



**National Park Service
U.S. Department of the Interior**

**Death Valley National Park
Regions 8, 9, 10 and 12**

**FINDING OF NO SIGNIFICANT IMPACT
REHABILITATION OF WATER AND WASTEWATER SYSTEMS AT
FURNACE CREEK AND COW CREEK**

Recommended:

Mike Reynolds
Superintendent, Death Valley National Park

Date

Approved:

for David Szymanski
Regional Director, Interior Regions 8, 9, 10 and 12, National Park Service

Date

1. Introduction

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine actions and environmental impacts associated with the proposed project to rehabilitate the water and wastewater systems at Furnace Creek and Cow Creek in Death Valley National Park, Inyo County, California (see Figure 1). The project is needed to address critical infrastructure issues and related conditions that adversely impact park employee and visitor experiences, and park operations. The statements and conclusions reached in this Finding of No Significant Impact (FONSI) are based on documentation and analysis provided in the EA and associated decision file. To the extent necessary, relevant sections of the EA are incorporated by reference below.

2. Selected Alternative and Rationale for the Decision

Two alternatives were analyzed in detail in the EA: Alternative A, the no-action alternative, which would result in continued reliance on existing deteriorating water and wastewater systems in Furnace Creek and Cow Creek without rehabilitation activities except for the anticipated and increasingly frequent required repairs, and Alternative B, the proposed action/preferred alternative, which includes rehabilitation of the water and wastewater systems at Furnace Creek and Cow Creek to ensure reliable services for all visitors, staff, residents, and park partners and accommodate future visitation and growth. Detailed descriptions of the actions for each area are described in Chapter 2 of the EA.

After thorough analysis of potential resource impacts, consultation with agencies, and review of stakeholder and public comments, the NPS preferred alternative (Alternative B) was selected, as described on pages 4 through 7 of the EA. Responses to substantive public comments received during the comment period following publication of the EA are included in Appendix A of this FONSI.

In the harsh desert environment, reliable infrastructure is important to the health and safety of both visitors and staff. The project will reduce NPS expenditures and staff time on emergency repairs and piecemeal replacements of outdated and failing infrastructure, such as water and wastewater systems, and unplanned outages compromise the visitor experience. The NPS will implement the selected alternative to address the most important issues related to park employee and visitor experiences, and park operations. The selected alternative includes resource protection measures to minimize the degree and/or severity of adverse impacts on cultural resources; special status wildlife species; water quality; visitor use and experience; and public health, safety, and park operations.

Rationale

The NPS selected Alternative B: Rehabilitate Water and Wastewater Systems at Furnace Creek and Cow Creek as the alternative for implementation because it best meets the project purpose and need without causing significant impacts to park resources. Alternative B will resolve the degraded

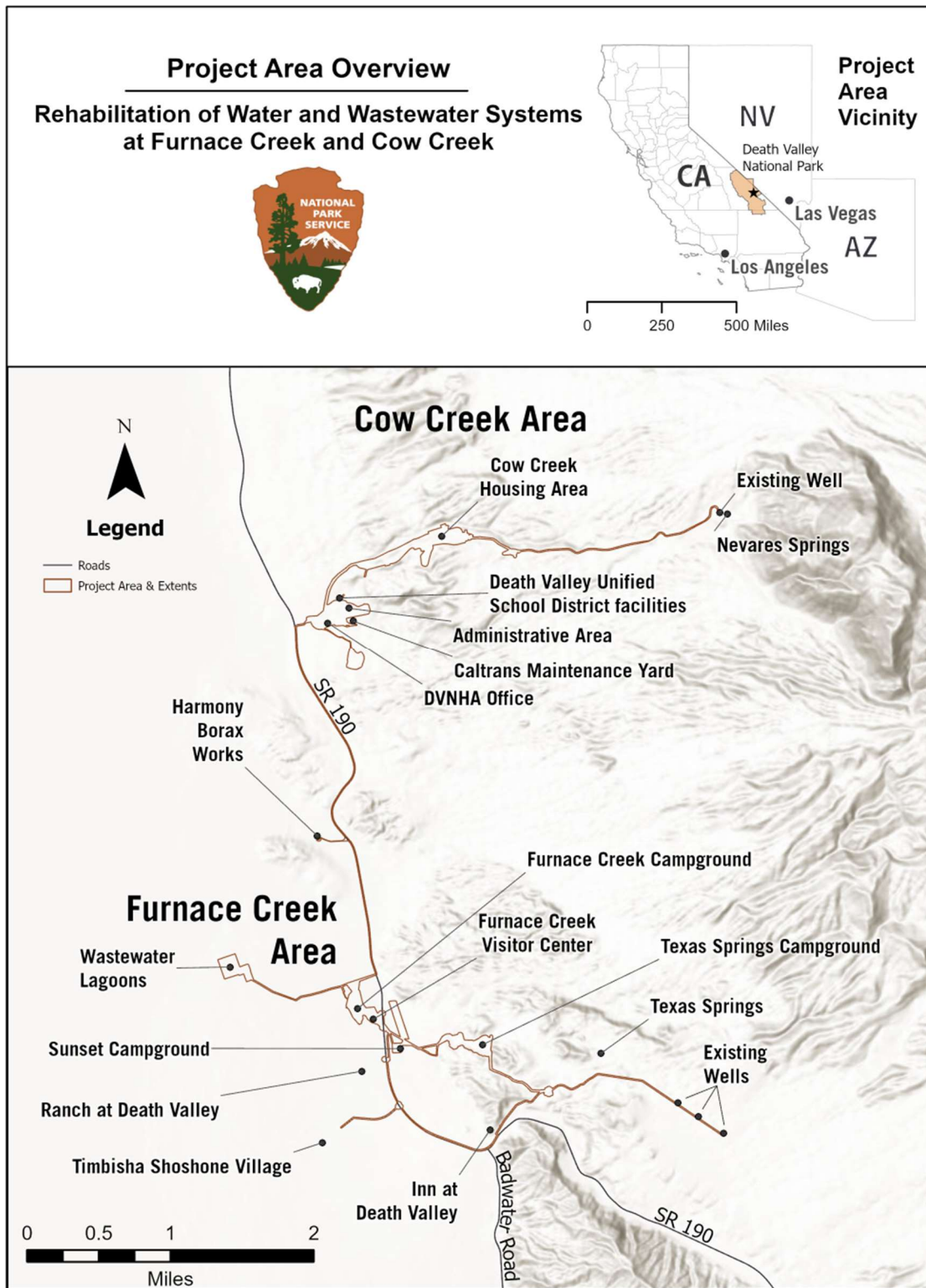
existing conditions that would continue under Alternative A: No Action. The selected alternative will:

- Modernize water and wastewater systems to provide ease of operation and repair while withstanding environmental factors of extreme dryness, heat, seismic forces, mineralized water, and wind and dust storms;
- Upgrade water and wastewater systems to support increasing park visitation and provide reliable water and wastewater services—especially potable water—to ensure the safety of visitors, staff, and residents; and
- Rehabilitate water and wastewater systems with a design that reduces potential impacts to sensitive cultural and environmental resources adjacent to system infrastructure.

Details of the selected alternative and other alternatives considered are described in Chapter 2 of the EA. In accordance with NPS *Management Policies 2006*, a Non-Impairment Determination for the selected alternative was also prepared (Appendix B).

Figure 1. Location of Project Area in Death Valley National Park

Figure Source: (Rehabilitation of Water and Wastewater Systems at Furnace Creek and Cow Creek Environmental Assessment 2024)



3. Mitigation Measures and Best Management Practices

Mitigation measures are included for implementation under the selected alternative to avoid, reduce, rectify, or compensate for project-specific impacts identified during the NEPA review process. Best Management Practices (BMPs) are existing policies, practices; and measures required by law, regulation, or NPS policy that reduce the environmental impacts of designated activities, functions, or processes. The mitigation measures and BMPs that will be implemented under the selected alternative are presented in Appendix B of the EA. The NPS has the authority to implement the mitigation measures under the Organic Act, the Wilderness Act, the National Historic Preservation Act, NPS Management Policies 2006, park specific regulations, and other federal and state applicable requirements.

4. Other Alternatives Considered

Alternative A: No-Action Alternative

A no-action alternative, Alternative A, was also analyzed in the EA. This alternative would involve continued reliance on existing deteriorating water and wastewater systems in Furnace Creek and Cow Creek without rehabilitation activities except for the anticipated and increasingly frequent required repairs. The water systems would continue to break several times per month, resulting in inconsistent availability of potable water and health and safety risks to visitors, staff, and residents. Disturbances from system failures and necessary repairs would continue to pose risks to sensitive cultural and environmental resources.

Alternatives Considered but Dismissed from Detailed Analysis

Throughout project development, several system configurations, construction methods, and materials were eliminated from further consideration and detailed analysis due to potential impacts to sensitive resources, operational inefficiencies, or cost-prohibitive construction costs. These decisions were guided by preliminary screening of environmental issues, internal discussions, and value analysis (VA) workshops conducted on October 18–20, 2022 and June 6–8, 2023 during the schematic design phase and design development phase of the project, respectively.

5. Public Involvement/Agency Consultation

As required by Section 106 of the National Historic Preservation Act, the NPS initiated consultations on August 29, 2022, with the office of the California State Historic Preservation Officer (SHPO). The Section 106 consultation process was conducted separately from, but concurrently with, the NEPA process to assess the effect of the proposed project on historic properties. The SHPO has provided their concurrence with a “no adverse effect” determination under Section 106 for this undertaking.

DEVA initiated tribal consultation with the Timbisha Shoshone Tribal Historic Preservation Office on August 29, 2022. Consultations with the Timbisha Shoshone Tribe continued when the NPS

submitted a preliminary end-of-fieldwork summary to the tribe for review and comment. On March 30, 2023, the NPS cultural resource contractor presented a summary of the results of cultural resource investigations to the Tribe during a quarterly meeting. Tribal representatives toured a select number of resources near the Nevares Springs area immediately following the March 30, 2023, meeting. Tribal consultation will continue through project implementation.

6. Finding of No Significant Impact

The project potentially affects the following resources, and their impacts were analyzed in the EA: cultural resources, recreation, visitor use, and human health and safety, special status wildlife species, and water quality; however, no significant adverse impact were identified. The affected environment for these issue topics can be found in Chapter 3, pages 8 through 39 of the EA. The affected environment and trends for the resources within each issue topic are generally confined within the administrative jurisdiction of the NPS. To evaluate the affected environment for park employee and visitor use and experience, and to some extent, cultural resources, the affected environment includes the context of the local community and visitors to the park who are impacted by the management of the resources described in the planning area.

No significant impacts to resources were identified that would require analysis in an Environmental Impact Statement (EIS). Whether taken individually or as a whole, the impacts of the selected alternative, including direct, indirect and cumulative effects, do not reach the level of a significant effect because adverse impacts associated with implementation will be minimal or temporary, lasting only as long as actions are being executed. The selected action will result in substantial long-term beneficial impacts. Best management practices and mitigation measures as outlined above will further minimize potential adverse impacts.

The selected alternative will result in no adverse effects to cultural resources. The project has been designed to avoid ground disturbance within most of the archaeological sites identified within the Area of Potential Effects. The project has been designed to avoid sites entirely or, when avoidance of the site boundary was not feasible due to other project constraints, the project was designed to avoid archaeological features and artifact concentrations that contribute to the National Register of Historic Places (NRHP)-eligibility of the site. In addition, mitigation measures discussed in Chapter 2 of the EA shall be implemented to avoid adverse impacts to archaeological resources located within the analysis area. The SHPO has provided their concurrence with a “no adverse effect” determination under Section 106.

Construction activities will temporarily introduce non-historic visual, audio, and atmospheric elements into the landscapes’ settings, but such intrusions will be short term, lasting only as long as construction. There will be no adverse impacts to the Nevares Homestead and *Timbidina'a* (Nevares) Springs Ethnographic Landscape with the implementation of these project design and mitigation measures.

Construction activities within the *Tumpisa*” Cultural District include the rehabilitation and replacement of the wastewater and water lines. These proposed activities will not adversely impact

the cultural resources that contribute to the NRHP-eligibility of the *Tumpisa* Cultural District. Furthermore, project related activities will also have no adverse effect on the culturally and traditionally significant locations previously identified as contributing elements to the district.

Proposed activities within the NRHP-listed Harmony Borax Works Historic District include replacement of the existing force main sewer line, which will occur within a 20-foot-wide area of disturbance, which corresponds with the previously disturbed east shoulder of SR 190. Because construction will occur in existing areas of disturbance that will be restored to pre-construction contours, there will be no adverse effects to the Harmony Borax Works Historic District, nor its contributing resources.

Construction activities will occur within a segment of the Twenty-Mule Team Borax Wagon Road Historic District that was previously impacted by the construction of SR 190, and as such these proposed activities will not further impact the Twenty-Mule Team Borax Wagon Road.

Construction activities within the Cow Creek Historic District include rehabilitation and replacement of both water and wastewater system lines; the replacement of the Cow Creek pool pump, filtration equipment, and chemical storage building; and design and construction of a new Architectural Barriers Act Accessibility Standard (ABAAS) parking stall at the west end of the existing parking stalls along with a new ABAAS sidewalk that leads to the existing pool deck. The construction of the new ABAAS stall and installation of a new sidewalk to the pool deck in the location of the existing parking area will not impact the existing pool setting or other aspects of its integrity as a contributing resource to the Cow Creek Historic District, and as such will not result in adverse impacts. The proposed sewer and water pipeline installation and rehabilitation will be conducted underground, and as such will not impact the viewshed or the contributing buildings and structures within the Cow Creek Historic District.

Water and sewer lines will be installed within the boundary of the Furnace Creek Visitor Center Historic District, which will impact the exterior vegetation and landscaping, which contribute to the integrity of the district. The exterior landscape, including plantings, will be rehabilitated and replaced with in-kind materials and plantings following the Secretary of the Interior's Standards for Rehabilitation of Historic Properties, and as such no adverse impacts will occur to the district.

A water line will be installed within the Furnace Creek Inn Historic District. The proposed water pipeline will be installed underground, and as such the proposed construction will not adversely impact the viewshed of the Furnace Creek Inn. Furthermore, the proposed construction will not adversely impact the contributing buildings or structures within the historic district.

Under the selected alternative, there may be short-term construction noise disruptions and/or closures of campground facilities. Construction traffic on roads leading to the campgrounds will result in increased noise and dust, which may adversely affect the visitor experience. However, increased dust and noise levels are not anticipated to affect the health and safety of campground users because of the implementation of mitigation measures and BMPs. Once complete, the systems installed under the selected alternative will result in reduced risks to public health and safety from infrastructure failure

and enhance visitor experiences by providing more reliable service. The systems will support anticipated future visitation levels and potential future facilities.

Under the selected alternative, construction-related activities could result in short-term, minimal, indirect impacts to special status wildlife species and associated habitat. Actions associated with the selected alternative that have potential for wildlife and habitat impacts include: addition of a fourth wastewater lagoon cell, operation of vehicles and mechanized equipment, vegetation removal and modification, trench construction and maintenance, above-ground disturbance (e.g., embankment construction, stockpiling), subsurface disturbance (e.g., excavation, drilling, horizontal directional drilling, pipe bursting, and cured-in-place pipe installation), erosion control and stabilization, generation of artificial light during nighttime construction, and staging of project equipment. With the implementation of project-specific mitigation measures, the risk of direct and indirect impacts to special status wildlife species and associated habitat is anticipated to be negligible or absent and would not result in trends towards Federal listing or loss of population viability within the project area and it is anticipated that wildlife will resume baseline activity levels within the project area following the conclusion of construction activities.

Under the selected alternative, construction-related activities may adversely affect water quality as a result of increased sediment movement into surface water during the construction period; however, BMPs will ensure there are no significant impacts. The construction activities may increase soil erosion and compaction potential or introduce sediment and pollutants to waterways. Post-construction permanent BMPs will be implemented where necessary to reduce long-term effects from land disturbance, increased runoff, and contaminated runoff. In the long term, the updated infrastructure is expected to require less maintenance and repair, further reducing the negative effects to water quality.

There will be no significant impacts to public health, public safety, or unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the NPS-selected alternative will not violate federal, state, tribal, or local environmental protection laws.

7. Conclusion

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA.

Based on the foregoing, it has been determined that an EIS is not required for this project and, thus, will not be prepared.

Note: Appendices include:

- Response to Substantive Public Comments
- Non-Impairment Determination

Appendix A: Response to Substantive Public Comments

National Park Service

US Department of the Interior

Death Valley National Park

California, Nevada



Rehabilitation of Water and Wastewater Systems at Cow Creek and Furnace Creek

Public Comment Summary Report

April 2024

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Acronyms and Abbreviations

BMPs	Best Management Practices
CFR	Code of Federal Regulations
EA	Environmental Assessment
NEPA	National Environmental Policy Act
NPS	National Park Service
park	Death Valley National Park
PEPC	Planning, Environment and Public Comment

Introduction

Pursuant to the National Environmental Policy Act of 1969 (NEPA) and its implementing regulations (40 *Code of Federal Regulations* [CFR] 1500–1508) and National Park Service (NPS) Director’s Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*, and accompanying NPS NEPA Handbook, the NPS prepared an environmental assessment (EA) for proposed improvements to the water and wastewater systems at Cow Creek and Furnace Creek Areas in Death Valley National Park (park). The proposed action will enhance employee and visitor experiences by providing more reliable service. The systems are designed to support anticipated future visitation levels and potential future facilities. Modifications are anticipated to protect natural resources by reducing sewage spills and reducing water loss via pipe seepage and breaks. Designs include mitigations to preserve and protect cultural resources through inventive engineering and construction methods. The systems will be upgraded to meet regulatory codes. Safety modifications will also benefit NPS utility operators and operations due to a reduction in the frequency of emergency repairs. In this public comment summary report, the NPS summarizes the substantive comments on the proposed action described in the EA and provides responses to concern statements raised in these comments.

This report provides a summary of the public comments received during the EA public comment period and includes NPS responses to substantive comments. The public comment period for the EA review was initiated with a press release sent to all local news outlets. The press release was posted on the park’s website, and the park also posted a link to the public-facing NPS Planning, Environment and Public Comment (PEPC) site on social media. This 48-day public comment period ran from January 5 to February 22, 2024, and provided the public an opportunity to comment on the two alternatives presented in the Rehabilitation of Water and Wastewater Systems at Cow Creek and Furnace Creek EA for managing the water and wastewater systems at Furnace Creek and Cow Creek. The EA for this project describes the environment that will be impacted by the alternatives and analyzes the environmental consequences of implementing each alternative.

The public was encouraged to submit their comments electronically through the PEPC website. Public comments were also accepted by mail and email. All mailed and emailed comments received were planned to be transcribed into the PEPC system for analysis, though no such comments were received.

Definition of Terms

Primary terms used in this document are defined below.

Correspondence: A correspondence is the entire document received from a commenter. It can be in the form of a letter, email, written comment form, note card, or petition. Each piece of correspondence is assigned a unique identification number in the PEPC system.

Comment: A comment is a portion of the text within a correspondence that addresses a single subject. It could include information such as an expression of support for or opposition to the use of a potential management tool, additional data regarding an existing condition, or suggestions for additional considerations in the impact analysis. Comments were determined to be substantive or non-substantive.

Substantive comment: Substantive comments raise, debate, or question a point of fact or present reasonable suggestions related to the project design. Substantive comments that were received during the public comment period are focused on three primary themes:

1. Suggested considerations for water conservation or the reuse of water
2. Suggested considerations for design features
3. Suggested considerations for natural resources

Non-Substantive comment: Non-substantive comments that were received during the public comment period fall into one of the following two categories:

1. Comments that support the proposed action and/or are out of scope of this project.
2. Comments that oppose the proposed action but do not raise a substantive concern and/or are out of scope of this project.

Public Comment Analysis

The NPS PEPC database was used to manage all submitted comments. The database stores the full text of each correspondence and allows each comment to be coded by topic. The database produces counts of the total number of correspondences and comments received, can sort comments by a particular topic, and provides demographic information on the source of each correspondence. During the public comment period for this project, the NPS received 13 unique pieces of correspondence from six states and Great Britain and identified eight substantive comments. All comments were submitted via the PEPC website. Attachment A includes detailed tables summarizing the numbers and types of comments received, as well as demographic information.

Comment analysis is a process used to compile and summarize public comments into a format that can be used by decision-makers and the project team. Comment analysis helps the project team in organizing, clarifying, and addressing technical information pursuant to NEPA regulations. It also aids in identifying additional topics and issues to be evaluated and considered throughout the planning process.

A coding structure was developed to capture the content of all the comments received and to help sort comments into logical categories by topic and issue. Analysis of the public comments involved evaluating each piece of correspondence, identifying individual comments within correspondence, assigning codes to comments, and determining whether the comment was substantive. All substantive comments were then reviewed in order to develop concern statements. Concern statements represent a

summary of the substantive issues received from the public that require a response. A response was prepared for each concern statement. These concern statements and corresponding responses are listed in the following section.

Public Comment Summary

Suggested Considerations for Water Conservation

Concern Statement: Commenters provided a suggestion related to water conservation.

- The following suggestion was made:
 - Recycle wastewater for watering systems in the park in order to conserve water.

Response: Although recycling wastewater is not within the scope of this project, rehabilitation of the water system will allow for more efficient use and conservation of water, as the current system suffers from pipe seepage and extensive pipe breaks.

Suggested Considerations for Design Features

Concern Statement: Commenters provided a range of suggestions related to specific water and/or wastewater design features.

- The following suggestions were made:
 - Given the park's increase in visitation, additional water/wastewater system capacity should be considered.
 - The gravity sewer model should be designed for potential severe weather or seismic events that may disrupt the system.
 - Design features should consider clean alternative energy sources.

Response: Commenters provided valuable suggestions for design features throughout the Furnace Creek and Cow Creek areas. The park's visitation doubled from 2009 through 2019 and is likely to continue to increase. The rehabilitated water and wastewater systems are designed to be more efficient and accommodate additional water use related to increased visitation without exceeding sustainable groundwater pumping rates. Design features to improve efficiency include new piping on both water and wastewater systems to help eliminate water losses due to leaks and the installation of meters to enhance the ability to detect leaks, should they occur.

The project design ensures enhanced service of the new system by incorporating features that improve functionality and efficiency while accounting for unique environmental conditions such as severe weather events or seismic activity. Though the existing gravity sewer model has been sufficient in withstanding previous severe weather events, the project design incorporates features to bolster the resiliency of the system. For example, the system will be using cured-in-place piping, which eliminates joints in the pipes, adding resiliency to external forces, as well as reducing construction-related surface disturbance. Additional manholes will further secure the piping in place during potential severe weather or seismic events.

As the focus of this project has been the rehabilitation of the water and wastewater systems at Furnace Creek and Cow Creek, the scope does not include adding clean energy sources to run them. Currently, there is an array of solar panels atop the Furnace Creek water plant, and it is a park management objective to investigate alternative energy systems, especially solar and water, to minimize energy consumption and environmental impacts. Where feasible, the park intends to pursue the use of solar energy as a separate effort.

Suggested Considerations for Natural Resources

Concern Statement: Commenters expressed concern regarding potential impacts to natural resources during project implementation.

- The following comments were made:
 - How could impacts on native species and their habitats be avoided, minimized, and/or reliably mitigated?
 - What are the opportunities to add design features that would increase resource sustainability and environmental protection?
 - What are the impacts of a new well (or wells) on hydrology given the extreme seasonal conditions that may impact the ability and capacity of this hydrology to provide an essential resource.

Response: Commenters provided valuable suggestions for protecting natural resources during project implementation. To avoid and minimize impacts on native species and their habitats, mitigation measures and Best Management Practices (BMPs) are included in preferred alternative to avoid, reduce, or compensate for potential project impacts. For example, the project area will be monitored to prevent the spread of nonnative or invasive vegetation species and, to the extent practicable, project staging areas will not be located within 0.15 miles of known water sources for desert bighorn sheep unless approved by a qualified biologist. The comprehensive list of mitigation measures and BMPs that will be implemented to protect native species and their habitats, under the preferred alternative, are presented in Appendix B of the EA.

To increase resource sustainability and environmental protections, construction approaches and design features were considered with environmental stewardship at the forefront. The new systems are designed to be more efficient while accommodating additional water use related to increased visitation without exceeding sustainable groundwater pumping rates. Design features to improve resource sustainability include new piping on both water and wastewater systems to help eliminate water losses due to leaks and the installation of meters to enhance the ability to detect leaks, should they occur. The total anticipated footprint of project activities was minimized to the most reasonable extent possible given the nature of work required to rehabilitate the water and wastewater systems with substantial underground components. Design plans include, where feasible, methods that reduce surface disturbance such as horizontal directional drilling, pipe bursting, and cured-in-place piping. The replacement of the water system will not create additional demand for water, but it will allow more efficient delivery of water by minimizing water losses from pipe seepage and repeated large pipe breaks that are worsening with time. Additionally, a new well and conversion of the existing research well to a backup water source will replace the water collection at Nevares Springs, preserving and protecting the area. As the current water and wastewater systems are increasingly experiencing frequent failures, the completed project will reduce associated environmental concerns and disturbances associated with unanticipated repairs while helping to ensure a safe source of water for the park.

Impacts of a new well on hydrology are not anticipated as water efficiency and conservation measures to reduce water loss and waste are incorporated into the system. As previously mentioned, the new well will replace the water collection at Nevares Springs, preserving the surface hydrology of the area. Additionally, the new systems will not increase water use beyond authorized levels. Though they are designed to accommodate additional use related to increased visitation or future administrative

developments, even during extreme seasonal conditions, they will not exceed sustainable groundwater pumping rates. With climate change leading to more severe weather events and prolonged droughts, a modernized water system is needed to withstand these conditions.

Attachment A: Public Comment Content Summary Tables

The following tables provide information on the numbers and types of comments received, as well as demographic information.

Table 1: Correspondence Count by Correspondence Type

Type of Correspondence	Number of Correspondences	Percentage
Web Form (PEPC)	13	100
Email	0	0
Letter	0	0
Total	13	100

Table 2: Coding Structure of Substantive Comments

Code / Category	Number of Comments	Percentage
DFI000 / Design Features	4	50
NR1000 / Natural Resources	3	37
WCI000 / Water Conservation	1	13
Total	8	100

Table 3: Geographic Distribution of Public Correspondences by State

State	Number of Correspondences	Percentage
California	5	43
Utah	2	17
Nevada	1	8
Illinois	1	8
Pennsylvania	1	8
North Carolina	1	8
Unknown	1	8
Total	12	100

Table 4: Geographic Distribution of Public Correspondences by Country

Country	Number of Correspondences	Percentage
United States	12	92
Great Britain	1	8
Total	13	100

*Note: All percentages have been rounded to reflect whole numbers.

Appendix B: Non-Impairment Determination

Non-Impairment Determination

Rehabilitation of Water and Wastewater Systems at Furnace Creek and Cow Creek Project Death Valley National Park

Prohibition on Impairment of Park Resources and Values

National Park Service (NPS) *Management Policies 2006* (section 1.4) require analysis of potential effects to determine whether or not proposed actions will impair a national park's resources and values. NPS decision makers must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on park resources and values. NPS has the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of the park, although that discretion is limited by the statutory requirement that NPS must leave resources and values unimpaired unless a particular law directly and specifically prescribes otherwise.

NPS *Management Policies 2006*, Section 1.4.4, explains the prohibition on impairment of park resources and values:

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

What is Impairment?

NPS *Management Policies 2006*, Section 1.4.5, What Constitutes Impairment of Park Resources and Values, and Section 1.4.6, What Constitutes Park Resources and Values, provide an explanation of impairment.

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, including the opportunities that otherwise would be present for the enjoyment of those resources or values.

Section 1.4.5 of NPS *Management Policies 2006* states:

An impact on any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the enabling legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified as a goal in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

Per Section 1.4.6 of *NPS Management Policies 2006*, park resources and values that have potential to be impaired include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and condition that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structure, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairment;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system;
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park, but this would not be a violation of the Organic Act unless the National Park Service was in some way responsible for the action.

How is an Impairment Determination Made?

Section 1.4.7 of *NPS Management Policies 2006* states, "[i]n making a determination of whether there would be an impairment, an NPS decision-maker must use his or her professional judgment. This means that the decision-maker must consider any environmental assessments or environmental impact statements required by the National Environmental Policy Act of 1969 (NEPA); consultations

required under Section 106 of the National Historic Preservation Act (NHPA); relevant scientific and scholarly studies; advice or insights offered by subject matter experts and others who have relevant knowledge or experience; and the results of civic engagement and public involvement activities relating to the decision.”

NPS *Management Policies 2006* further defines “professional judgment” as “a decision or opinion that is shaped by study and analysis and full consideration of all the relevant facts, and that takes into account the decision-maker’s education, training, and experience; advice or insights offered by subject matter experts and others who have relevant knowledge and experience; good science and scholarship; and, whenever appropriate, the results of civic engagement and public involvement activities relating to the decision.”

Impairment Determination

The National Park Service has determined that Rehabilitation of Water and Wastewater Systems at Furnace Creek and Cow Creek will not result in impairment of park resources and values. An impairment determination is made for the resource impact topics analyzed for the selected alternative. The impairment determination does not include discussion of impacts to topics such as visitor experience and public health and safety, as these topics do not constitute impacts to park resources and values subject to the no-impairment standard. This determination applies only to NPS lands and resources and has been rendered solely by NPS management.

Archeological Resources. Potential impacts to these resources were evaluated with respect to potential ground disturbance, discharge of water and/or wastewater, erosion, and contamination. NPS anticipates no adverse impacts, direct or indirect, as a result of the selected alternative. With the rehabilitated water and wastewater systems at Furnace Creek and Cow Creek, park operations and maintenance, as it relates to these systems, would be minimal and more predictable, having a long-term beneficial cumulative impact on this resource. The selected alternative is designed to avoid eligible archeological resources. If, during implementation, additional archeological resources are discovered, and it is determined that avoidance is not feasible, the NPS will work with the California State Historic Preservation Officer (SHPO) and appropriate tribal offices to propose and implement appropriate mitigation measures for cultural resources as a part of the subsequent Section 106 consultation under the NHPA. With avoidance or mitigation measures, implementation of the selected alternative will not result in impairment of archeological resources.

Cultural Landscapes. The construction activities are proposed within two National Register of Historic Places (NRHP)-eligible cultural landscapes: Nevares Homestead and *Timbidina'a* (Nevares) Springs Ethnographic Landscape. Potential impacts to these resources were evaluated with respect to potential ground disturbance, discharge of water and/or wastewater, erosion, and contamination. The actions resulting from the selected alternative will not have adverse impacts, direct or indirect, on these cultural landscapes within or adjacent to the project area. With the rehabilitated water and wastewater systems at Furnace Creek and Cow Creek, park operations and maintenance, as it relates to these systems, would be minimal and more predictable, having a long-term beneficial cumulative

impact on this resource. Implementing the selected alternative will not result in impairment of NRHP-eligible cultural landscapes.

Historic Districts. The construction activities will potentially affect the following NRHP-listed or eligible historic districts within the Area of Potential Effects for the proposed project: *Tumpisa* Cultural District, Harmony Borax Works Historic District, Cow Creek Historic District, Furnace Creek Visitor Center Historic District, and the Furnace Creek Inn Historic District. Potential impacts to these resources were evaluated with respect to potential ground disturbance, discharge of water and/or wastewater, erosion, contamination, and construction of new structures and infrastructure. The proposed actions, individually and collectively, may alter some of the characteristics of the historic districts; however, using the guidelines set forth by the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, the alterations will not diminish the integrity of these districts and disqualify the properties from inclusion in the NRHP. Therefore, the actions are anticipated to result in no direct or indirect adverse impacts on the historic districts. With the rehabilitated water and wastewater systems at Furnace Creek and Cow Creek, park operations and maintenance, as it relates to these systems, would be minimal and more predictable, having a long-term beneficial cumulative impact on this resource. The SHPO has provided their concurrence with a “no adverse effect” determination under Section 106. With avoidance, mitigation measures, and following the *Standards for the Treatment of Historic Properties*, implementation of the selected alternative will not result in impairment of historic districts.

Historic Structures. The construction activities will potentially affect the following NRHP-listed or eligible historic structures within the Area of Potential Effects for the proposed project: Furnace Creek Water System, Texas Springs Campground Comfort Stations and Picnic Tables, and Twenty-Mule Team Borax Wagon Road. Potential impacts to these resources were evaluated with respect to potential ground disturbance, discharge of water and/or wastewater, erosion, contamination, and construction of new structures and infrastructure. The proposed actions, individually and collectively, may alter some of the characteristics of the historic structures; however, using the guidelines set forth by the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, the alterations will not diminish the integrity of the structures and disqualify them from inclusion in the NRHP. Therefore, the actions are anticipated to result in no adverse impacts, direct or indirect, on the historic structures. With the rehabilitated water and wastewater systems at Furnace Creek and Cow Creek, park operations and maintenance, as it relates to these systems, would be minimal and more predictable, having a long-term beneficial cumulative impact on this resource. The SHPO has provided their concurrence with a “no adverse effect” determination under Section 106. With avoidance, mitigation measures, and following the *Standards for the Treatment of Historic Properties*, implementation of the selected alternative will not result in impairment of historic structures.

Special Status Wildlife Species. Construction activities could result in short-term, minimal, indirect impacts to special status wildlife species and associated habitat. Potential impact-causing activities associated with the selected alternative include: addition of a fourth wastewater lagoon cell,

operation of vehicles and mechanized equipment, vegetation removal and modification, trench construction and maintenance, above-ground disturbance (e.g., embankment construction, stockpiling), subsurface disturbance (e.g., excavation, drilling, horizontal directional drilling, pipe bursting, and cured-in-place pipe installation), erosion control and stabilization, reseeding and replanting, generation of artificial light during nighttime construction, and staging of project equipment. Short-term, adverse impacts to individuals and negligible loss of habitat is not expected to result in long-term adverse impacts to special status species populations or habitat. It is anticipated that wildlife will resume baseline activity levels within the analysis area following the conclusion of project activities. Indirect impacts to special status wildlife species will not result in trends towards federal listing or loss of population viability within the analysis area. With the implementation of project-specific mitigation measures, direct and indirect impacts to special status wildlife species are not anticipated. With the rehabilitated water and wastewater systems at Furnace Creek and Cow Creek, park operations and maintenance, as it relates to these systems, would be minimal and more predictable, having a long-term beneficial cumulative impact on this resource. Implementing the selected alternative will not result in impairment of special status wildlife species.

Water Quality. Construction activities may increase soil erosion and compaction potential or introduce sediment and pollutants to waterways in the project area and portions of Cottonball Basin down gradient off the project area to where surface water flows terminate. Accordingly, these possible effects will be reduced by the BMPs identified in Appendix B in the EA and adherence to a Clean Water Act Section 401 certification for the project. If determined necessary, Death Valley National Park will file for 401 Water Quality Certification to discharge stormwater with the Regional Water Quality Control Board prior to construction. A Stormwater Pollution Prevention Plan (SWPPP) will also be prepared and implemented to control runoff during construction. The BMPs in the SWPPP will specify means of waste disposal, sediment and erosion control, and monitoring and maintenance responsibilities. The construction contractor will also be required to implement appropriate hazardous materials management practices to reduce the possibility of chemical spills or releases of contaminants. Post-construction permanent BMPs will be implemented where necessary to reduce adverse impacts, direct or indirect, from land disturbance, increased runoff, and contaminated runoff. With the rehabilitated water and wastewater systems at Furnace Creek and Cow Creek, park operations and maintenance, as it relates to these systems, would be minimal and more predictable, having a long-term beneficial cumulative impact on this resource. Implementing the selected alternative will not result in impairment of water quality.

Conclusion

The National Park Service has determined that the rehabilitation of water and wastewater systems at Furnace Creek and Cow Creek will not constitute an impairment of the resources or values of Death Valley National Park. As described above, implementing the improvement projects is not anticipated to impair resources or values that are essential to the purposes identified in the enabling legislation of the park, key to the natural or cultural integrity of the park, or identified as significant in the park's relevant planning documents. This conclusion is based on consideration of the park's purpose and

significance, a thorough analysis of the environmental impacts described in the EA, the comments provided by the public and others, and the professional judgment of the decision-maker guided by the direction of the NPS *Management Policies 2006*.