heavy weather damage and following a series of heavy storm events in 2006, the conduit was broken leaving the electrical line exposed but unbroken. Following this event, repairs were completed to temporarily sustain the line.

In addition, there is no dependable phone system available at the caves. Rangers depend upon spotty cellular phone and radio service to provide communications from the caves to the visitor center and administrative offices 1,200 vertical feet below.

Based on this information, the project is needed to accomplish the following objectives:

1. Maintain consistent and dependable electrical power to the caves
2. Improve accessibility of the power line so it can be safely maintained.
3. Provide a dependable telephone system at the caves.
4. Provide a solution that minimizes impacts to park resources and will not result in unacceptable impacts or impairment to these resources.

## Relationship to Other Plans and Policies

The proposal to install a new electrical line at the Monument is consistent with the goals and objectives of the *National Park Service Management Policies* (NPS 2006) that state that major park facilities within park boundaries should be located so as to minimize impacts to park resources. The proposed site of the new power line was identified to minimize harm to park resources.

This proposal is consistent with previous planning efforts for the Monument including the *General Management Plan* (NPS 1992) which recommends that the monument continue to be used for day-use specifically maintaining the cave for visitor use. The GMP recommended that tours continue to occur at a maximum of 20 people per tour, with six tours per hour (10 minute intervals).

Timpanogos Cave currently has a *Cave Management Plan*, which was written in 1993. This document outlines and emphasizes the need for providing a safe environment for cave tours, reinforcing the 20 person per tour limit. The document outlines the layout of the current electrical system with the power cable entering the cave system through the Middle Cave Entrance with the primary power bank in the Big Room of Middle Cave. The Cave Management Plan also addressed the necessity of supporting a security alarm system that protects not only the ranger areas but most importantly the cave system from vandals. Additionally, the document describes that the electrical system supports an automatic pump system. This system allows water to be pumped from the caves should lake levels exceed the height of the tourist trail and electrical lights.

This proposal is directly mentioned in the *First Annual Centennial Strategy for Timpanogos Cave National Monument* (NPS 2007). This document provides a vision for the Monument to protect cave resources and to provide visitor enjoyment by providing outreach, education, electronic media, brochures, partnerships, and a new power supply to the cave.

## Appropriate Use

Sections 1.4 and 1.5 of *Management Policies* (NPS 2006) direct that the National Park Service must ensure that park uses that are allowed would not cause impairment of, or unacceptable impacts

on, park resources and values. A new form of park use may be allowed within a park only after a determination has been made in the professional judgment of the park manager that it will not result in unacceptable impacts.

Section 8.1.2 of *Management Policies, Process for Determining Appropriate Uses*, provides evaluation factors for determining appropriate uses. All proposals for park uses are evaluated for:

- consistency with applicable laws, executive orders, regulations, and policies;
- consistency with existing plans for public use and resource management;
- actual and potential effects on park resources and values;
- total costs to the service; and
- whether the public interest will be served.

Park managers must continually monitor all park uses to prevent unanticipated and unacceptable impacts. If unanticipated and unacceptable impacts emerge, the park manager must engage in a thoughtful, deliberate process to further manage or constrain the use, or discontinue it. More information on the definition of unacceptable impacts as cited in §1.4.7.1 of *Management Policies* can be found in the *Environmental Consequences* chapter.

Supplying electricity and telephone communication is a common and vital function at most park units. Proper location, sizing, as well as construction materials and methods for the new replacement power line would ensure that unacceptable impacts to park resources and values would not occur. The proposal is consistent with the park's general management plan and other related park plans. With this in mind, the NPS finds that replacement of the old power line and installing a new one is an acceptable use at Timpanogos Cave National Monument.

## Scoping

Scoping is a process to identify the resources that may be affected by a project proposal, and to explore possible alternative ways of achieving the proposal while minimizing adverse impacts. The Monument conducted both internal scoping with appropriate National Park Service staff and external scoping with the public and interested/affected groups and agencies. Internal scoping was conducted by an interdisciplinary team of professionals from Timpanogos Cave National Monument and the National Park Service Intermountain Regional Office in December 2008. More on internal scoping can be found in *Consultation and Coordination*.

For external scoping, the Monument mailed a letter and issued a press release to inform the public of the proposal to install a new electrical line. There are no tribes affiliated with the Monument, so tribal consultation was not conducted. During external scoping, the Monument received a total of four responses, most of them in support of constructing the new electrical line. One comment from the Department of Transportation suggested specifics about the location of the power line in relation to the road. More on external scoping can be found in *Comments and Coordination*.

## Impact Topics Retained for Further Analysis

Impact topics for this project have been identified on the basis of federal laws, regulations, and orders; 2006 *Management Policies*; and National Park Service knowledge of resources at Timpanogos Cave National Monument. Impact topics that are carried forward for further analysis in this Environmental Assessment are listed below along with the reasons why the impact topic is



further analyzed. For each of these topics, the following text also describes the existing setting or baseline conditions (i.e. affected environment) within the project area. This information will be used to analyze impacts against the current conditions of the project area in the *Environmental Consequences* chapter.

## Geology and Soils

According to the National Park Service's 2006 *Management Policies*, the National Park Service will preserve and protect geologic resources and features from adverse effects of human activity, while allowing natural processes to continue (NPS 2006). These policies also state that the National Park Service will strive to understand and preserve the soil resources of park units and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources.

The existing power line ascends the mountain with poles in all seven geologic layers of the monument. The canyon floor and the first poles are situated in the Mutual Quartzite and the top most poles in the Deseret Limestone. The series of eight poles ascend the slopes with several poles currently in talus slopes and rockfall zones and located in hazardous rock zones (McNeil, 2002). These ravines support rock debris and soils. Natural rock erosion and regular avalanche activity sculpt the topography of the Monument and provide challenging terrain for supporting power poles. Because there is potential for disturbance of geologic features with the placement of power poles, this topic has been retained for further analysis in the remainder of this document.

## Cave Resources

According to the National Park Service's 2006 *Management Policies*, the National Park Service will manage caves in accordance with approved cave management plans to perpetuate the natural systems associated with the caves, such as karst and other drainage patterns, air flows, mineral deposition, and plant and animal communities. The Federal Cave Resource Protection Act of 1988 states that federal agencies shall secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people.

The Timpanogos Cave System consists of three natural caves- Hansen, Middle, and Timpanogos Cave joined through man-made tunnels- in an alpine cave setting. These caves contain an unusually larger variety, unique coloration in the formations, and an unusual combination of delicate helictites and anthodites in quantities not found in other National Park Service managed caves. The caves have also experienced a unique history in that the discovery of the Timpanogos Cave System and subsequent mining and destruction of cave formations in Hansen Cave lead to the establishment of a citizen conservation organization focused on preservation of the caves, their place in history, and future recreation in American Fork Canyon, Utah, and the nation. Unusual efforts by the citizens lead to the request to preserve the caves being realized by Presidential Proclamation in approximately 30 days. Visitors are permitted to view the three caves on guided cave tours. The electrically lit trail within the cave enables people to see what would be the naturally dark caves. The power line will connect to the current cave electrical system and enter the cave via either the Middle Cave entrance or the Hansen Cave entrance potentially impacting cave resources, therefore; the topic of cave resources has been carried forward for further analysis in this document.

## Visitor Use and Experience

According to 2006 *Management Policies*, the enjoyment of park resources and values by people is part of the fundamental purpose of all park units (NPS 2006). The National Park Service is committed to providing appropriate, high quality opportunities for visitors to enjoy the parks, and will maintain within the parks an atmosphere that is open, inviting, and accessible to every segment of society. Further, the National Park Service will provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the parks. The National Park Service 2006 *Management Policies* also state that scenic views and visual resources are considered highly valued associated characteristics that the National Park Service should strive to protect (NPS 2006).

Visitation to Timpanogos Cave National Monument has been consistent in the past ten years. In 2008, an estimated 126,221 visitors came to the park with 77,642 touring the caves. The caves were opened to visitors in 1922 and although tour numbers have fluctuated over the decades, visitor numbers for tours have remained between 70,000 and 80,000 in the last twenty years. Due to weather, avalanche conditions, and the location of the caves, tours are only offered between early May and mid October when at that time, the trail is also closed for visitor safety.

The Timpanogos Cave System is located at 6,730 feet, more than a thousand feet above the Visitor Center and parking area. Access to the caves requires walking approximately 1.5 miles up the mountain. The access trail to the caves is approximately 3.5 feet wide and vehicular access is limited to NPS trail bikes and equipment.

Caves are naturally totally dark. The current electrical system allows visitors to pass into the cave entrances and view the caves in a safely lighted environment. Electrical service is necessary for allowing tours to continue at its current rate and to meet the steady demand for tours

The current power line ascends the mountain crossing the trail in multiple locations. It passes over the access trail near the mid-point, the exit trail, crossing the ridgelines before entering the caves through the Middle Cave entrance, above the trail restroom. The power poles follow the drainages up the mountain, several being camouflaged by Douglas and White fir trees and the upper most pole sitting on the skyline.

By reducing the number of poles and altering their locations, the proposed project would modify the visual setting of the project area for the long-term to a measurable degree. Construction noise, dust, and trail closures would adversely impact visitor enjoyment on a temporary basis. For these reasons, this topic is carried forward for further analysis.

## Park Operations

The caves are open for visitation from May to October. During that time, there are approximately 50 people on staff with 20-25 conducting tours through the caves and approximately 5-10 resource and maintenance employees visiting the caves daily. Employees hike to the caves and spend an entire shift in and around the caves. Lighting is critical for enabling staff and visitors to see and visit the cave system. The Ranger Room and storage are also located near the tourist entrance to the caves and provide a staging area for employees.

The Monument currently relies on narrowband radios for communication with administrative staff and the Visitor Center where tour tickets are sold. Although this generally is adequate, it hinders

staff from communicating sensitive information and limits conversations regarding safety and security.

Power company employees currently monitor the power lines on an irregular schedule, visiting on an as-needed basis. Access to the line involves traversing steep cliffs and talus slopes. The hazardous state of several poles and to protect employee safety has caused Rocky Mountain power to cease maintenance on those poles. All eight poles are located in areas that power company employees cannot safely access in the winter therefore all maintenance is delayed until summer months.

The proposal to install a new electrical line would improve the communication system for the Monument staff and would provide a safer environment for the power company employees to maintain the line. These impacts would be beneficial and measurable; therefore, the topic of park operations has been carried forward for further analysis in this document.

## Impact Topics Dismissed From Further Analysis

Some impact topics have been dismissed from further consideration, as listed below. During internal scoping, the park's interdisciplinary team conducted a preliminary analysis of resources to determine the context, duration, and intensity of effects that the proposal may have on those resources. If the magnitude of effects was determined to be at the negligible or minor level, there is no potential for significant impact and further impact analysis is unnecessary, therefore the resource is dismissed as an impact topic. If however, during internal scoping and further investigation, resource effects still remain unknown, or are more at the minor to moderate level of intensity, and the potential for significant impacts is likely, then the analysis of that resource as an impact topic is carried forward.

For purposes of this section, an impact of negligible intensity is one that is "at the lowest levels of detection, barely perceptible, and not measurable." An impact of minor intensity is one that is "measurable or perceptible, but is slight, localized, and would result in a limited alteration or a limited area." The rationale for dismissing these specific topics is stated for each resource.

### Vegetation

According to the National Park Service's 2006 *Management Policies*, the National Park Service strives to maintain all components and processes of naturally evolving park unit ecosystems, including the natural abundance, diversity, and ecological integrity of plants (NPS 2006). The proposed project area is located primarily on rocky slopes and talus areas. There is limited vegetation in the project area, and limited to conifers in the relative area of site 2. There is no vegetation located in sites 1 and 3, therefore this proposal is expected to have no effect or negligible effects on the vegetation. Because these effects are minor or less in degree, this topic has been dismissed from this document.

Several trees will be trimmed or removed during the construction of the power line. Roughly five trees, Douglas and White firs, may be removed during construction approximately two at Site 2 and two at Site 3. Trees at Site 1 will have branches from approximately 10 trees trimmed. Long term maintenance will require power company employees to trim branches at Site 1 on an as needed basis.

There are a number of noxious weeds at Timpanogos Cave National Monument. The most prevalent and threatening noxious weeds include Dalmatian Toadflax (*Linaria dalmatica*), Spotted Knapweed (*Centarea maculosa*), Canada Thistle (*Cirsium arvense*) and Houndstongue (*Cynoglossum officinale*). The monument also contains several exotic but non-invasive plants including Yellow sweetclover (*Melilotus officinalis*), Common Mullein (*Verbascum thapsus*), Field Bindweed (*Convolvulus arvensis*) and a variety of lawn and garden weeds.

The proposed project would result in ground disturbance, which has the potential to introduce and promote the existence of exotic and noxious weeds. The proposed area of disturbance is relatively small, roughly under 150 square feet, and is contained within the gravel and talus areas of sites 1, 2, and 3; as these areas do not currently support vegetation, measureable impacts from spread of promulgation of exotic plants and noxious weeds are not expected. Mitigation measures would be followed to further minimize the establishment of exotic plants and noxious weeds, as described in the Alternatives chapter.

Disturbed areas would be revegetated and rehabilitated following construction; therefore, removal and/or disturbance of vegetation in the project area is expected to result in negligible to minor adverse impacts to vegetation. Because such negligible impacts would not result in any unacceptable impacts to vegetation and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Wildlife

According to the National Park Service's *2006 Management Policies*, the National Park Service strives to maintain all components and processes of naturally evolving park unit ecosystems, including the natural abundance, diversity, and ecological integrity of animals (NPS 2006). ). Wildlife commonly found in the monument include Mule Deer (*Odocoileus hemionus*), Rocky Mountain Goats (*Oreamnos americanus*), Big Horn Sheep (*Ovis Canadensis*), Moose (*Alces alces*), raccoon, weasels, ground squirrels, chipmunks, Townsend Big-eared bat (*Corynorhinus townsendii*) and other bats, mice, and more than 100 species of birds. There are numerous insect species and reptiles including the Great Basin Rattlesnake (*Crotalus viridis lutosus*), Gopher Snake (*Pituophis cantenifer*), Rubber Boa (*Charina bottae*), and the Sagebrush Lizard (*Sceloporus graciosus*). The sites are heavily used visitor area and therefore, infrequently used by larger animals.

The location of the proposed power poles are in previously disturbed areas of the monument with no water, minimal vegetation, and no major geologic features. The presence of humans, human-related activities, and structures have removed or displaced much of the native wildlife habitat in the project areas, which has limited the number and variety of wildlife occurrences in the area. Some smaller wildlife such as rodents and reptiles and their habitat would be displaced or eliminated during construction of the new power line and removal of the old power poles. Disturbed areas would be revegetated and/or rehabilitated following construction, which would result in a negligible to minor adverse impact to the wildlife and wildlife habitat in the immediate area of construction.

During construction, noise would also increase, which may disturb wildlife in the general area. Construction-related noise would be temporary, and existing sound conditions would resume following construction activities. Therefore, the temporary noise from construction would have a negligible to minor adverse effect on wildlife. Because such negligible impacts would not result in any unacceptable impacts to wildlife and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Special Status Species

The Endangered Species Act of 1973 requires examination of impacts on all federally-listed threatened, endangered, and candidate species. Section 7 of the Endangered Species Act requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitats. In addition, the 2006 *Management Policies* and Director's Order-77 *Natural Resources Management Guidelines* require the National Park Service to examine the impacts on federal candidate species, as well as state-listed threatened, endangered, candidate, rare, declining, and sensitive species (NPS 2006).

To conduct this analysis, information from the U.S. Fish and Wildlife Service and the Utah Division of Wildlife was gathered to determine those special status species that could potentially occur on or near the project area. There are seven federally-listed species in Utah County including Canada Lynx, Clay Phacelia, Deseret Milk-vetch, June Sucker, Utah Valvata Snail, Ute Ladies'-tresses, and the Yellow-billed Cuckoo (USFWS 2008). There are nineteen state-listed species of concern including Fringed Myotis, Greater Sage-grouse, Kit Fox, Least Chub, Lewis's Woodpecker, Long-Billed Curlew, Northern Goshawk, Roundtail Chub, Short-Eared Owl, Smooth Greensnake, Southern Bonneville Springsnail, Southern Leatherside Chub, Spotted Bat, Three-toed Woodpecker, Townsend's Big-Eared Bat, Utah Physa, Western Red Bat, Western Toad, and the White-Tailed Prairie-Dog (UDOW 2008). There are no records of any of these species in the project area, nor does the project have any designated critical or essential habitat for these species. Per the Endangered Species Act, this would constitute a finding of "no effect".

Protection under the Migratory Bird Treaty Act makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition, this act serves to protect environmental conditions for migratory birds from pollution or other ecosystem degradations. Some migratory birds, including the Peregrine Falcon, are potential transients in the general area, including nesting sites east of sites 2 and 3, however, there is little suitable habitat for migratory birds and these lands are not vital for foraging and roosting. Construction-related noise could potentially disturb transient bird species, but these adverse impacts would be 1) temporary, lasting only as long as construction, and 2) negligible, because suitable habitat for transient birds is found throughout the region.

No threatened, endangered, or other species of concern are known to occur in the project area, and impacts to transient bird species would be temporary and negligible. Because such negligible impacts would not result in any unacceptable impacts to special status species and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Water Resources

National Park Service policies require protection of water quality consistent with the Clean Water Act. The purpose of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." To enact this goal, the U.S. Army Corps of Engineers has been charged with evaluating federal actions that result in potential degradation of waters of the United States and issuing permits for actions consistent with the Clean Water Act. The U.S. Environmental Protection Agency also has responsibility for oversight and review of permits and actions, which affect waters of the United States.

The proposed project area does not contain surface waters, and is mostly dry, except for periodic runoff during storm events. As such, water quality, water quantity, and drinking water are not expected to be affected by the project. Because such negligible impacts would not result in any unacceptable impacts to water resources and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## **Wetlands**

Executive Order 11990 *Protection of Wetlands* requires federal agencies to avoid, where possible, adversely impacting wetlands. Further, §404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers to prohibit or regulate, through a permitting process, discharge or dredged or fill material or excavation within waters of the United States. National Park Service policies for wetlands as stated in 2006 *Management Policies* and Director's Order 77-1 *Wetlands Protection* strive to prevent the loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In accordance with DO 77-1 *Wetlands Protection*, proposed actions that have the potential to adversely impact wetlands must be addressed in a statement of findings for wetlands.

No wetlands are located in the project area; therefore, there would be no impacts to wetlands and a statement of findings for wetlands will not be prepared. Because such negligible impacts would not result in any unacceptable impacts to wetlands and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## **Floodplains**

Executive Order 11988 *Floodplain Management* requires all federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. The National Park Service under 2006 *Management Policies* and Director's Order 77-2 *Floodplain Management* will strive to preserve floodplain values and minimize hazardous floodplain conditions. According to Director's Order 77-2 *Floodplain Management*, certain construction within a 100-year floodplain requires preparation of a statement of findings for floodplains.

The project area for the power line is not within a 100-year floodplain; therefore, a statement of findings for floodplains will not be prepared. Because such negligible impacts would not result in any unacceptable impacts to floodplains and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## **Wilderness**

According to the National Park Service's 2006 *Management Policies*, the National Park Service will evaluate all lands it administers for their suitability for inclusion within the national wilderness preservation system, and for those lands that possess wilderness characteristics, no action will be taken that would diminish wilderness suitability. According to the 1964 Wilderness Act which established the national wilderness preservation system, wilderness is defined as, "...an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain." There is no Congressionally designated or recommended wilderness at

Timpanogos Cave National Monument. Because such negligible impacts would not result in any unacceptable impacts to wilderness and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Air Quality

The Clean Air Act of 1963 (42 U.S.C. 7401 *et seq.*) was established to promote the public health and welfare by protecting and enhancing the nation's air quality. The act establishes specific programs that provide special protection for air resources and air quality related values associated with National Park Service units. Section 118 of the Clean Air Act requires a park unit to meet all federal, state, and local air pollution standards. Timpanogos Cave National Monument is designated as a Class II air quality area under the Clean Air Act. A Class II designation indicates the maximum allowable increase in concentrations of pollutants over baseline concentrations of sulfur dioxide and particulate matter as specified in §163 of the Clean Air Act. Further, the Clean Air Act provides that the federal land manager has an affirmative responsibility to protect air quality related values (including visibility, plants, animals, soils, water quality, cultural resources, and visitor health) from adverse pollution impacts.

Construction activities such as hauling materials and operating heavy equipment -- including a helicopter that may be used to transport materials -- could result in temporary increases of vehicle exhaust, emissions, and fugitive dust in the general project area. Any exhaust, emissions, and fugitive dust generated from construction activities would be temporary and localized and would likely dissipate rapidly because air stagnation at the Monument is rare. Overall, this would result in a negligible degradation of local air quality, and such effects would be temporary, lasting only as long as construction. The Class II air quality designation for the Monument would not be affected by the proposal. Because such negligible impacts would not result in any unacceptable impacts to air quality and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Soundscape Management

In accordance with 2006 *Management Policies* and Director's Order-47 *Sound Preservation and Noise Management*, an important component of the National Park Service's mission is the preservation of natural soundscapes associated with national park units (NPS 2006). Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sound considered acceptable varies among National Park Service units as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas.

The proposed power pole locations for the new electrical line and all construction activity would occur in what can be considered the developed zone of Timpanogos Cave National Monument. Existing sounds at these sites are often generated from vehicular traffic (site 1 proximity to SR 92), people, wildlife- such as birds, and wind. There will be no long-term sounds generated through the power line project and as the sites already contain man-made noises, the power line is not expected to appreciably increase the noise levels in the area.

During construction, human-caused sounds would likely increase due to construction activities, equipment, vehicular traffic, helicopter use, and construction crews. Any sounds generated from construction would be temporary, lasting only as long as the construction activity is generating the sounds, and would have a negligible to minor adverse impact on visitors and employees. Further, such negligible or minor impacts would not result in any unacceptable impacts; the proposed actions are consistent with §1.4.7.1 of *NPS Management Policies* 2006. Because these effects are minor or less in degree and would not result in any unacceptable impacts, this topic is dismissed from further analysis in this document.

Further, because such negligible impacts would not result in any unacceptable impacts to wetlands and because the proposed action is consistent with §1.4.7.1 of *NPS Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Lightscape Management

In accordance with 2006 *Management Policies*, the National Park Service strives to preserve natural ambient lightscapes, which are natural resources and values that exist in the absence of human caused light. Timpanogos Cave National Monument strives to limit the use of artificial outdoor lighting, only using that which is necessary for basic safety requirements. The Monument also strives to ensure that all outdoor lighting is shielded to the maximum extent possible, to keep light on the intended subject and out of the night sky.

There is no lighting associated with the maintenance or operation of the existing power line, nor would the proposed line require any exterior lighting. Construction activities would occur during daylight hours, so no nighttime lighting would be used. The proposed project would supply the caves with dependable electricity to run lights inside the caves; however, there are currently lights in the caves, so this is no change from the current situation. As such, there would be no impacts to the existing lightscape or night sky as a result of this project. Because such negligible impacts would not result in any unacceptable impacts to the lightscape and because the proposed action is consistent with §1.4.7.1 of *NPS Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Historic Structures

The National Historic Preservation Act requires federal agencies to consider the effects of their undertakings on historic properties that are listed in or eligible to be listed in the National Register of Historic Places. The National Park Service, as steward of many of America's most important cultural resources, is charged to preserve historic properties for the enjoyment of present and future generations. Management decisions and activities throughout the National Park Service must reflect awareness of the irreplaceable nature of these resources, as per 2006 *Management Policies* and Director's Order-28 *Cultural Resources Management*.

The term "historic structures" refers to both historic and prehistoric structures, which are defined as constructions that shelter any form of human habitation or activity. No historic structures, including the power line itself, were identified during two previous cultural resource inventories conducted within portions or immediately adjacent to the area of potential effects (Nelson 1996, 2000); therefore, the proposed project is not expected to impact any known historic structures. Because such negligible impacts would not result in any unacceptable impacts to historic structures and because the proposed action is consistent with §1.4.7.1 of *NPS Management Policies* 2006, this topic is dismissed from further analysis in this document.



## Archeological Resources

Archeological resources are the remains of past human activity and the effects of that activity on the environment, whether prehistoric or historic. Archeological features are typically buried, but may extend above ground. The National Park Service's Director's Order-28A *Archeology* affirms a long-term commitment to the appropriate investigation, documentation, preservation, interpretation, and protection of archeological resources inside units of the National Park System. As one of the principal stewards of America's heritage, the National Park Service is charged with the preservation of the commemorative, educational, scientific, and traditional cultural values of archeological resources for the benefit and enjoyment of present and future generations. Archeological resources are nonrenewable and irreplaceable, so it is important that all management decisions and activities throughout the National Park System reflect a commitment to the conservation of archeological resources as elements of our national heritage.

No archeological resources were identified during two previous cultural resource inventories conducted within portions or immediately adjacent to the area of potential effects (Nelson 1996, 2000); therefore, the proposed project is not expected to impact any known historic structures. therefore, the proposed project is not expected to disturb any known archeological sites. If archeological resources are inadvertently discovered during construction, appropriate steps would be taken to protect them. Because such negligible impacts would not result in any unacceptable impacts to archeological resources and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Ethnographic Resources

Ethnographic resources are any site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it. According to the National Park Service's Director's Order-28 *Cultural Resources Management*, the National Park Service should try to preserve and protect ethnographic resources. The decision to call resources "ethnographic" depends on whether associated peoples perceive them as traditionally meaningful to their identity as a group and the survival of their lifeways; therefore, ethnographic resources are identified in consultation with the associated peoples.

There are no Native American tribes that have expressed an association with the Monument; therefore, tribal consultation was not conducted. No other traditional peoples are known to be associated with the Monument; therefore, there are no ethnographic resources in the project area. Because such negligible impacts would not result in any unacceptable impacts to ethnographic resources and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Cultural Landscapes

Cultural landscapes are settings that humans have created in the natural world. According to the National Park Service's Director's Order-28 *Cultural Resources Management*, they are a reflection of human adaptation and use of natural resources, and are 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.

Although a cultural landscape inventory has not been conducted for the Monument, the features within the general project area, including the non-historic power line, are not likely to contribute to a significant cultural landscape. Because such negligible impacts would not result in any unacceptable impacts to cultural landscapes and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## **Museum Collections**

According to Director's Order-24 *Museum Collections Management*, the National Park Service is custodian in perpetuity of irreplaceable and priceless museum collections that include objects, specimens, and archival and manuscript materials (textual, electronic, and audio-visual documents), representing cultural and natural resources in the United States, including but not limited to the disciplines of archeology, biology, ethnology, geology, history, and paleontology. Museum collections are part of the natural and cultural heritage of the country and are collected, preserved, and interpreted for public benefit.

No museum collections are housed, retained, or maintained in the area of potential effect. The proposed project would not disturb any curatorial facilities or contribute any additional collections to curatorial facilities. Because such negligible impacts would not result in any unacceptable impacts to museum collections and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## **Socioeconomics**

The proposed action would neither change local and regional land use nor appreciably impact local businesses or other agencies. Implementation of the proposed action could provide a negligible beneficial impact to the localized economy in the immediate area of the Monument due to minimal increases in employment opportunities for the construction workforce and revenues for local businesses and governments generated from these additional construction activities and workers. Any increase in workforce and revenue, however, would be temporary and negligible, lasting only as long as construction. Because the impacts to the socioeconomic environment would be negligible, this topic is dismissed.

## **Prime and Unique Farmlands**

The Farmland Protection Policy Act of 1981, as amended, requires federal agencies to consider adverse effects to prime and unique farmlands that would result in the conversion of these lands to non-agricultural uses. Prime or unique farmland is defined by the U.S. Department of Agriculture's Natural Resources Conservation Service as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. In order to be considered prime and unique, the farmland must be irrigated. The Monument does not contain land suitable for cultivation and does not irrigate any of its lands; and, therefore does not contain prime or unique farmlands. Because such negligible impacts would not result in any unacceptable impacts to prime and unique farmlands and because the proposed action is consistent with §1.4.7.1 of NPS *Management Policies* 2006, this topic is dismissed from further analysis in this document.

## Environmental Justice

Executive Order 12898 *General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Because the new power line would supply electricity and telephone capability for use by visitors and park staff regardless of race or income, and because the construction workforces would not be hired based on their race or income, the proposed action would not have disproportionate health or environmental effects on minorities or low-income populations or communities; therefore, this topic is dismissed from further analysis in this document.

# ALTERNATIVES

In December of 2008, an interdisciplinary team of National Park Service employees conducted an internal scoping meeting to identify project objectives (as described in the *Purpose and Need*) and to develop a list of alternatives that would meet these objectives. During this meeting and over the course of the environmental planning process, several alternatives were considered. Of these, two are being carried forward for further analysis in this Environmental Assessment including the no action alternative and an action alternative. A summary table comparing alternative components and how these alternatives meet the project objectives is presented toward the end of this chapter. In addition, this chapter includes the alternatives that were dismissed from further consideration along with reasons for their dismissal.

## Alternatives Carried Forward

### Alternative A – No Action

Under this alternative, a new electrical line would not be installed. The eight poles that comprise the existing power line would not be repaired, replaced, or relocated, nor would the cable that strings between the poles be repaired or replaced. The existing cellular phone and radio service in the cave would not be upgraded to a hard-line. The swath of vegetation in the right-of-way under the power line would continue to be cut for maintenance and access purposes. The power company would continue to service the line and provide power as long as the condition of the line is favorable and the safety of the company's employees is ensured. Should the no action alternative be selected, the National Park Service would respond to future power and communication needs without major actions or changes in present course of action. Figure 1 illustrates the location of the existing electrical line.

### Alternative B – Install New Electrical Line

**Location** This alternative consists of constructing a new electrical line with new power poles and a new cable. The new electrical line would begin at the current canyon power line crossing State Road 92 and the American Fork River to a disturbed quarry site one quarter mile west in the Uinta-Wasatch-Cache National Forest (Site 1) and then enter the Monument the cable would ascend to the second site on the access trail known as "Dead Dog" (Site 2), continue to a transformer situated at the employee access area known as "Lunch Bench" (Site 3) and the remainder of its run to the caves. Utah Department of Transportation right-of-way in American Fork Canyon requires the first site to be more than 50 feet from the highway centerline. This process will ensure that this project will comply with UDOT protocols. Figure 1 shows the location of the new electrical line in comparison to the existing line.

**Poles** A pole on the current canyon power line would be replaced to better support the cable branching to Site 1. The new line would have poles located at Sites 1 and 2. A pair of 40 ft wooden poles would be placed at Site 1. An auger would drill 10ft into the ground for pole placement to avoid blasting and two guy wires attached to the poles and bolted to the rock 30 ft way to support the poles. Two 70 ft weather resistant steel pole would be placed at Site 2 thirty ft apart. Each pole would be bolted to a 2 ft by 2ft steel plate bolted to the rock with 2 inch bolts. Site 3 would include the cable bolted to a steel plate on the cliff face at the lunch bench and clearing the disturbed employee Lunch Bench for the transformer box with a maximum site impact of 10 ft<sup>2</sup>.

**Cable** The new cable that strings between the poles would be a 3/8-inch conductor (wire) manufactured with internal fiber optic strands that have telephone/communication capability in addition to electrical power. The span from Site 1 to Site 2 will be 2,130 ft with a vertical distance of 1,017 ft and a horizontal distance of 1,872 ft. The span from Site 2 to Site 3 will be approximately 425 ft with a vertical distance of 200 ft and a horizontal distance of 375 ft. This new cable with telephone capability would be used to upgrade the security system for the cave through telephone communication to the alarm company. The current line strictly provides electrical power and there is no telephone communication available at the caves. The cable will be strung using helicopter during slow season and would require approximately 2-5 days of trail closure while helicopters were transporting equipment and poles to the sites and installing the cable.

**Rehabilitation** The eight existing poles and power line would be removed and disposed of off-site. These areas would be rehabilitated (ie, recontoured, revegetated), as needed. The existing trees in the project area would be preserved to the extent possible; however, roughly five trees may be removed during construction approximately two at Site 2 and two at Site 3. Trees at Site 1 will have branches trimmed to clear a swath for the line. All areas disturbed by construction of the new electrical line would be revegetated and recontoured to the style of the native landscape. Native vegetation, rocks, or other natural features would be used, as appropriate.

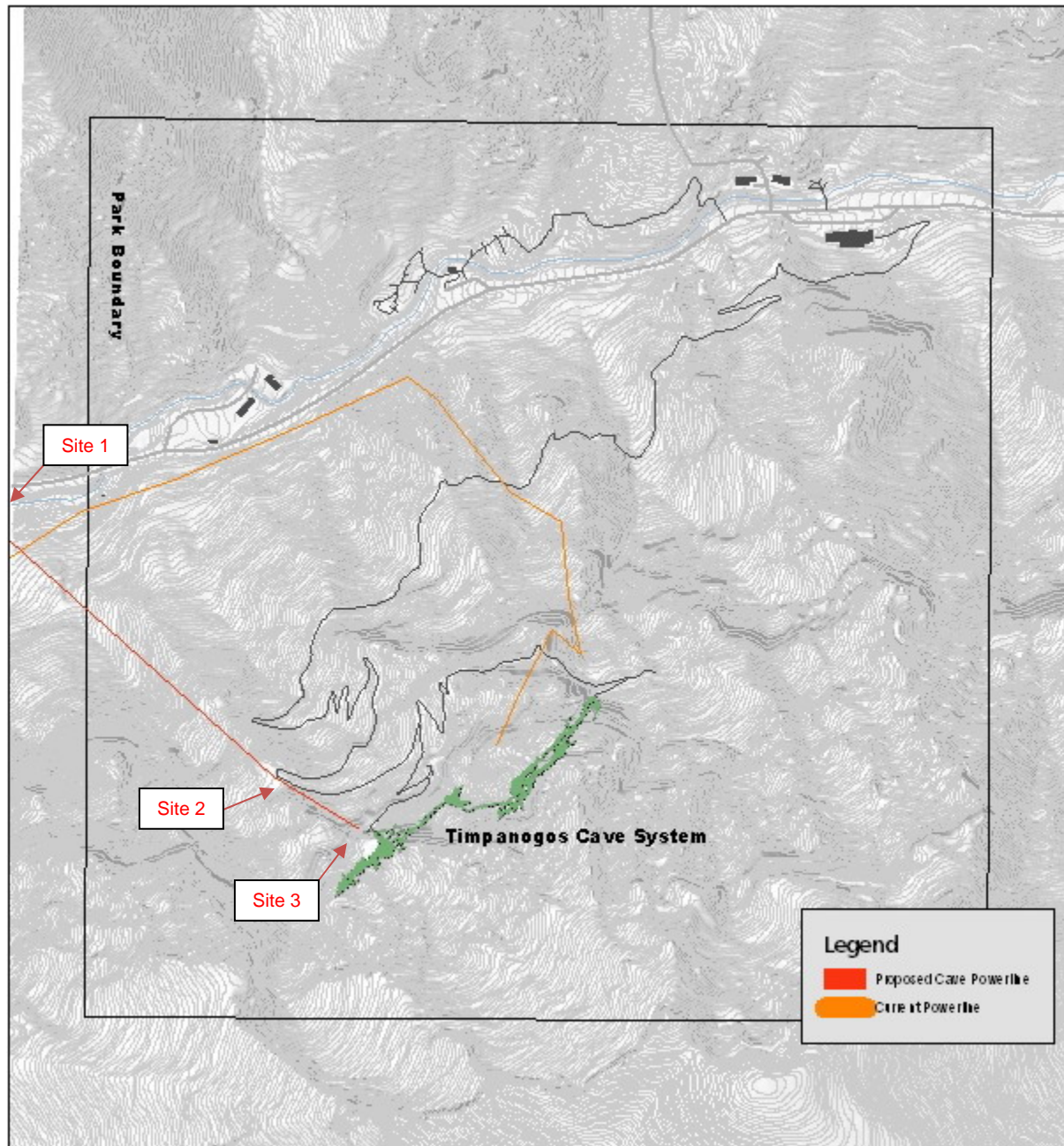
**Construction** Access to the three sites during construction would require utilizing the current roads and trails. The pole installed at Site 1 would require service vehicles and backhoe in the quarry site and will travel using Highway 92. Sites 2 and 3 limits construction will require ATV's and motorcycles to transport equipment to the project locations. Project completion will take approximately three weeks with trail closures only occurring during helicopter flights resulting in 2-5 days of closure.

**Long Term Maintenance:** The new power line will require reduced maintenance as poles are placed in less critical rock fall hazard areas. Electrical company employees will visit the poles on a 5 year maintenance cycle or as needed. Approximately ten trees will need to be trimmed during long term maintenance primarily at Site 1.

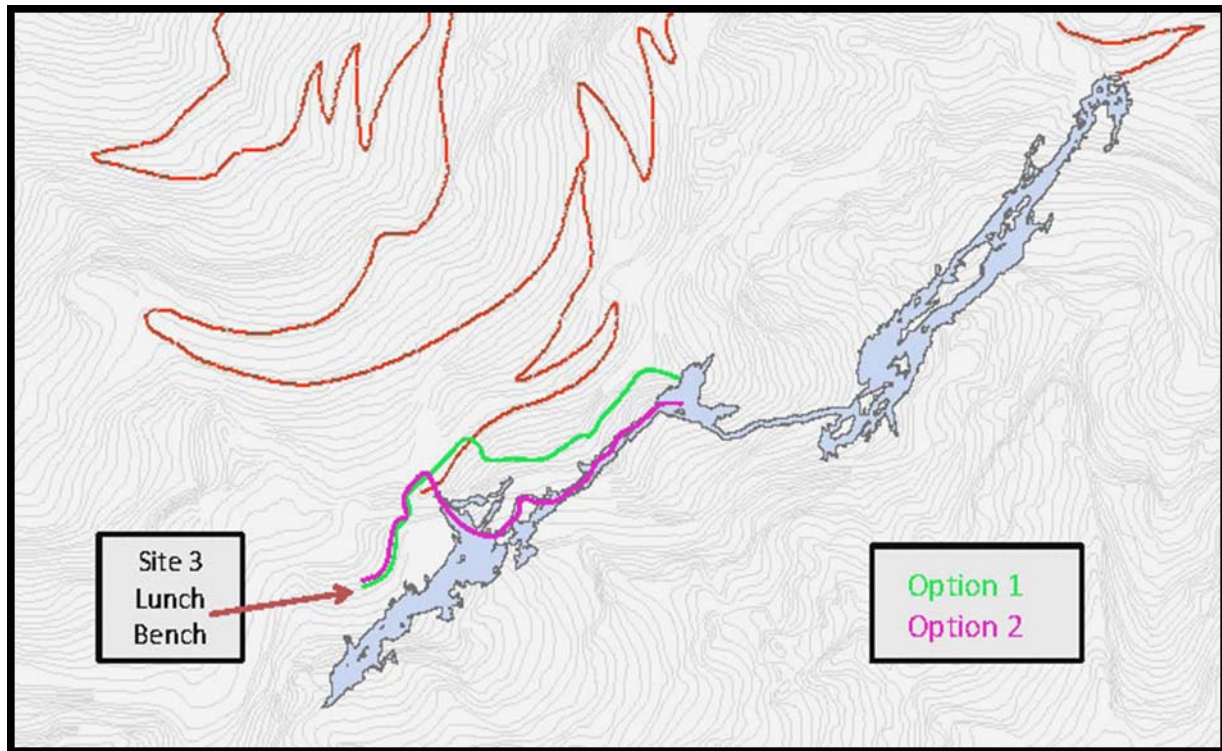
**Cave Wiring:** Two options are available in connecting wiring from Site 3 to the main power panel in the caves. The first option, the cable will be attached to the cliff face the remaining distance and connect to the cave electrical system at the Middle Cave entrance. The second option, the cable will be buried in the cave trail through the caves until it reaches the power panel approximately 600 feet into the cave system.

This alternative is based on preliminary designs and best information available at the time of this writing. Specific distances, areas, and layouts used to describe the alternative are only estimates and could change during final site design. If changes during final site design are inconsistent with the intent and effects of the selected alternative, then additional compliance would be completed, as appropriate.

**Figure 1 – Alternatives A (No Action) and B (Install New Line)**



**Figure 2 – Option 1 (Surface Cable Installation) and Option 2 (Cave Cable Installation)**



## Mitigation Measures

The following mitigation measures were developed to minimize the degree and/or severity of adverse effects and would be implemented during construction of the action alternative:

- To minimize the amount of ground disturbance, staging and stockpiling areas would be in previously disturbed sites, away from visitor use areas to the extent possible. All staging and stockpiling areas would be returned to pre-construction conditions following construction.
- No damage can occur to the cave formations. Any construction in the cave can only occur in previously impacted areas. All foreign debris will be removed from the cave following construction and dust and lint must be removed immediately to prevent permanent damage. Park staff will supervise to ensure maximum cave protection.
- The walking trail leading to the caves would be closed during helicopter use. To minimize the potential for impacts to park visitors, variations on construction timing may be considered. One option includes conducting the majority of the work in the off-season (winter) or shoulder seasons. National Park Service would determine this in consultation with the contractor.
- Revegetation and recontouring of disturbed areas would take place following construction and removal of the old line and would be designed to minimize the visual intrusion of the line. Revegetation efforts would strive to reconstruct the natural spacing, abundance, and diversity of native plant species using native species. All disturbed areas would be restored as nearly as possible to pre-construction conditions shortly after construction activities are completed. Weed control methods would be implemented to minimize the introduction of noxious weeds. Some trees may be removed, but other existing vegetation at the site would not be disturbed to the extent possible.
- Fugitive dust generated by construction would be controlled by spraying water on the construction site, if necessary.
- To reduce noise and emissions, construction equipment would not be permitted to idle for long periods of time.
- To minimize possible petrochemical leaks from construction equipment, the contractor would regularly monitor and check construction equipment to identify and repair any leaks.
- Should construction unearth previously undiscovered cultural resources, work would be stopped in the area of any discovery and the Monument would consult with the state historic preservation officer and the Advisory Council on Historic Preservation, as necessary, according to §36 CFR 800.13, *Post Review Discoveries*. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.
- The location for the power line will be situated in such a way as to minimize its visual effect to the historic character of the entrance.
- Construction workers and supervisors would be informed about the special sensitivity of Monument's values, regulations, and appropriate housekeeping. The National Park Service

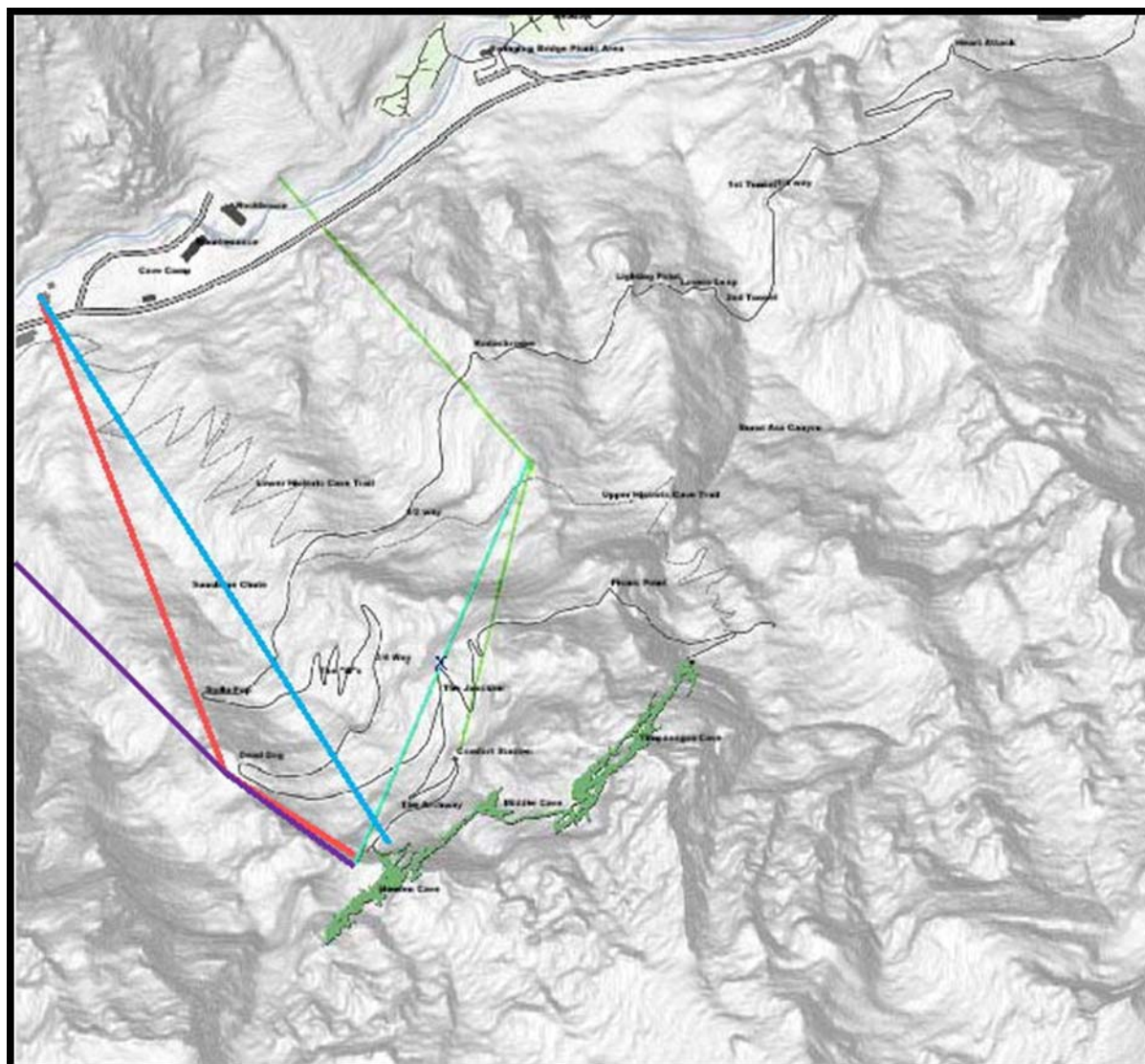


would ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties. Contractors and subcontractors would also be instructed on procedures to follow in case previously unknown paleontological or archeological resources are uncovered during construction. Construction workers and supervisors would be informed about special status species. Contract provisions would require the cessation of construction activities if a species were discovered in the project area, until park staff re-evaluates the project. This would allow modification of the contract for any protection measures determined necessary to protect the discovery.

## Alternatives Considered and Dismissed

Several alternatives were considered for project implementation, but were ultimately dismissed from further analysis for the following reasons:

- **Alternative Locations for a New Electrical Line** – Five alternate locations were considered for installing a new electrical line as shown in Figure 3. These locations were dismissed because they would result in greater adverse impacts to the Monument's resources such as more ground disturbance and viewshed obstruction. The preferred alternative is a combination of the most environmentally sensitive features of these dismissed alternatives.
- **Utilizing Another Source of Power** – Other types of "off-the-grid" power such as solar and wind were considered and dismissed. The National Park Service acknowledges that these types of energy can be environmentally sustainable, but the cost to construct these systems in this situation is prohibitive. The site does not have sustained wind resources. The aspect of the site faces north, and high cliffs to the south totally block the sun much of the year and interfere with it through much of the main visitor use season. In addition, these systems may cause greater adverse impacts to the Monument's resources -- particularly to the viewshed -- and thus were dismissed.



## Alternative Summaries

Table 1 summarizes the major components of Alternatives A and B, and compares the ability of these alternatives to meet the project objectives. As shown in the following table, Alternative B meets each of the objectives identified for this project, while Alternative A does not address all of the objectives.

**Table 1 – Summary of Alternatives and How Each Alternative Meets Project Objectives**

| Alternative Elements  | Alternative A – No Action  | Alternative B – Install New Line  |
|---|--|---|
| Install electrical line   | A new electrical line would not be installed and the existing eight poles and cable would remain as they are now.  | A new electrical line would be installed consisting of 4 poles and a cable that has both electrical and telephone capability. The existing eight poles would be removed and these areas rehabilitated as needed.  |
| Install hard land line telephone in the caves   | The existing cellular phone and radio service in the cave would not be upgraded to a hard-line system.   | A hard-line telephone would be installed in the cave.   |
| Maintain the line and provide electrical power  | The power company would continue to service the line and provide power as long as the condition of the line is favorable and the safety of the company's employees is ensured. The swath of vegetation in the right-of-way under the line would continue to be cut for access. | The power company would supply power to the Monument and maintain the line. With easier access to the line, the swath of vegetation in the right-of-way under the line would no longer need to be cut.  |
| Project Objectives  | Meets Project Objectives?  | Meets Project Objectives?   |
| Maintain consistent and dependable electrical power to the caves  | No. The existing electrical line would continue to deteriorate which would eventually result in losing power to the caves.   | Yes. A new electrical line would be installed which would provide dependable electrical power to the caves.   |
| Improve accessibility of the power line so it can be safely maintained.   | No. The existing poles would remain, one of which is extremely difficult for the power company to reach. The poles/cable would continue to deteriorate making it unsafe for the power company to maintain.   | Yes. New poles would be installed in locations that the power company can easily reach, and the new poles and cable would be made of durable material that is safe for the power company to maintain.   |
| Provide a dependable telephone system at the caves.   | No. Without a new electrical line that has telephone capability, a hard line telephone would not be installed in the caves.  | Yes. A fiber optic cable with telephone capability would be installed.  |
| Provide a solution that minimizes impacts to park resources and will not result in unacceptable impacts or impairment to these resources. | Yes. There would be no construction-related impacts such as ground disturbance. For the long-term, this alternative would result in no power to the caves and therefore, no visitor use to the main resource of the Monument.  | Yes. While there would be some construction-related impacts, this alternative was developed to minimize adverse effects to the extent possible. For the long-term, the swath of vegetation would no longer need to be cut which is a beneficial effect. |

Table 2 summarizes the anticipated environmental impacts for alternatives A and B. Only those impact topics that have been carried forward for further analysis are included in this table. The *Environmental Consequences* chapter provides a more detailed explanation of these impacts.

**Table 2 – Environmental Impact Summary by Alternative**

| Impact Topic                      | Alternative A – No Action   | Alternative B – Install New Line   |
|-----------------------------------|---|--|
| <b>Geology and Soils</b>          | No disturbance of geology and soils.  | Minor adverse disturbance on geology and soils at three pole sites as a result of pole installation.   |
| <b>Cave Resources</b>             | No impact to cave resources.  | Minor adverse impacts to cave resources from power line construction and line installation inside cave system.   |
| <b>Visitor Use and Experience</b> | No impact on visitor use and experience until line failure, then modification of cave tours.  | Minor adverse effects resulting from changes to the viewshed, and construction noise/dust. Pole placement would be visible to hiking visitors. Minor beneficial effects to visitor use from more reliable electrical system. |
| <b>Park Operations</b>            | No impact on park operations until line failure, then alteration of tours, no security system, and modification of maintenance and resource duties. | Minor to moderate to beneficial effects from an improved electrical system, reliable alarm system, and new phone system. Minor adverse impacts to park operations resulting from construction closure.                       |

## Identification of the Environmentally Preferred Alternative

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which guides the Council on Environmental Quality (CEQ). The CEQ provides direction that “[t]he environmentally preferable alternative is the alternative that would promote the national environmental policy as expressed in NEPA’s §101:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities; and
- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative A, *No Action*, only minimally meets the above six evaluation factors because it would retain a failing power line that has exceeded its usable lifespan and would not provide a working system for succeeding generations (#1). The electrical line does not meet health and safety standards in terms the power company being able to work on and maintain the line which is contrary to assuring safe surroundings (#2, 3). Although it minimizes potential impacts to park resources because there would be no construction, it does not achieve a balance between these resources for the long-term because the eventual lack of power would likely result dramatic limitations on the number of visitors going through the caves or closing the caves to the public (#4,

5). This alternative also does not meet the criteria for improving renewable resources because the existing line does not combine electrical power and telephone capability into one system (#6).

Alternative B is the environmentally preferred alternative because it best addresses these six evaluation factors. Alternative B, *Install New Electrical Line*, would be a permanent facility used by future generations and would provide a working environment for the power company workers that meets health and safety recommendations (#1, 2). Several alternatives were considered and this alternative minimizes environmental impacts to the extent possible (#3, 4). The new line would provide dependable electrical power to the caves for the long-term, thereby allowing the caves to remain open for visitor use (#5). The new line would combine electrical power and telephone capability into one system which would be more efficient than the current single-function line (#6).

## **Selection of the Preferred Alternative**

No new information came forward from public scoping or consultation with other agencies to necessitate the development of any new alternatives, other than those described and evaluated in this document. Because it meets the purpose and need for the project, the project objectives, and is the environmentally preferred alternative, Alternative B is also recommended as the National Park Service preferred alternative. For the remainder of the document, Alternative B will be referred to as the preferred alternative.

## ENVIRONMENTAL CONSEQUENCES

This chapter analyzes the potential environmental consequences, or impacts, that would occur as a result of implementing the proposed project. Direct, indirect, and cumulative effects, as well as impairment and unacceptable impacts are analyzed for each resource topic carried forward. Potential impacts are described in terms of type, context, duration, and intensity. General definitions are defined as follows, while more specific impact thresholds are given for each resource at the beginning of each resource section.

- **Type** describes the classification of the impact as either beneficial or adverse, direct or indirect:
  - *Beneficial*: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
  - *Adverse*: A change that moves the resource away from a desired condition or detracts from its appearance or condition.
  - *Direct*: An effect that is caused by an action and occurs in the same time and place.
  - *Indirect*: An effect that is caused by an action but is later in time or farther removed in distance, but is still reasonably foreseeable.
- **Context** describes the area or location in which the impact will occur. Are the effects site-specific, local, regional, or even broader?
- **Duration** describes the length of time an effect will occur, either short-term or long-term:
  - *Short-term* impacts generally last only during construction, and the resources resume their pre-construction conditions following construction.
  - *Long-term* impacts last beyond the construction period, and the resources may not resume their pre-construction conditions for a longer period of time following construction.
- **Intensity** describes the degree, level, or strength of an impact. For this analysis, intensity has been categorized into negligible, minor, moderate, and major. Because definitions of intensity vary by resource topic, intensity definitions are provided separately for each impact topic analyzed in this Environmental Assessment.

### Cumulative Effects

The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for action and no action alternatives.

Cumulative impacts were determined by combining the impacts of the given alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at the Monument and, if applicable, the surrounding region. Because the environmental impact and scale of this project are relatively small, the geographic scope for this analysis is confined to actions mostly within the Monument's boundaries and some actions from the Uinta-Wasatch-Cache National Forest. The temporal scope was similarly confined and includes projects within a range of approximately ten years. The area of

consideration for cumulative impacts varies slightly by impact topic. Following are the actions used for the purpose of conducting the cumulative effects analysis:

- Renovation and reconstruction of Little Mill Campground, Uinta-Wasatch-Cache NF, 2007-08
- Removal of PacifiCorp American Fork Canyon Hydroelectric line, PacifiCorp, 2006.
- Construction of Saw Mill Picnic Area, Uinta-Wasatch-Cache, NF, 2008.
- Visitor Contact station, road/parking realignment, Timpanogos Cave NM, 2013.
- Interagency Visitor Center, Timpanogos Cave NM and Uinta-Wasatch-Cache NF, project pending.

## Impairment

*Management Policies* 2006 require analysis of potential effects to determine whether or not actions would impair park resources (NPS 2006). The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values. However, the laws do give the National Park Service the 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 impact does not constitute impairment of the affected resources and values.

Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the National Park Service 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 National Park Service manager, would harm the integrity of park resources or values. An impact to any park resource or value may constitute an impairment, but an impact would be more likely to constitute an impairment to the extent that it has a major or severe adverse effect upon a resource or value whose conservation is:

1. necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
2. key to the natural or cultural integrity of the park; or
3. identified as a goal in the park's general management plan or other relevant National Park Service planning documents.

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. A determination on impairment is made in the *Conclusion* section for each of the resource topics carried forward in this chapter.

## Unacceptable Impacts

The impact threshold at which impairment occurs is not always readily apparent. Therefore, the Park Service applies a standard that offers greater assurance that impairment will not occur by avoiding unacceptable impacts. These are impacts that fall short of impairment, but are still not acceptable within a particular park's environment. Park managers must not allow uses that would

cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable.

Virtually every form of human activity that takes place within a park has some degree of effect on park resources or values, but that does not mean the impact is unacceptable or that a particular use must be disallowed. Therefore, for the purposes of these policies, unacceptable impacts are impacts that, individually or cumulatively, would:

- be inconsistent with a park's purposes or values, or
- impede the attainment of a park's desired future conditions for natural and cultural resources as identified through the park's planning process, or
- create an unsafe or unhealthful environment for visitors or employees, or
- diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values, or
- unreasonably interfere with
  - park programs or activities, or
  - an appropriate use, or
  - the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park.
  - NPS concessioner or contractor operations or services. (NPS 2006)

In accordance with *Management Policies*, park managers must not allow uses that would cause unacceptable impacts to park resources. To determine if unacceptable impact could occur to the resources and values of Florissant Fossil Beds National Monument, the impacts of proposed actions in this Environmental Assessment were evaluated based on the above criteria. A determination on unacceptable impacts is made in the *Conclusion* section for each of the physical resource topics carried forward in this chapter.

## Geology and Soils

### Intensity Level Definitions

**Negligible:** The impact is at the lowest levels of detection and causes very little or no physical disturbance/removal, compaction, or unnatural erosion, when compared with current conditions.

**Minor:** The impact is slight but detectable in some areas, with few perceptible effects of physical disturbance/removal, compaction, or unnatural erosion of geology/soils.

**Moderate:** The impact is readily apparent in some areas and has measurable effects of physical disturbance/removal, compaction, or unnatural erosion of geology/soils.

**Major:** The impact is readily apparent in several areas and has severe effects of physical disturbance/removal, compaction, or unnatural erosion of geology/soils.

### Impacts of Alternative A - No Action

Under this alternative, there would be no construction of a new power line or poles. Without construction activities, soils would not be impacted beyond their current state until the potential



failure of the line and poles wherein the cable or poles could potentially cause minor rockslides in the immediate area of each pole or failure.

Soils, including biological soil crusts, would not be disturbed from construction activities. Maintenance has ceased on the current line therefore, no future maintenance trails would be created or enhanced to maintain the line. This would be negligible adverse effects to soils as they are carried to lower elevation by wind and storm events, and human impacts from maintaining the line.

**Cumulative Impacts:** Construction or earth-moving activities from past, present, and reasonably foreseeable future actions (i.e., all of the actions listed in the cumulative scenario) could disturb soils resulting in compaction of soils and/or ground disturbance. Greater ground disturbance may also lead to greater erosion, having an adverse effect on soils as well. Therefore, the overall cumulative effect to soils from construction activities would be adverse and minor to moderate, resulting from compaction, ground disturbance, and erosion. If the power line were to fail under this alternative, there would be potential for a landslide and greater erosion and/or ground disturbance, which would have a minor incremental effect on soils when combined with all of the other ground disturbing projects.

**Conclusion:** Without construction activities, the impact to soils would be negligible ground disturbance; however, should the line fail, then a potential for erosion would occur from the resulting landslide. This alternative would have minor to moderate cumulative disturbance of geologic and soil resources, when considered with other past, present, and reasonably foreseeable future actions. Because the current impacts would be less than major, there would be not impairment to the Monument's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

### **Impacts of Alternative B (Preferred) - Install New Electrical Line**

Construction activities under this alternative including the placement of poles and transformer box at the three sites would result in some ground disturbance, thereby minor to moderately impacting soils. Construction activities may compact soils in some areas and/or loosen soils in other areas. Construction limits would help minimize the amount of soil disturbance resulting in an overall long-term minor adverse effect to soils and geology.

Long-term maintenance of the power line will not contribute to erosion of soils or geology in that access to the line would include using the current access trail to the caves. In areas of steeper grades, soils would be carried to lower elevations naturally by wind and storm events from the project sites. Impacts on soils in these areas of trail are of minor intensity.

Routine electrical company maintenance to the line and poles would occur as needed. Due to the hardened trail surface of the access trail and the disturbed sites selected for the power poles, minor to negligible impacts to soils and geology will occur. Therefore, impacts to soils and geology from long-term line maintenance would be of minor intensity.

The existing power line and pole sites would be rehabilitated. Natural revegetation and growth of biological soil crusts would occur naturally. This would have a minor to moderate beneficial effect on soils because these areas would no longer be accessed by power company employees and subsequently trampled, loosened, and/or compacted.

In Option 1, the cable/conduit would be attached to the rock walls and in high rockfall areas, chiseled in rock to protect the cable. Minor long-term impacts would result to the geology and soils from bolting and chiseling to the cliff face. In Option 2, the cable/conduit would be buried in the current cave trail causing minor short-term impacts from dust or damage resulting from construction. Extreme care would be taken during construction of this option to minimize adverse effects to cave resources.

**Cumulative Impacts:** Construction or earth-moving activities from past, present, and reasonably foreseeable future actions (i.e., all of the actions listed in the cumulative scenario) could disturb soils resulting in compaction of soils and/or ground disturbance. Greater ground disturbance may also lead to greater erosion, having an adverse effect on soils as well. Therefore, the overall cumulative effect to soils from construction activities would be adverse and minor to moderate, resulting from compaction, ground disturbance, and erosion. The beneficial effects of this alternative, namely the minimization of ground disturbance during maintenance on the line and the revegetation of a portion of the power line corridor, would have a beneficial effect on soils, which would minimize the overall adverse cumulative effect to a negligible to minor degree. The overall cumulative effect to soils would still be adverse and minor to moderate.

**Conclusion:** Construction of the new power line and poles under Alternative B would result in the disturbance and loss of soils primarily during construction activities resulting in a minor to negligible adverse effect to soils. Long-term maintenance of the line would not impact soils further beyond the natural use of the access trail by visitors. Minor long-term impacts would result from cable/conduit placement in Options 1 and 2. Cumulatively, this alternative would contribute negligible amount of soil and geologic impacts when combined with other ground disturbing activities in the Monument. Because the impacts would be less than major, there would be no impairment of the Monument's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with §1.4.7.1 of *NPS Management Policies* 2006.

## Cave Resources

### Intensity Level Definitions

**Negligible:** The impact is at the lowest levels of detection and causes very little or no physical disturbance/removal, compaction, or unnatural erosion, when compared with current conditions.

**Minor:** The impact is slight but detectable in some areas, with few perceptible effects of physical disturbance/removal, compaction, or unnatural erosion of geology/soils.

**Moderate:** The impact is readily apparent in some areas and has measurable effects of physical disturbance/removal, compaction, or unnatural erosion of geology/soils.

**Major:** The impact is readily apparent in several areas and has severe effects of physical disturbance/removal, compaction, or unnatural erosion of geology/soils.

### Impacts of Alternative A - No Action

Under this alternative, there would be no construction of a new power line or poles or altering of cave electrical cable. Without construction activities, cave resources would not be impacted

beyond their current state. Cave resources would not be disturbed from construction activities. This would be negligible adverse effects to cave resources from maintaining the line.

**Cumulative Impacts:** None of the activities listed in the cumulative scenario would impact cave resources; therefore, other than the impacts to cave resources from this alternative, there would be no cumulative impacts to cave resources.

**Conclusion:** Without construction activities, the impact to cave resources would be negligible. Because the current impacts would be less than major, there would be not impairment to the Monument's resources or values. This alternative would have no cumulative effect to cave resources, when considered with other past, present, and reasonably foreseeable future actions. Implementation of this alternative would not result in any unacceptable impacts and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

### Impacts of Alternative B (Preferred) - Install New Electrical Line

Construction activities under this alternative attachment of the new power line to the cave electrical system would result in some disturbance in the cave, thereby minor to moderately impacting cave resources. Construction activities may compact cave soil and features in some areas and/or loosen cave soils in other areas. Construction limits would help minimize the amount of cave disturbance resulting in an overall long-term minor adverse effect to cave resources.

Routine electrical company maintenance to the line would occur as needed. Due to the hardened trail surface of the cave tour trail, minor impacts to cave resources will occur. Therefore, impacts to cave resources from long-term line maintenance would be of minor intensity.

In Option 2, the cable/conduit would be buried in the current cave trail causing minor short-term impacts from dust or damage resulting from construction. Extreme care would be taken during construction of this option to minimize adverse effects to cave resources.

**Cumulative Impacts:** None of the activities listed in the cumulative scenario would impact cave resources; therefore, other than the impacts to cave resources from this alternative, there would be no cumulative impacts to cave resources.

**Conclusion:** Construction of the new power line under Alternative B would result in the disturbance of cave resources primarily during construction activities resulting in a minor to negligible adverse effect to soils. Long-term maintenance of the line would impact cave resources would have minor adverse effects through access of the line by power company and park employees. Minor long-term impacts would result from cable/conduit placement in Option 2. Cumulatively, this alternative would have no impact to cave resources, when considered with other past, present, and reasonably foreseeable future actions. Because the impacts would be less than major, there would be no impairment of the Monument's resources or values. Implementation of this alternative would not result in any unacceptable impacts and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

## Visitor Use and Experience

### Intensity Level Definitions

- Negligible:** Visitors would not be affected or changes in visitor use and/or experience would be below or at the level of detection. Any effects would be short-term. The visitor would not likely be aware of the effects associated with the alternative.
- Minor:** Changes in visitor use and/or experience would be detectable, although the changes would be slight and likely short-term. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.
- Moderate:** Changes in visitor use and/or experience would be readily apparent and likely long-term. The visitor would be aware of the effects associated with the alternative, and would likely be able to express an opinion about the changes.
- Major:** Changes in visitor use and/or experience would be readily apparent and have substantial long-term consequences. The visitor would be aware of the effects associated with the alternative, and would likely express a strong opinion about the changes.

### Impacts of Alternative A - No Action

Under this alternative, there would be no new power line constructed. Without any construction activities, there would be no construction-related impacts such as noise and dust, and the visitor experience would remain the same. Electrical services would remain the same until the potential failure of the current power line.

Users would likely continue to access the caves using the cave access trail and cave tours would continue using the currently electrical service. The power line would continue to have a minor to negligible adverse effect on the visual setting as visitors hike to the caves on the cave access trail and underneath the power line. The long-term effect to the visitor use and experience would therefore be negligible until the power line were to fail. If the line failed, there would be moderate temporary impacts to visitor use and experience as tour sizes would be reduced and tour availability would be limited until line was replaced or repaired.

**Cumulative Impacts:** Construction activities of any kind (i.e., all of the projects in the cumulative scenario) would likely inconvenience visitors on a temporary basis for the length of the projects due to visual impacts, traffic delays, fugitive dust, noise, and possible closings of tourist attractions. Ultimately however, these projects would have a beneficial minor to moderate cumulative effect on visitor use and experience from improved access, information availability, and better facilities. If the power line were to fail under this alternative, cave tours would cease, thereby contributing a minor to moderate adverse degree to the overall cumulative effect. The overall cumulative effect of all of these projects on visitor experience would still be beneficial and minor to moderate in degree.

**Conclusion:** With no construction, this alternative would have no effect to the visitor experience; however, in the long-term, visitors would continue visiting the caves until the potential failure of the power line resulting in impacts to visitor safety and visitor enjoyment. Cumulatively, this

alternative would have beneficial minor to moderate effects on visitor use and experience when considered with other past, present, and reasonably foreseeable future actions

### **Impacts of Alternative B (Preferred) - Install New Electrical Line**

Construction of a new trail under this alternative would enable the Monument to continue cave tours, providing visitor opportunities. These improvements would have a long-term, minor to moderate beneficial effect to visitors in this area of the Monument.

Construction activities would increase noise and the trail and caves would be closed for 2-5 days during construction canceling cave tours and closing the trail for short-term impact, while helicopter activities occur. Mitigation measures will be applied to reduce impacts by scheduling construction during lower visitor use times of the season. With the mitigation measures, construction activities are expected to have short-term, minor, adverse effects on visitors in the localized area. The removal of the old power line will occur after the installation of the new power line to provide continued electrical service during the installation.

The new power poles and line would alter the viewshed for visitors hiking the cave access trail as the power line is relocated to an alternate site. The power poles located at Site 2 and line from the upper portions of the trail will be visible to visitors providing a minor impact to the recreational experience however; the line would provide continued electrical service to the caves thus allowing continued cave tours. These effects to visitor use and experience are long-term, and minor to moderate degree.

Visitation would be reduced under Option 1 or 2. Construction for Option 1 could be construction during a low visitation season or when the cave is closed, but must be done when there is no visitor use to allow for construction to occur above the trail. Option 2 could also be constructed during low visitation or following closure for the season. Tours would be limited to protect employees and visitors while construction work took place along the trail in the cave causing minor short-term impacts to the visitor experience.

**Cumulative Impacts:** Construction activities of any kind (i.e., all of the projects in the cumulative scenario) would likely inconvenience visitors on a temporary basis for the length of the projects due to visual impacts, traffic delays, fugitive dust, noise, and possible closings of tourist attractions. Ultimately, however, these projects would have a beneficial minor to moderate cumulative effect on visitor use and experience from improved access, information availability, and better facilities. The proposed improvements to visitor use under this alternative, namely the more efficient electrical power to the caves, would add to the overall beneficial cumulative effect to a minor degree.

**Conclusion:** Construction of the new trail power line and poles would have short-term, minor, adverse effects to visitors from noise, dust, and trail closure. Beneficial effects of this alternative include continued and reliable electrical service to the caves allowing the monument to continue to offer visitor opportunities in the form of cave tours. Cumulatively, this alternative would have a minor to moderate beneficial cumulative effects to visitor use and experience when combined with other past, present, and reasonably foreseeable future actions that benefit the visitor experience.

## Park Operations

### Intensity Level Definitions

- Negligible:** Park operations would not be affected or the effect would be at or below the lower levels of detection, and would not have an appreciable effect on park operations.
- Minor:** The effect would be detectable, but would be of a magnitude that would not have an appreciable adverse or beneficial effect on park operations. If mitigation were needed to offset adverse effects, it would be relatively simple and successful.
- Moderate:** The effects would be readily apparent and would result in a substantial adverse or beneficial change in park operations in a manner noticeable to staff and the public. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.
- Major:** The effects would be readily apparent and would result in a substantial adverse or beneficial change in park operations in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, could be expensive, and their success could not be guaranteed.

### Impacts of Alternative A - No Action

Under this alternative, there would be no change to park operations. Monument staff would continue to conduct cave tours at the present demand until failure of the line. Power line and poles would continue to be assessed and ranked in order of priority. Given the current status of the power line, the impact on park operations would be negligible. If the line were to fail, park operations would have minor to moderate adverse impacts to accommodate the reduced tour sizes and amounts as tours would continue using flashlights or other alternative lighting sources.

**Cumulative Impacts:** Construction activities of any kind (i.e., all of the projects in the cumulative scenario) would likely increase the workload of NPS and USFS employees on a temporary basis for the length of the projects due additional management, coordination, and oversight of these projects, thereby having an adverse minor cumulative effect to employee operations in the short-term. On a long-term basis, these projects would lessen the employee workload mainly by improving facilities which would reduce maintenance needs, thereby having an overall, long-term, minor beneficial effect to employee operations. If the power line were to fail under this alternative, cave tours would be reduced or would cease, which would increase the workload on NPS employees, thereby contributing a minor to moderate adverse degree to the overall cumulative effect. The overall cumulative effect of all of these projects on employee operations would still be minor and beneficial in the long-term.

**Conclusion:** In the short-term, there would be no change in current park operations. Cave tours and other Monument operations would continue and the current power line and pole would not be maintained by staff and electric company employees. Cumulatively, there would be an overall minor beneficial effect to employee operations from improved efficiencies and facilities, and this alternative would contribute a minor workload increase if the power line were to fail, but the overall cumulative effect would still be minor and beneficial.

## Impacts of Alternative B (Preferred) - Install New Electrical Line

Under this alternative, a new power line and three new sets of poles would be installed to provide power to the caves. Construction would be performed by Rocky Mountain Power employees; however park staff would advise and assist in the project. This would add to the workload of the staff involved in the project to a negligible to minor degree, and would cease following construction activities.

Staff would also rehabilitate pole sites from the removed power poles making minor, short-term increase to workloads. By constructing a new power line and poles, removing the line from high rockfall zones, would reduce the need for maintenance and repair on the line thus reducing need for line maintenance for a minor workload change.

Daily park activities such as cave tours, cave security, and communications may have moderate effects beneficially from the new power line. The new power line would provide more reliable electrical service and enable the monument to provide increased security through the cave alarm system aided by a hard lined telephone service. The power line would also include fiber optic cable enabling staff to utilize telephone communications to the other facilities in the monument. The proposal would not add any additional work load to monument staff or power company employees.

Impacts to park operations for Option 1 would be minor during installation and would require minor long term maintenance to protect the line for potential rock fall damage. Option 2 would affect tour operations for reduced tours or closures during construction causing minor short term impacts. Long-term maintenance would be moderate resulting in minor impacts on park operations, as the line would be buried requiring accessibility issues to work on the line.

**Cumulative Impacts:** Construction activities of any kind (i.e., all of the projects in the cumulative scenario) would likely increase the workload of NPS and USFS employees on a temporary basis for the length of the projects due additional management, coordination, and oversight of these projects, thereby having an adverse minor cumulative effect to employee operations in the short-term. On a long-term basis, these projects would lessen the employee workload mainly by improving facilities which would reduce maintenance needs, thereby having an overall, long-term, minor beneficial effect to employee operations. The proposed improvements to park operations under this alternative, namely the more efficient electrical power to the caves, would improve employee communications, thereby adding to the overall beneficial cumulative effect to a minor degree. The overall cumulative effect of all of these projects on employee operations would still be minor and beneficial in the long-term.

**Conclusion:** Implementation of this alternative may decrease the workload of Monument and power company staff to a negligible degree due to the decrease in required maintenance and repairs to the new power line. Cumulatively, the improvements associated with this alternative when considered with other past, present, and reasonably foreseeable future actions would have an overall beneficial minor effect to employee operations in the long-term.

## CONSULTATION AND COORDINATION

### Internal Scoping

An interdisciplinary team of professionals from Timpanogos Cave National Monument and the National Park Service Intermountain Regional Office conducted internal scoping. Interdisciplinary team members met on December 1, 2008 to discuss the purpose and need for the project; various alternatives; potential environmental impacts; possible mitigation measures; and public outreach. Over the course of the project, team members also conducted site visits to view and evaluate the proposed locations for the new power line replacement. Because the proposed power line begins in the Uinta-Wasatch-Cache National Forest, NPS invited the U.S. Forest Service (USFS) to be a cooperating agency on this project, to which they accepted on February 3, 2009.

### External Scoping

External scoping was initiated with the distribution of a letter to inform the public, stakeholders, local governments, and agencies of the proposal to construct a new electrical line, and to generate input on the preparation of this Environmental Assessment. The letter dated December 12, 2008 was mailed to over 125 residents the Utah Valley area. In addition, a press release was distributed to local newspapers and the letter was posted on the National Park Service *Planning, Environment, and Public Comment* website. The public was given 30 days to comment on the project.

During the scoping period, the Monument received a total of four responses; all of them except one in support of constructing the new electrical line. The outstanding comment was from the Department of Transportation who provide specific recommendations about the proximity of the power line to the road, the height of the power line, and how to coordinate this effort with them. The Monument has incorporated these concerns into the preferred alternative and is working with them to coordinate on the next steps for this project.

### Environmental Assessment Review and List of Recipients

The Environmental Assessment will be released to the public for a 30-day review and comment period. To inform the public of the availability of the Environmental Assessment, the Monument will distribute a letter to its mailing list and will issue a press release to local newspapers. A copy of the mailing list is available by request from the Monument. The document will be posted on the internet and copies will be provided to interested individuals, upon request.

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



## List of Preparers

### **Preparers (developed EA content):**

Denis Davis, Superintendent, National Park Service, Timpanogos Cave National Monument, American Fork, Utah

Cheryl Eckhardt, Environmental Compliance Specialist, National Park Service, Intermountain Region Support Office, Denver, Colorado

Camille Pulham, Integrated Resource Program Manager, National Park Service, Timpanogos Cave National Monument, American Fork, Utah

### **Consultants (provided information):**

Michael Gosse, Chief Ranger, National Park Service, Timpanogos Cave National Monument, American Fork, Utah

Cody Nunley, Transmission Engineer, Rocky Mountain Power, PacifiCorp, Salt Lake City, Utah

### **Cooperating Agency**

Uinta-Wasatch-Cache National Forest

## REFERENCES

- NPS 1992     *General Management Plan*, National Park Service, Timpanogos Cave National Monument, 1992
- NPS 2006     *Management Policies*, National Park Service, U.S. Department of the Interior, December 2006
- NPS 2007     *First Annual Centennial Strategy for Timpanogos Cave National Monument*, National Park Service, August 2007
- NPS 2004     *Wildland Fire Management Plan for Timpanogos Cave National Monument*, National Park Service, July 2004
- USFWS 2008   *Endangered, Threatened, Proposed, and Candidate Species for Utah Counties*, dated November 2007, information retrieved from U.S. Fish and Wildlife Service website on December 24, 2008
- UDOW 2008   *Utah's State Listed Species by County*, dated July 1, 2008, information retrieved from the Utah Division of Wildlife website on December 24, 2008