

National Park Service
U.S. Department of the Interior

Carlsbad Caverns National Park
New Mexico

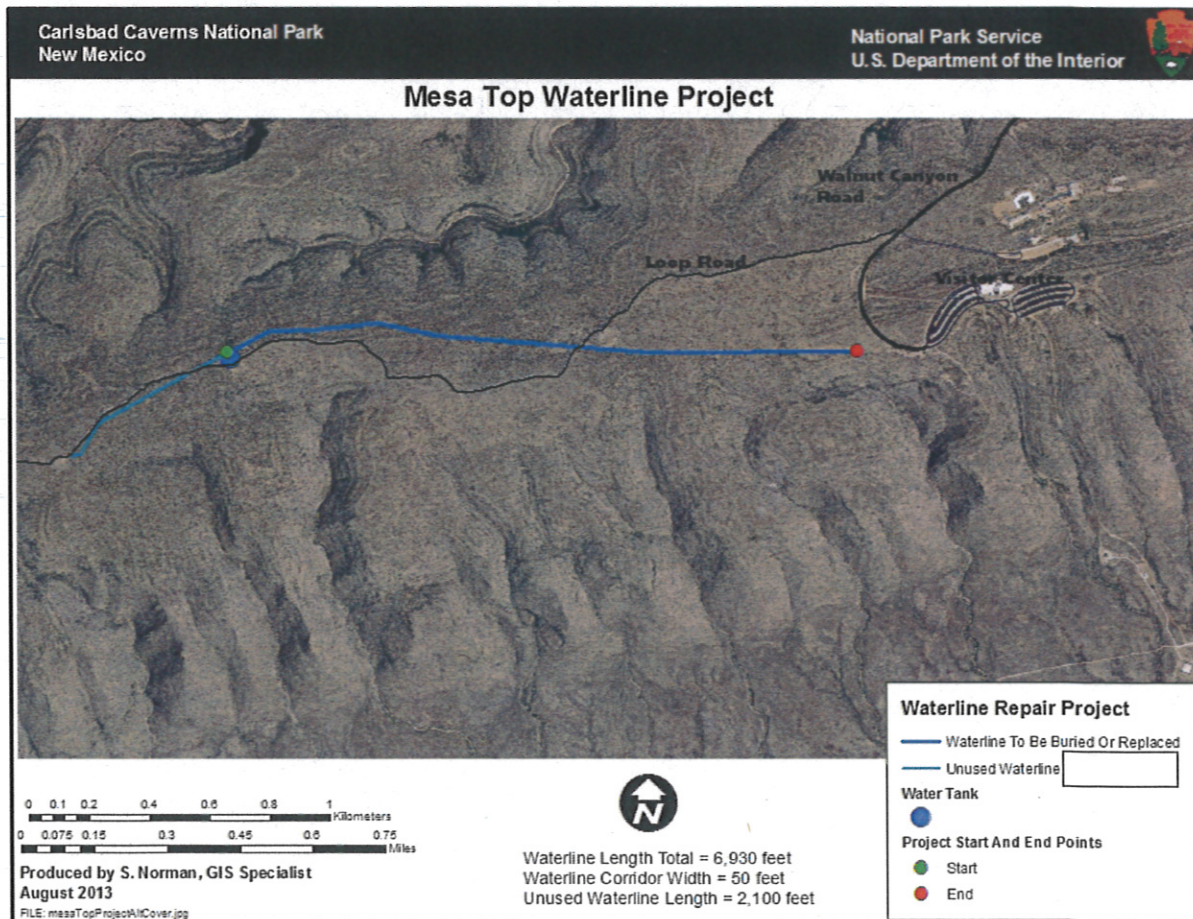


Reconstruction of Mesa Top Waterline

At Carlsbad Caverns National Park

Environmental Assessment

August 2013



RECONSTRUCTION OF MESA TOP WATERLINE AT CARLSBAD CAVERNS NATIONAL PARK

ENVIRONMENTAL ASSESSMENT

SUMMARY

Carlsbad Caverns National Park encompasses approximately 47,000 acres of wilderness and non-wilderness lands in the Guadalupe Mountains of southern New Mexico. The park is a designated World Heritage Site that contains many world-class caves including Carlsbad Cavern. Carlsbad Cavern is also home to a world-famous colony of Brazilian free-tailed bats and one of the largest colonies of cave swallows in the United States. About 250 acres of surface area around Carlsbad Caverns have been developed to provide access and support for the employees and visitors to Carlsbad Caverns National Park.

Carlsbad Caverns National Park proposes to replace an existing primary waterline which was severely damaged by natural events. This above-ground pipeline is the park's main potable water distribution line for the visitor center and park offices. The waterline, which is 6,930 feet long and 8 inches in diameter, was subjected to below freezing temperatures of unusual duration in February 2011, causing water to freeze along several portions of the line. The Loop Fire followed in June 2011, damaging much of the insulation on the pipeline and several wooden pipeline support blocks.

The proposed project is needed in order to restore a permanent reliable source of water to the park, free from the ravages of nature. The park receives approximately 400,000 visitors annually, and requires a constant reliable source of potable water. Any disruption to water system operations could impact the visitors and employees health and safety, as well as their enjoyment of the natural and cultural resources of the park.

This Environmental Assessment (EA) evaluates five alternatives: Alternative A-No Action Alternative, which would maintain the present state of disrepair and use of the existing above-ground pipeline; Alternative B, which would repair and maintain the damaged portion of the existing pipeline; Alternative C-complete replacement of the existing above-ground pipeline using the exact same technology, materials and location as the existing pipeline; Alternative D-replacement of the existing pipeline with a new, buried pipeline; and Alternative E, which would remove the existing pipeline and storage tank and replace it with a pressure-regulated, on-demand pumping system.

The EA 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 the park's resources and values, and 3) identifies mitigation measures to lessen the degree or extent of these impacts.

PUBLIC COMMENT

If you wish to comment on the Environmental Assessment, you may post comments online at <http://parkplanning.nps.gov/>. That is the preferred method. Or, you may mail comments to the name and address below. This Environmental Assessment will be on public review for 30 days from the posting date. 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.

Superintendent
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PURPOSE AND NEED

Introduction and Background

Carlsbad Caverns National Park was initially established as Carlsbad Cave National Monument by President Calvin Coolidge on October 25, 1923. The name was changed to Carlsbad Caverns National Park in 1930 by Congress. The park encompasses approximately 47,000 acres of wilderness and non-wilderness lands in the Guadalupe Mountains of southern New Mexico. The park is a designated World Heritage Site that contains many world-class caves including the famed Carlsbad Cavern. Carlsbad Cavern is also home to a world-famous colony of Brazilian free-tailed bats and one of the largest colonies of cave swallows in the United States.

To satisfy housing and park operational needs of this popular national park, offices, residences, and parking areas were constructed above Carlsbad Caverns near the natural entrance to the cave beginning in 1926. In 1961-62, a period of major facility expansion in the NPS known as Mission 66 left its mark on Carlsbad Caverns. During the Mission 66 era, the visitor center and maintenance areas were expanded and additional buildings and infrastructure were constructed to provide housing and utilities for park personnel.

About 250 acres of surface area around Carlsbad Cavern have been developed to provide access and support for the several thousand annual visitors to the park.

Description of the Problem

A section of above-ground water distribution pipeline, 6,930 feet long and 8 inches in diameter, was subjected to freezing temperatures of unusual duration in February 2011, causing water to freeze along several portions of the line. The Loop Fire followed in June 2011, destroying much of the insulation on the pipeline and several wooden pipeline support blocks. The insulation contained asbestos and hence required abatement and removal before repairs or replacement of the line could be done. The asbestos abatement portion of the project was completed in November 2012. Because the pipeline in its current condition is lacking insulation, it is subject to freezing temperatures which may cause future ruptures. The damaged support blocks no longer provide support and stability; fluctuations in water pressure cause the pipe to move laterally, which may further damage the pipe. Because this section of water pipeline is part of the park's distribution system, it must be kept filled and pressurized in order to serve domestic and fire suppression system needs. Currently, the pipeline remains in service, in its present state of disrepair.

Because of the possible damage from freezing weather, maintenance personnel have tried keeping the line as empty as possible and utilizing the storage tank to provide water when needed. The pipeline is used as is, under the present state of disrepair. This is the only pipeline from the visitor center to the storage tank. Water is transported to the water system connection point by a buried pipeline, from below the escarpment up to the connection point located at the visitor center, which is at the top of the escarpment. From this connection point, water is transported to the storage tank. Water from the storage tank is then transported back to the visitor center using this same waterline to provide the park's water needs. This portion of pipeline from the visitor center connection point to the storage tank is what requires the repairs and/or replacement. This is the project proposal.

Purpose and Need

The purpose of this Environmental Assessment(EA) is to examine the environmental impacts associated with the proposed reconstruction of a 6,930 feet length of the park's main waterline. The waterline is located at the top of the escarpment (mesa) and runs east to west from a connection point just below the escarpment at the visitor center, to the water storage tank. This EA was prepared in accordance with the National Environmental Policy Act(NEPA)of 1969, regulations of the Council on Environmental Quality(CEQ)(40 CFR Section 1508.9), and NPS Director's Order(DO)-12 (*Conservation Planning, Environmental Impact Analysis, and Decision-Making*).

This proposal evaluates the impacts and benefits resulting from proposed actions to repair or replace the existing above-ground waterline, which was severely damaged by natural events. The park receives hundreds of thousands of visitors annually, and requires a constant reliable source of potable water. Any disruption to the operation of the water system could impact the park staff's and visitors' health and safety and their enjoyment of the natural and cultural resources of the park. The proposed project is needed to restore a permanent, reliable source of water to the park, free from the ravages of nature. The pipeline is the park's main potable water distribution system for the visitor center, residences, and park offices.

Project Objectives

1. To restore a permanent reliable source of water to the park for many years of service to the public and park employees.
2. To design the project such that the pipeline is not damaged by natural events such as wildfires and below-freezing temperatures, which occur periodically at the park.
3. To restore the disturbed natural resources and cultural landscape to a more natural state.
4. To minimize impacts to cave/karst resources.

Relationship of the Proposed Action to Other Plans and Policies

The proposed park waterline project is consistent with the National Park Service *Management Policies 2006*, the Carlsbad Caverns General Management Plan (1996), the Carlsbad Caverns Resource Protection Plan (2002), and the Carlsbad Caverns Cave/Karst Management Plan (2006). Replacement of the water system was initially proposed through the Carlsbad Caverns General Management Plan (1996).

This proposal has been developed to comply with the direction provided by *Management Policies 2006*. Relevant sections of this policy document include:

Section 4.8.1.2 (Karst) "If existing or proposed developments do or will significantly alter or adversely impact karst processes, these impacts will be mitigated."

Section 5.3.5.2.7 (New Construction) "New buildings, structures, landscape features, and utilities may be constructed in a cultural landscape if existing structures and improvements do not meet essential management needs, and new construction is designed and sited to preserve the landscape's integrity and historic character..."

Section 9.1.1.5 (Siting Facilities to Avoid Natural Hazards) “The Service will strive to site facilities where they will not be damaged or destroyed by natural physical processes.”

Section 9.1.5 (Utilities) “Energy, water, and wastewater systems will be sited outside park boundaries whenever possible. *In-park utilities* will be unobtrusive as possible and have the least possible resource impact.”

The project proposal also complies with the Carlsbad Caverns General Management Plan(1996)which describes planned action under the *Water Systems* section and states that the park’s existing water supply system will be replaced... and criteria shall include: that the water system “provide safe, potable water, in a cost-effective, energy-efficient and sustainable manner over the long term.”

IMPACT TOPICS RETAINED FOR FURTHER ANALYSIS

Issues and concerns affecting the proposed action were identified by specialists in the National Park Service, as well as by the New Mexico State Historic Preservation Office (SHPO). Impact topics are the resources of concern that could be affected by the range of alternatives. Specific impact topics were developed to ensure that alternatives were compared on the basis of the most relevant topics. The following impact topics were identified on the basis of federal laws, regulations, orders, and National Park Service *Management Policies 2006*, and from input by the SHPO. A brief rationale for the selection of each impact topic is given below.

Visitor Use and Experience

Visitors would be subject to minor delays during installation of the pipeline; park access may be temporarily closed as heavy equipment is moved into position. Water use contingencies may develop as waterline is temporarily inoperable during construction.

Geology and Soils

There would be some disturbance to soils affecting surface drainage, due to removal of old pipeline and construction of new pipeline. There would be some disturbance to soils downslope of the construction route during construction, caused by surface water movement during precipitation events.

Cave/Karst Resources

Carlsbad Caverns National Park is located within a cave/karst system. There is the possibility of impacts to sub-surface cave/karst resources. These impacts will be addressed.

Threatened and Endangered Species

The project site would be inspected for the presence of threatened and endangered (T&E) plants and wildlife species before construction activities would be allowed to start. The park will maintain coordination with U.S. Fish and Wildlife Service (USFWS). In the event something is found, the park would protect the T&E species from disturbance, consult with USFWS, and mitigate the impacts through approved mitigation measures.

Vegetation

Some vegetation would be destroyed in localized areas as a result of the new construction and direct disturbance from human and vehicular traffic, operation of heavy equipment, and installation of pipeline materials.

Wildlife

Wildlife and their habitats would be displaced in localized areas as a result of the new construction, direct disturbance from human and vehicular traffic, operation of heavy equipment and installation of pipeline materials.

Visual Resources

Scenic views are one of the assets of many national parks. The viewshed from visitor use facilities would be impacted by construction activities, during and after construction of the pipeline. Depending on the alternative selected, i.e. above-ground or buried pipeline, the visual resources would receive some level of impact. Dust and particulates may temporarily impact the viewshed.

The park has identified the views south and west from the visitor center as worthy of protection. This is the area in which the project is located. Visual intrusions will be kept to a minimum at the construction site to be consistent with NPS Management Policies 2006.

Cultural Resources

The project would be located within to a historic district and cultural landscape. As such, impacts to the cultural resources will be addressed. An Assessment per Section 106 of the National Historic Preservation Act was conducted.

Native American Concerns

The project would be located within a natural landscape. Impacts from construction could affect the natural landscape of the area which may affect Native American concerns.

Park Operations (including Fire Management)

Park operations may experience a temporary shift in management during the construction of the pipeline project, as water use may be impacted. Vehicle traffic may be affected, as construction equipment utilizes park roads to access project site. Increased noise levels from operation of the construction equipment may be noticeable during certain times of the day. Fire suppression on park facilities is largely dependent on the availability of water and lots of it. Fire management equipment utilizes park fire hydrants to effectively suppress fires.

Air Quality

Carlsbad Caverns National Park is a mandatory Class I area, which means that air quality values will be protected. NPS Management Policies 2006, states that the park service "will comply with all federal, state, and local air quality regulations and permitting requirements." The National Park Service has a responsibility to protect the park's air quality related values, including visibility, plants, animals, soils, water quality, cultural objects and structures, and

human health. The park would determine if any regulations or permitting requirements are required for this project.

Soundscape Management

The project would be located near both the Carlsbad Cavern Natural Entrance and the Visitor Center. Visitors and wildlife would hear the sounds of construction equipment over ambient sound levels. NPS Management Policies 2006, states, “The National Park Service will preserve, to the greatest extent possible, the natural soundscapes of the parks,” and, “the Service will restore to the natural condition wherever possible those park soundscapes that have become degraded by unnatural sounds (noise), and will protect natural soundscapes from unacceptable impacts.”

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

Some impact topics were dismissed from further consideration, as listed below. During internal scoping, the park’s interdisciplinary team (IDT) 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 nonexistent, negligible, or minor, there is no potential for significant impact and further impact analysis is unnecessary. These impact topics were dismissed from further analysis. However, if resource effects are unknown or are potentially at the moderate or higher level of intensity and the potential for impacts is likely, the analysis of that resource as an impact topic was carried forward.

Within this section of the EA, 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 impact topics were identified on the basis of federal laws, regulations, and orders; NPS Management Policies 2006; and NPS knowledge of limited or easily impacted resources. The rationale for dismissing specific topics from further consideration is given below.

Wilderness Area

The proposed project site is located outside the park’s wilderness boundary. Therefore, the topic of Wilderness Area was dismissed as an impact topic in this document.

Prime and Unique Farmlands

In August 1980, the Council on Environmental Quality (CEQ) directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture’s Natural Resources Conservation Service (NRCS) as prime or unique. Prime or unique farmland is defined 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. According to NRCS, none of the soils in the project area are classified as prime and unique farmlands. Therefore, the topic of prime and unique farmlands was dismissed as an impact topic in this document.

Floodplains

The project area is not located in a floodplain. Therefore, a Statement of Findings for floodplains will not be prepared and the topic has been dismissed from further analysis.

Socioeconomic Environment

The proposed action would not change local and regional land use, nor would it impact local businesses or other agencies. A scenic loop road within the project area would be closed to vehicle traffic for a period of one to two days maximum as needed. This would have negligible impacts upon park visitation. Therefore, socioeconomic environment will not be addressed as an impact topic 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. The proposed action would not have disproportionate health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998). Therefore, environmental justice was dismissed as an impact topic 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" (33USC Section 1251 et seq.) The proposed project site does not contain surface waters; it is mostly dry, except for periodic storm events. The proposed project would have little or no effect on surface or subsurface waters. Therefore this topic has been dismissed from further analysis.

Wetlands

Under the Clean Water Act, the term "wetlands" means "those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." No wetlands are located near the proposed project site; therefore, further analysis of wetlands has been dismissed from further analysis.

Paleontological Resources

National Park Service policy states that paleontological resources (fossils), including both organic and mineralized remains in body or trace form, are to be protected, preserved, and managed for public education, interpretation, and scientific research (NPS Management Policies

2006). There are no known paleontological resources within the project site. Therefore, the topic of paleontological resources has been dismissed.

Museum Collections

None of the alternatives of this project would have an impact on the Carlsbad Caverns National Park's museum collection. Therefore, the topic of Museum Collections has been dismissed from further analysis.

Ethnographic Resources

The Park consulted by letter all 14 Traditionally Associated Tribes and Pueblos on the project. Only Isleta Pueblo, Ysleta del Sur Pueblo, and the Hopi Tribe responded, and they stated they had no areas of concern. No ethnographic resources have been identified in the proposed project "Area of Potential Effect (APE)." Therefore, the topic of Ethnographic Resources has been dismissed from further analysis.

Lightscape Management

There is currently no lighting at the existing pipeline site. None of the alternatives include lighting at the proposed pipeline site. Therefore, lightscape management was dismissed from further analysis.

Climate Change and Sustainability

With respect to climate change, there are many variables that are not understood or defined. Therefore, the analysis in this document is based on past and current weather patterns.