



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

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

**FINDING OF NO SIGNIFICANT IMPACT
Salt Creek Boardwalk Replacement Project/EA**

Recommended:

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Date

Approved:

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Date

1. INTRODUCTION

This finding of no significant impact (FONSI) is based on the Salt Creek Boardwalk Replacement Project Environmental Assessment (EA). The EA was prepared in compliance with the National Environmental Policy Act of 1969.

This FONSI documents the decision of the National Park Service (NPS) to adopt the selected alternative, which is referred to as the proposed action in the Salt Creek Boardwalk Replacement Project EA. The selected alternative includes the repair and reconstruction of the Salt Creek boardwalk facilities, including the access road, parking lot, vault toilet, and boardwalk itself, which were all severely damaged during flood events in August 2022 and August 2023.

2. SELECTED ALTERNATIVE AND RATIONALE FOR THE DECISION

SELECTED ALTERNATIVE

Based on the analysis presented in the EA, the NPS selected the preferred alternative—reconstruction of the facilities at Salt Creek—after an evaluation of the feasibility of several potential alternatives. The alternatives considered but not carried forward for further analysis are each briefly described in Chapter 2, page 22 (Table 3) of the EA. The preferred alternative involves the repair and reconstruction of the Salt Creek boardwalk facilities. Design plans include the restoration of the road, reconstruction of the parking lot, installation of a new vault toilet, and construction of a new boardwalk to replace the one that had been washed away (Figures 4–9, pages 11–15 of the EA). The former parking area will be used as a construction staging area and as a location for recovered flood debris from the previous boardwalk. The boardwalk replacement will occur during the late fall, winter, and spring of 2024 and 2025.

RATIONALE

The selected alternative best meets the project purpose to (1) restore viewing, interpretive, and educational opportunities for visitors, including those with limited mobility; and (2) see and learn about the Salt Creek pupfish (*Cyprinodon salinus* ssp. *salinus*) and Salt Creek itself while protecting the species and its fragile habitat and maintaining the integrity of the surrounding wilderness area.

3. STIPULATIONS AND MITIGATION MEASURES

The NPS has the authority to implement the stipulations and mitigation measures outlined in Chapter 2 (page 16) of the final EA under the NPS Organic Act, the National Historic Preservation Act, NPS *Management Policies 2006*, park-specific regulations at 36 CFR Part 13 Subpart N (Code of Federal Regulations), and other federal and state applicable requirements.

The selected alternative incorporates by reference the mitigation measures listed in Chapter 2 (page 16).

4. OTHER ALTERNATIVES CONSIDERED

Chapter 2 (Table 3) of the EA lists the alternatives or elements considered but dismissed from further review, as well as the rationale for their dismissal.

5. PUBLIC INVOLVEMENT/AGENCY CONSULTATION

Public engagement for the Salt Creek Boardwalk Replacement Project EA, prior to release of the EA for public comment, is described in Chapter 4 (page 46) of the EA. The NPS notified the public of the availability of the EA through a park news release, notices on the park's website and social media, and e-mails. Comments were accepted from May 22 through June 23, 2024. The NPS posted the EA to the NPS Planning, Environment, and Public Comment (PEPC) website at the start of the public comment period.

The NPS received 12 correspondences, all of which were unique (no form letters). All commenters self-identified as an "unaffiliated individual." Three commenters are from California, two from Oregon, and one each from Kentucky, Michigan, Texas, Washington, North Carolina, Utah, and Alaska. A summary of substantive public comments received and NPS responses are provided in Appendix B. Minor modifications to the text of the EA are provided in Appendix A.

AGENCY OUTREACH

The NPS has determined that the proposed action will have no effect on species listed as threatened or endangered under the US Endangered Species Act of 1973. Suitable habitat is not present in or near Salt Creek, as described in Chapter 1, Table 2 of the EA (page 7), for any species listed under the US Endangered Species Act before nor after the floods. No consultation is required for no effect determinations.

The Federal Highway Administration (FHWA) (2024) completed an aquatic resources delineation survey in December 2023 to document conditions after the second flooding event (page 19 of the EA). Approximately 6 acres (4,768 linear feet) of potential waters of the United States, in the form of an intermittent stream, are currently present within the 16.20-acre project area, but no wetlands, according to US Army Corps of Engineers criteria and the wetland definition used for Section 404 of the Clean Water Act permitting (33 CFR 328.3), are currently present in the boardwalk area (FHWA 2024). The stream is riverine, intermittent, streambed, and seasonally flooded, under the Cowardin et al. (1979) classification (FHWA 2024; USFWS 2023) and is considered wetland by the NPS (NPS 2016b), which uses the Federal Geographic Data Committee (2013) definition. The NPS will coordinate with the US Army Corps of Engineers for potential Section 404 of the Clean Water Act permitting.

TRIBAL OUTREACH & COORDINATION

Park staff completed consultation with the Timbisha Shoshone and the California State Historic Preservation Officer (SHPO). The SHPO concurred with a no effect on historic resources finding. No comments were received from the Timbisha Shoshone. Details can be found in Chapter 4 (page 47) of the EA and the attached errata.

6. FINDING OF NO SIGNIFICANT IMPACT

In considering whether the effects of the proposed action are significant, The NPS analyzed the potentially affected environment and degree of the effects of the action. In considering the degree of the effects, the NPS considered both short- and long-term effects and both beneficial and adverse effects.

POTENTIALLY AFFECTED ENVIRONMENT

The EA analyzed the following resources in detail: vegetation, floodplains and wetlands, wildlife, species of special concern, paleontological resources, visitor use and experience, and wilderness.

DEGREE OF EFFECTS OF THE ACTION

The NPS considered the following actual or potential project effects in evaluating the degree of effects (40 CFR 1501.3[b][2]) for the selected alternative.

Beneficial and Adverse, and Short-term and Long-term Effects of the Selected Alternative

No significant impacts on resources were identified that will 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. Stipulations and mitigation measures as outlined in Chapter 2 of the EA will further minimize any potential adverse impacts.

Effects of the Selected Alternative

The following summary of effects has been incorporated from Chapter 3, “Affected Environment and Environmental Consequences,” of the EA (pages 24–45), with “Stipulations and Mitigation Measures” (Chapter 2) of the EA (pages 16–21) used to minimize adverse impacts.

Vegetation

As discussed in Chapter 3 of the EA, construction activities will have the potential to compact soils and displace and trample vegetation, especially pickleweed, by walking and moving heavy equipment along the creek. This potential will be minimized with measures described in Chapter 2, (page 18, “Vegetation”). After construction, the boardwalk will provide limited shade over a small area, which could affect some plant species distribution, decreasing sun-loving species and increasing those that grow better with shading.

Reconstruction of the boardwalk will reduce the potential for visitors to walk along the creek banks by providing easily accessible viewing opportunities. The reconstructed boardwalk will be higher than the previous boardwalk, and thus could better deter visitors from walking on the creek banks and trampling vegetation.

Floodplains and Wetlands

As discussed in Chapter 3 of the EA (pages 30–31), no US Army Corps of Engineers-defined wetlands are present in the project area. Construction activities will have the potential to impact NPS-defined wetlands, primarily from heavy equipment traversing the project area. This potential will be minimized with measures described in Chapter 2 (pages 16–18, “General Construction Best Management Practices, Soils, Vegetation”).

Under the selected alternative, the boardwalk, road, parking lot, vault toilet, and associated infrastructure will be rebuilt in the floodplain, and debris will be removed. These structures' presence in the floodplain will result in minor interference in floodplain function by altering water flow slightly. However, changes to channel morphology near the previous boardwalk from small-to-moderate floods were not previously observed.

The justification for the use of the floodplain, flood risk, and a flood mitigation plan are described in the Floodplain Statement of Findings in Appendix D of this FONSI.

Wildlife

As discussed in Chapter 3 of the EA (pages 32–33), construction activities will have the potential to affect wildlife habitat and will be minimized in the manner described under “Vegetation.” Construction activities will temporarily displace wildlife from the project area by disturbance associated with the presence of workers, equipment, and noise. Stipulations and mitigations to minimize wildlife impacts are described in Chapter 2 of the EA (page 18). The potential to disturb breeding birds and their nests will be minimized by avoiding construction during the breeding season. Any work conducted during the breeding season will be preceded by a survey for active bird nests. The disturbance of any active bird nests found will be minimized with the establishment of a construction buffer zone. Any unavoidable construction impacts will temporarily slightly decrease available wildlife habitat until it recovers.

Under the selected alternative, the proposed boardwalk will reduce the potential for visitors to walk along the creek banks by providing easily accessible viewing opportunities. Thus, the loss of wildlife habitat from vegetation trampling and soil compaction will be reduced. Direct disturbance of wildlife from visitors walking along the creek will also be reduced. Although some effects on wildlife from human presence on the boardwalk are expected, including more people present than without the boardwalk, substantial long-term increases in visitation on the previous boardwalk are not expected because parking capacity will not be increased. The proposed boardwalk will be higher than the previous boardwalk and thus could better deter visitors from leaving the boardwalk.

Special Status Species

As discussed in Chapter 3 of the EA (page 35), construction during fall, winter, and early spring will avoid most of the Salt Creek pupfish's spawning, but a delayed completion date could overlap with the early spawning period. If this were to happen, the measures designed for protecting habitat will reduce potential impacts. The NPS will have the discretion to delay the completion of construction to fall if necessary. Stipulations and mitigations to minimize potential impacts are described in the EA in Chapter 2 (page 18).

Construction activities will have the potential to affect Salt Creek pupfish habitat and will be minimized in the manner described in the “Vegetation” section. The potential for fuel spills into the creek from construction equipment will be minimized with the stipulations and mitigation measures described in Chapter 2 of the EA (page 17). These include regularly monitoring and checking construction equipment to identify and repair any leaks.

Under the selected alternative, the boardwalk, road, parking lot, vault toilet, and associated infrastructure will be rebuilt, and debris will be removed. The proposed boardwalk will reduce the potential for visitors

to walk along the creek banks by providing easily accessible viewing opportunities. Thus, the potential impacts on pupfish described above will be less likely to occur.

Paleontological Resources

As discussed in Chapter 3 of the EA (pages 37–38), under the selected alternative, large, visible pieces of infrastructure debris will be removed from the creek channel and floodplain downstream from the site. Most buried debris will be left in place to minimize resource damage associated with extracting it. Larger, heavier debris will be removed with the least-damaging methods and equipment practicable, including the use of helicopters. Due to the low potential for paleontological resources to occur in the wash bottom and the mingling of alluvium and possible fossil-bearing material, the potential for the disturbance of individual paleontological resources by debris removal will be low.

The road to the parking lot will be restored to its preflood condition. The 1.2-mile road will follow the previous alignment, with minor adjustments at the end to connect to a new parking lot location. The potential for paleontological resources adjacent to the road is low due to the depth of sediment covering potential fossil-bearing geological units, given that the road will retain its original alignment and will not involve excavation into sensitive bedrock. Therefore, the potential for the disturbance of individual paleontological resources will be low.

The parking lot will be reconstructed to the same capacity as the preflood parking lot, though in a different location farther east due to the migration of the creek channel. Because of the high potential fossil yield adjacent to the parking lot and the fact the parking lot will be constructed with heavy equipment, the potential for the disturbance of individual subsurface, undocumented paleontological resources will be relatively high but minimized, to the extent practicable, with stipulations described in Chapter 2 of the EA (pages 18–21).

An Architectural Barriers Act (ABA)-compliant double vault toilet will be installed adjacent to the sidewalk. Due to the high potential fossil yield adjacent to the vault toilet and the fact that the hole for the vault will be excavated with heavy equipment, the potential for the disturbance of individual subsurface, undocumented paleontological resources will be relatively high. This potential will be reduced, to the extent practicable, with the siting criteria and the stipulations described in Chapter 2 of the EA (pages 18–21).

The boardwalk will be reconstructed in a footprint similar to the original boardwalk location. The boardwalk will be anchored primarily with steel helical piles drilled into the substrate. Due to the high potential fossil yield in the bedrock where the boardwalk will be installed and the nature of the construction, the potential for the disturbance of subsurface, undocumented paleontological resources will be relatively high. This potential will be reduced, to the extent practicable, with the siting criteria and stipulations described in Chapter 2 of the EA (pages 18–21). The presence and increased height of the boardwalk, compared to the preflood boardwalk and no boardwalk, will reduce the likelihood of visitors leaving the boardwalk and walking along the creek where they may disturb or damage undocumented subsurface paleontological resources.

The removal of flood-damaged infrastructure will be consistent with all stipulations and mitigations as described in Chapter 2 of the EA (pages 18–21) and, therefore, will be unlikely to adversely impact paleontological resources.

Visitor Use and Experience

As discussed in Chapter 3 of the EA (pages 40–41), travelers on State Route 190 will see construction activities on the access road, which will predominantly consist of a grader and construction vehicles accessing the site. This will be inconsistent with the viewshed described above, as well as the criteria for national scenic byway status, which seek to minimize “visual intrusions” (Caltrans 2008 [references can be found in Chapter 5 of the EA, pages 48–51]). These visual intrusions from construction will be a short-term, minor impact on the visitor experience because they will slightly alter the viewshed of State Route 190.

Helicopter flights related to removing the boardwalk debris will be visible and audible. Construction at the creek will not be visible or audible from the highway or any other frequently visited location in the park.

During construction, the site will be closed to visitation. The removal of the previous boardwalk debris and construction related to the road, parking area, toilet, and boardwalk will take place over a five-to-six-month period during the late fall, winter, and early spring. This time period is the peak visitation period for the park, and visitors will be unable to experience the Salt Creek site. Given the site is currently closed to vehicular traffic, visitation to the site is low, so these impacts will be short term and minor.

While this impact on visitor use will be adverse, it will be short term. Park staff will inform visitors in advance of construction activities via multiple methods, including the park’s website, signs, and the visitor center. Park staff will be available to address visitor questions during construction and provide regular updates to the public about project progress and any associated delays. Stipulations and mitigations to minimize impacts on visitor use and experience can be found in Chapter 2 of the EA (page 21).

Upon the completion of construction, Salt Creek will be open to the public. Parking lot and boardwalk accessibility will be improved over the previous facilities. The boardwalk itself will be higher than the previous boardwalk, so it will not collect blowing sand. The new parking lot design will decrease the potential for vehicle and pedestrian conflicts, particularly with school groups. The new parking lot configuration will make it easier to move directly to the boardwalk and improve circulation patterns at the site. This improvement will serve to protect the streambed since visitors can access the boardwalk right away. The visible flood-damaged infrastructure currently in place will not be present to detract from the visitor experience.

New tactile elements will be provided on the waysides, which will help improve accessibility for people with limited vision. The boardwalk will be constructed to ABA standards. The increased width will better allow passage and decrease congestion. Larger bump outs will be included as part of the spurs, which will enhance the visitor experience by providing better opportunities to view the pupfish, as well as improving pedestrian traffic flow on the boardwalk.

Implementing the selected alternative, and thus making a closed visitor attraction available again, will lessen the cumulative impacts of inaccessible visitor attractions in the park.

Wilderness

As discussed in Chapter 3 of the EA (pages 44–45), under the selected alternative, large, visible pieces of infrastructure debris will be removed from the creek channel and floodplain both outside and in wilderness, positively impacting the undeveloped quality. Most buried debris will be left in place to minimize resource damage associated with extracting it. Materials to be extracted include primarily wood, metal, and concrete. Smaller, lightweight debris will be removed by hand. Larger, heavier debris will be removed with the minimum amount of motorized equipment required, including the potential use of helicopters and consistent with the park’s minimum requirements analysis (MRA) authorizing the activity in wilderness (Appendix A of the Final EA); the use of motorized equipment and aircraft will have a negative effect on the undeveloped quality while in use. Helicopters will likely take off from the Furnace Creek Airport and will drop retrieved debris either at a construction staging area at the site or at the airport. These activities will be audible and visible from the wilderness and thus have short-term impacts on the opportunities for solitude or primitive and unconfined recreation quality of wilderness for the duration of the activity, which may be two to three weeks. This quality will also be negatively impacted by noise from construction activities that could be heard in the wilderness, but the noise will be localized, short term, and minimized through measures identified in Chapter 2, “Stipulations and Mitigation Measures.”

Although the road, parking lot, vault toilet, and boardwalk will not be in wilderness, the construction will be visible from some areas of wilderness. At Salt Creek, the wilderness boundary is within 50 to 300 feet of the centerline of the road, parking lot, and boardwalk. Installing a double vault toilet will reduce toilet paper and human waste in the wilderness. The new boardwalk will be designed at a greater height to discourage off-trail access into the wilderness, decreasing the potential for social trail creation. The combined effect of these facilities will be to limit or improve the natural quality and the opportunities for solitude or primitive and unconfined recreation.

Implementing the selected alternative, and thus making a closed visitor attraction available again, will lessen the cumulative impacts of visitor displacement to other locations in the park, potentially including wilderness.

Degree to Which the Selected Alternative Affects Public Health and Safety

There will be no significant impacts on public health, public safety, or unique characteristics of the region. Public safety is addressed in the EA on page 9.

Effects That Will Violate Federal, State, Tribal, or Local Law Protecting the Environment

No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. The implementation of the NPS selected alternative will not violate any federal, state, or local environmental protection laws.

7. CONCLUSION

Based on the information contained in the EA, the NPS has determined that the selected alternative does not constitute a major federal action having a significant effect on the human environment. Therefore, an EIS will not be required.

This finding is based on consideration of Council on Environmental Quality (CEQ) criteria for significance (40 CFR 1501.3 [b]) regarding the potentially affected environment and degrees of effects of the impacts described in the EA.

Appendix A: Errata Indicating Text Changes to EA

The following changes were made to the EA in response to public comments or additional internal reviews:

CHAPTER 1: PURPOSE AND NEED

- INTRODUCTION, Page 1 – Additional text. New sentence after first sentence, “The proposed action also includes debris removal.”

CHAPTER 2: ALTERNATIVES

- Chapter heading – ~~PRELIMINARY~~ ALTERNATIVES

CHAPTER 4: CONSULTATION AND COORDINATION

- SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT, Page 47 – Additional text. New paragraph at the end of section, “On May 28, 2024, SHPO concurred with NPS NRHP eligibility recommendations and assessment of effects. The NPS has not received any comments or concerns related to the March 21, 2024, consultation letter to the Timbisha Shoshone.”

Appendix B:
Response to Substantive Public Comments

National Park Service
U.S. Department of the Interior

Death Valley National Park
California



Comment Summary Report

Death Valley National Park

Salt Creek Boardwalk Replacement Project

July 2024

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CONTENTS

INTRODUCTION..... 1

METHODOLOGY 2

RESULTS..... 3

Demographics 3

Summary of Comments 3

Design Elements..... 3

Debris Removal 5

Do Not Rebuild the Project 5

Environmental Assessment Analysis 5

Minimum Requirements Analysis 6

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INTRODUCTION

The National Park Service (NPS) proposed to repair and reconstruct the Salt Creek boardwalk facilities, including the access road, parking lot, vault toilet, and boardwalk, which were all severely damaged in flood events in August 2022 and August 2023. The project area is within Death Valley National Park.

An environmental assessment (EA) was completed in compliance with the National Environmental Policy Act (NEPA) to analyze a range of alternatives and evaluate potential issues and impacts. This project was also conducted in accordance with Section 106 of the National Historic Preservation Act and other applicable laws, regulations, and policies. This report summarizes comments, feedback, and input received from the public during the public comment period for this EA.

The National Park Service notified the public of the availability of the EA through a park news release, notices on the park's website and social media, and e-mails. Comments were accepted from May 22 through June 23, 2024. The National Park Service posted the EA to the NPS Planning, Environment, and Public Comment (PEPC) website at the start of the public comment period.

METHODOLOGY

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

The comment analysis process includes these steps:

- Read and code public comments.
- Interpret and analyze the comments to identify issues and themes.
- Prepare a comment summary.

The agencies used the NPS PEPC database to manage the comments. The database stores the full text of all correspondence, facilitates organizing comments by topic and issue, and includes several other tools and report functions. The National Park Service wrote one or more **concern statements** (written summaries) for each topic that summarized the comments received.

Although the analysis process attempts to capture the full range of public concerns, this content analysis report should be used with caution. Comments from people who chose to respond do not necessarily represent the sentiments of the entire public. Furthermore, this was not a vote-counting process, and the emphasis was on the content of the comment rather than the number of times a comment was received. This report is intended to be a summary of the comments received rather than a statistical analysis.

RESULTS

DEMOGRAPHICS

The National Park Service received 12 correspondences, all of which were unique (no form letters). The term “comment,” as used in this report, refers to an individual issue or concern raised by a commenter within a correspondence. A single commenter may have raised multiple comments within a correspondence. Similarly, multiple commenters raised the same comments. All commenters self-identified as an “unaffiliated individual.” Three commenters are from California, two from Oregon, and one each from Kentucky, Michigan, Texas, Washington, North Carolina, Utah, and Alaska.

Summary of Comments

The substantive comments raised in the form letters are captured in the comment summaries below by topic. Substantive comments are those that do one or more of the following:

- question, with reasonable basis, the accuracy of the information in the NEPA document;
- question, with reasonable basis, the adequacy of the environmental analysis;
- present reasonable alternatives other than those presented in the NEPA document; or
- cause changes or revisions in the proposal.

In other words, substantive comments raise, debate, or question a point of fact or analysis. The intent of the agencies is to capture the concern raised by the commenter and evaluate each comment based on the individual concern, topic, or suggestion, regardless of the repetitive nature of the concern.

Non-substantive comments included comments of support for the project or specific elements, a description of who the commenter was, past experiences at the park, and suggestions for elements to include in the project or EA that were already present or irrelevant.

The following section summarizes the comments received during the public comment period and is organized by topic. The summarized text is formatted into concern statements to identify the thematic issues or concerns represented by comments within the code. The National Park Service only summarized comments with substantive content.

Design Elements

Concern 1: Commenters suggest changes to the boardwalk materials, including using precast concrete or metal grates instead of wood because they would be more resistant to heat, sun, and flooding.

Response 1: The National Park Service conducted extensive research into decking materials and reviewed alternative materials during a Choosing by Advantage workshop. Concrete would be more resistant to flood damage, but it would have much more impact on the

natural environment, as substantially heavier equipment would be needed to construct it. Metal surfaces would burn skin in the extreme summer heat in Death Valley and are thus a health and safety concern. The benefits of using wood include the ability to maintain and replace sections of the boardwalk with commonly available construction methods and in-house NPS staff.

Concern 2: Commenters suggest excluding “pavilions” to maximize the naturalness of the viewshed and including a shade structure in the parking lot.

Response 2: The project does not include shade structures or pavilions. The project does include wide areas on the trail, “bump outs,” which facilitate the interpretive and educational goals for the site without significantly impacting the viewshed.

Concern 3: Commenters recommend design upgrades to the access road, including dust removal surfacing on the access road approaching the junction with Highway 190, including 30 feet of gravel and 30 feet of pavement approaching the stop sign, and culverts at the valley’s low point or other locations.

Response 3: The portion of the access road adjacent to the highway was not damaged by the flooding. The dirt surface has been viable for several decades. The commenters’ suggested access road improvements are not eligible under the project’s funding source (Emergency Relief for Federally Owned Roads). In the future, the National Park Service may consider these improvements as a separate project with a different funding source but not as part of this proposed project.

Concern 4: Commenters recommend ensuring that the vault toilet includes a liner that will remain impervious to leaking any treatment chemicals to prevent groundwater contamination.

Response 4: The National Park Service selected a precast concrete vault toilet that is typical to Death Valley and national park system standards. Park staff add microbes to the vaults to help process the solids and reduce the impact when the septage is introduced to the wastewater treatment facility. No treatment chemicals are used in the vault. Park staff pump out the vaults regularly and treat surfaces with standard cleaning products that will not damage concrete. This design does not necessitate the addition of a liner.

Concern 5: Commenters recommend that the boardwalk’s supporting structures be without chemical treatments to avoid water quality contamination.

Response 5: The National Park Service considered two common wood treatments for wood boardwalks: pentachlorophenol (PCP) and copper naphthenate (CuN). The National Park Service chose CuN because PCP has been found to be toxic to aquatic organisms. CuN treatment was used on the previous boardwalk. Park staff monitored the aquatic environment throughout the previous boardwalk’s lifespan and did not observe any adverse effects from use of the preservative.

Concern 6: Commenters suggest that a step from the boardwalk accessing the trail to the northwest, including educational signs, be included. Commenters suggest that without the step and signs, hikers would access the trail anyway but would do more resource damage than with the provided step and signs.

Response 6: The National Park Service does not intend to prohibit people from walking beyond the end of the boardwalk. However, at some point, the access needs to transition from a boardwalk to a lesser route, at which point there will be a risk of people creating social trails. The National Park Service's assessment is that constructing a clear departure point would result in increased foot traffic beyond the end of the boardwalk, resulting in more social trail impacts than the social trails created by a smaller number of hikers without the invitation of stairs to continue.

Debris Removal

Concern 1: Commenters suggest that debris removal should include hand grubbing out all exposed metal, wood, or concrete. Remaining visible debris would have an adverse impact on wilderness character. Motorized equipment should not be used in wilderness for removal. Alternative 1 should have been selected in the minimum requirements analysis.

Response 1: The National Park Service is concerned that digging out all exposed materials would create excessive new disturbance and leave large holes and social trails, which would be visible until the next significant flood. The proposed methods would remove as much material as possible without excessive disturbance.

Do Not Rebuild the Project

Concern 1: Commenters suggest that the project should not be rebuilt. Nature should be left alone.

Response 1: The National Park Service not rebuilding the boardwalk (no-action alternative) would not meet the purpose of and need for action. Because the presence of the Salt Creek pupfish is widely known, and they occur nowhere else on earth, visitors would continue to attempt to access the creek without infrastructure, and damage to the natural resources would be difficult to prevent. The boardwalk is needed to avoid adverse impacts on the vegetation and soils surrounding the creek, which is an essential component of pupfish habitat. Habitat damage from visitors walking off the boardwalk has been documented. Viewing this rare fish and habitat also has substantial interpretative and educational value. The associated impacts from both the proposed project and the no-action alternative (not building the project) are described in the EA.

Environmental Assessment Analysis

Comment 1: Commenters recommend the following substantive additions to the EA:

1. Add the removal of debris to the introduction and the purpose statement.
2. Include the protection of wilderness values in mitigations.

Response 1:

1. The removal of debris is added to the introduction section. See the errata. "Maintaining the integrity of the surrounding wilderness area" is already in the purpose statement. The removal of debris is too specific for a purpose statement. The presence of debris is included in the need statement, "The initial flood left broken pieces of infrastructure 0.4 miles downstream of the eastern end of the boardwalk, in designated wilderness, negatively impacting wilderness character."

2. No mitigation is necessary, as the preferred alternative methods for debris removal are structured to minimize wilderness impacts. These methods are evaluated in the MRA and will be implemented during construction via the FHWA's special contract requirements for construction.

Minimum Requirements Analysis

Concern 1: Commenters suggest the following revisions to the minimum requirements analysis:

1. Page 2, B.2.b.: Add missing section of the paragraph. There is no i).
2. Page 3, B.2.d.: Select "Yes" for public closure until project completion.
3. Page 4, Table 1: Revise Alternative 1 to no helicopter sling loads from wilderness. Sling loads by helicopter from wilderness, even if they do not land, are still considered a Wilderness Act 4(c) prohibition. Per policy, there should be no aerial retrieval or delivery.
4. Revise Alternative 1 to differ from Alternative 2 by having no helicopter sling loads for better comparison of wilderness impacts.
5. Page 7, F.: Recommend Alternative 1 be selected. It has the least overall adverse impact. Give wilderness "significantly more weight than economic efficiency and convenience."

Response 1:

1. Added missing section "i)" to the final MRA.
2. Changed selection to "Yes" for public closure until project completion in the final MRA.
3. The National Park Service has added two alternatives to the MRA analysis: Alternative 3 – No Helicopters and Hand Tools and Alternative 4 – No Helicopters and Motorized Tools.
4. Revised MRA by adding two alternatives that do not involve helicopter sling loads.
5. The National Park Service has determined that helicopter removal of boardwalk debris (Alternative 2) is "necessary to meet minimum requirements for the administration of the area for the purpose of [the Wilderness] Act" (Wilderness Act, Section 4[c]), This action preserves the undeveloped, natural, and scenic values of the wilderness adjacent to Salt Creek. Alternative 2 results in the shortest temporal and minimum physical disturbance to the wilderness area while providing long-term beneficial impacts to multiple characteristics of wilderness.

Appendix C: Non-Impairment Determination

NON-IMPAIRMENT DETERMINATION

The National Park Service (NPS) Organic Act of 1916 directs the NPS to “conserve the scenery, natural, and historic objects, and wildlife in the system units and to provide for the enjoyment of the scenery, natural and historic objects, and wildlife in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (54 USC 100101 [United States Code]). 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.”

An action constitutes impairment when its impacts “harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values” (NPS 2006, Section 1.4.5). To determine impairment, the National Park Service must evaluate the particular resources and values that will be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact on any park resource or value may constitute impairment, but an impact will be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified in the park’s general management plan or other relevant NPS planning documents as being of significance (NPS 2006, Section 1.4.5).

Resources carried forward for detailed analysis in the EA, and for which a non-impairment determination has been made, include floodplains, wetlands, vegetation, wildlife, species of concern (Salt Creek pupfish), and paleontological resources. A non-impairment determination is not necessary for visitor use and experience or wilderness character because these impact topics are not generally considered a park resource or value subject to the non-impairment standard (see NPS 2006, Section 1.4.6).

References corresponding to the citations in this appendix can be found in the environmental assessment, References chapter, starting on page 48.

VEGETATION

Salt Creek is a relatively wide riparian corridor that represented an example of desert vegetation associated with alkali sinks. Pickleweed or iodine bush (*Allenrolfea occidentalis*) was the dominant

vegetation, and it plays a key role in stabilizing the streambank, dissipating the energy of flood flow, and providing cover for aquatic fauna, including Salt Creek pupfish. No trees or willows (*Salix* spp.) occurred before or after the floods. Pickleweed is sensitive to soil compaction (NPS 2023d). Park staff have documented substantial pickleweed die-off in areas with high foot traffic on creek banks near the boardwalk. The impacts extend a considerable distance from the compaction in the form of large barren or browning areas. Aquatic vegetation consists of heavy growths of wiregrass (*Juncus* sp.), hornwort (*Ceratophyllum demersum*), and multiple algae species (NPS 2023d).

Other plant species recently documented along Salt Creek include four-wing saltbush (*Atriplex canescens*), salt grass (*Distichlis spicata*), alkali sacaton (*Sporobolus aeroides*), chairmaker's bulrush (*Schoenoplectus americanus*), cattail (*Typha* sp.), smartweed (Polygonaceae), desert holly (*Atriplex hymenelytra*), devil's spineflower (*Chorizanthe rigida*), desert sunflower (*Geraea canescens*), and creosote bush (*Larrea tridentata*) (NPS 2023b).

Vegetation trends in the project area include gradually increasing social trailing resulting in loss of vegetation cover, especially of pickleweed, which is essential to the functioning of the riparian system and providing habitat for the Salt Creek pupfish. This was primarily occurring due to visitors walking off the boardwalk, which was possible with the previous boardwalk structure. Plant cover along the creek was reduced drastically from the 2022 flood and again by the 2023 flood.

Under the selected alternative, the boardwalk, road, parking lot, vault toilet, and associated infrastructure will be rebuilt in the floodplain, and debris will be removed. The boardwalk will reduce the potential for visitors to walk along the creek banks by providing easily accessible viewing opportunities. Furthermore, the proposed boardwalk will be higher than the previous boardwalk and thus could better deter visitors from walking on creek banks.

Construction activities will have the potential to compact soils and displace and trample vegetation, especially pickleweed, which is especially susceptible to trampling, by walking and moving heavy equipment along the creek. This potential will be minimized with measures described in Chapter 2 of the environmental assessment, "Stipulations and Best Management Practices" section. These measures include staging equipment and vehicles in designated parking areas, limiting the size of equipment and where equipment can traverse, and using wetland mats.

After construction, the boardwalk will provide limited shade over a small area, which could affect plant species distribution, decreasing sun-loving species and increasing those that grow better with shading.

No incremental contribution to cumulative impacts on plants would result from implementing the selected alternative.

For the reasons described above, the NPS has determined the selected alternative will not result in an impairment of vegetation.

FLOODPLAINS AND WETLANDS

Floodplains

The perennial flow of Salt Creek begins at McLean Springs. The creek flows within a broad floodplain with a meandering, braided channel. Salt Creek is a closed basin; it does not flow into another creek. It

may flow for approximately 3.1 miles (5 kilometers [km]) in the winter, but it dries to approximately 0.9 miles (1.5 km) in summer (Moyle 2002). The past and proposed boardwalk, parking lot, and most of the access road are in the floodplain (Federal Emergency Management Agency Zone A; 2023). The floodplain geomorphology was altered considerably by the floods, resulting in different braiding patterns, eroding banks, and waterfalls in different locations. The creek moved closer to the former parking lot.

Wetlands

The creek channel was changed considerably by the 2022 flood and again by the 2023 flood. Wetlands were present in pockets along the creek where silty wetland soils and hydric vegetation were present (USFWS 2023). These wetlands were palustrine, emergent, persistent, and seasonally flooded, under the Cowardin et al. (1979) classification system (USFWS 2023). Plant species are described above under “Vegetation.”

Under the selected alternative, the boardwalk, road, parking lot, vault toilet, and associated infrastructure will be rebuilt in the floodplain, and debris will be removed. These structures’ presence in the floodplain will result in minor interference in floodplain function by altering water flow slightly. However, park staff did not observe any changes to channel morphology near the previous boardwalk from small-to-moderate floods.

Building these features outside the floodplain to avoid interfering with floodplain function and potential flood damage will not address the purpose of and need for the project, which include providing accessible viewing, interpretive, and educational opportunities for seeing and learning about the Salt Creek pupfish while protecting its habitat. Exposed debris from the previous boardwalks will be removed. Future smaller flood events will require maintenance, such as clearing debris and grading the road and parking lot. Although no design could withstand the 2022 and 2023 flood events, the proposed design elements will be more flood-resilient than the previous boardwalk due to the use of helical piles and increased height.

The proposed boardwalk and related infrastructure will reduce the potential for visitors to walk along the creek banks by providing easily accessible viewing opportunities that reduce the incentive to get closer to the water.

Construction activities will have the potential to impact wetlands, primarily from heavy equipment traversing the area. This potential will be minimized with measures described in Chapter 2 of the environmental assessment, “Stipulations and Best Management Practices” section.

No incremental contribution to cumulative impacts on floodplains or wetlands would result from implementing the selected alternative.

For the reasons described above, the NPS has determined the selected alternative will not result in impairment of floodplains or wetlands.

WILDLIFE

Wildlife habitats in the floodplain consist primarily of an alkali sink riparian area, as described above in the “Vegetation,” “Floodplains,” and “Wetlands” sections. The quality of habitat and its ability to support wildlife have been severely diminished by the 2022 and 2023 floods. The number of species and the

diversity of wildlife using the Salt Creek area have likely been reduced due to the decrease in quantity and quality of habitat. Habitat and associated wildlife numbers are expected to improve over time.

Macroinvertebrates

A variety of macroinvertebrates (animals without a backbone that can be seen without magnification) occur in the creek, including dragonflies and damselflies (Odonata), caddisflies (Tricoptera), water boatman (Hemiptera), diving beetle (Coleoptera), and snails (Gastropoda) (NPS 2023e). The species present are unique in that they can withstand high salinity.

Reptiles

No reptile surveys have been conducted in the project area. Based on habitat, potentially present species include desert banded gecko (*Coleonyx variegatus variegatus*), zebra-tailed lizard (*Callisaurus draconoides*), long-nosed leopard lizard (*Gambelia wislizenii*), western brush lizard (*Urosaurus graciosus*), southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), desert glossy snake (*Arizona elegans eburnata*), Mojave shovel-nosed snake (*Chionactis occipitalis occipitalis*), and desert night snake (*Hypsiglena torquata*) (NPS 2021).

Amphibians

No amphibian surveys have been conducted in the project area. Based on habitat, potentially present species include red-spotted toad (*Bufo punctatus*), western toad (*Bufo boreas*), Pacific tree frog (*Hyla regilla*), and bullfrog (*Rana catesbeiana*) (NPS 2021).

Birds

A variety of birds use Salt Creek, especially those more dependent on water. A recent late winter survey (NPS 2023b) documented several species of wading birds, shorebirds, and waterfowl, including great blue heron (*Ardea herodias*), least sandpiper (*Calidris minutilla*), greater yellowlegs (*Tringa melanoleuca*), Wilson's snipe (*Gallinago delicata*), killdeer (*Charadrius vociferus*), and ruddy duck (*Oxyura jamaicensis*). Songbirds documented include Say's phoebe (*Sayornis saya*), violet-green swallow (*Tachycineta thalassina*), cliff swallow (*Petrochelidon pyrrhonota*), tree swallow (*Tachycineta bicolor*), white-throated swift (*Aeronautes saxatalis*), rock wren (*Salpinctes obsoletus*), American pipit (*Anthus rubescens*), and savannah sparrow (*Passerculus sandwichensis*). One raptor and one corvid were documented—prairie falcon (*Falco mexicanus*) and common raven (*Corvus corax*).

Mammals

Medium-sized carnivores likely to use the Salt Creek area include coyote (*Canis latrans*), desert kit fox (*Vulpes macrotis arsipus*), and ringtail (*Bassariscus astutus*) (NPS 2021). Small mammals likely include western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus maniculatis*), and desert woodrat (*Neotoma lepida*) (NPS 2021). Several bat species occur in Death Valley (NPS 2021), and those that roost in lower elevations could forage on insects at the creek.

Under the selected alternative, the boardwalk, road, parking lot, vault toilet, and associated infrastructure will be rebuilt in the floodplain, and debris will be removed. The proposed boardwalk will reduce the potential for visitors to walk along the creek banks by providing easily accessible viewing opportunities.

Vegetation regrowth may be enhanced with the implementation of revegetation efforts, as described in the “Revegetation” section in Chapter 2 of the environmental assessment.

Direct disturbance of wildlife from visitors walking along the creek will also be reduced. Although some effects on wildlife from human presence on the boardwalk are expected, substantial long-term increases over visitation on the previous boardwalk are not expected because parking capacity will not be increased. The proposed boardwalk will be higher than the previous boardwalk and thus could better deter visitors from leaving the boardwalk.

Construction activities will have the potential to affect wildlife habitat and will be minimized in the manner described above in “Vegetation.” Construction activities will temporarily displace wildlife from the project area from disturbance associated with the presence of workers, equipment, and noise. The potential to disturb breeding birds and their nests will be minimized by avoiding as much construction as possible during the breeding season. Any work conducted during the breeding season will be preceded by a survey for active bird nests, as described in Chapter 2 of the environmental assessment, “Stipulations and Mitigations.” Disturbance of any active bird nests found will be minimized with the establishment of a construction buffer zone. Most vegetation has been scoured from the site by the floods. The minimal vegetation present will be avoided to the extent possible, as described in Chapter 2, “Stipulations and Mitigations.” Any unavoidable construction impacts will slightly decrease available wildlife habitat until it recovers.

No incremental contribution to cumulative impacts on wildlife would result from implementing the selected alternative.

For the reasons described above, the NPS has determined the selected alternative will not result in impairment of wildlife.

SPECIES OF SPECIAL CONCERN—SALT CREEK PUPFISH

The Salt Creek pupfish is a small (less than 3 inches) killifish (Cyprinodontidae) that only occurs in Salt Creek in Death Valley. This subspecies of pupfish is listed as “high concern” by the State of California (Moyle et al. 2015).

Salt Creek pupfish habitat at Salt Creek is that of a meandering, mud-bottomed, braided, saline (salty) stream. Before flooding, the creek was deepest near the headwaters and shallowest in the lower drainage, where the water only flows seasonally, and it includes pools, runs, and marshes (Sada and Deacon 1994, 1995; Dzul et al. 2012). Salt grass, pickleweed, and saltbrush bordered the creek. Heavy growths of wiregrass, hornwort, and algae provide pupfish with in-stream cover. Since flooding, the stream is more channelized, and vegetation cover is substantially reduced.

The water salinity typically ranges from 10 to 20 parts per thousand (ppt), but it can exceed 40 ppt, which is more than typical seawater. The water temperature varies seasonally, daily, and spatially. The headwaters range from 43° Fahrenheit (F) (6° Celsius [C]) in winter to 86°F (30°C) in summer, and the lower portions can exceed 104°F (40°C) in summer (Moyle et al. 2015).

The population size historically reaches approximately 1 million fish (Sada and Deacon 1994) in spring and early summer and then drops to tens of thousands in late winter (Sada and Deacon 1994). Salt Creek

pupfish live one to two years and mature in two to three months. Pupfish are most plentiful in deeper water with taller vegetation and overhanging banks (Myers 1996). They have two primary spawning periods in spring and late summer. Pupfish move downstream into ephemeral habitats in spring, where growth is faster and reproduction is elevated (Jones et al. 2016; Jones 2017). Significant die-offs are associated with hypoxic (lack of oxygen) conditions and habitat loss due to increasing temperatures and associated evaporation. Significant die-offs are assumed to occur with flash floods as well. Fish in the lower reaches get stranded in isolated pools that dry up. Salt Creek pupfish feed primarily on algae and filamentous cyanobacteria, but they may also consume snails, aquatic insects, and small crustaceans (NPS 2022).

After the floods of 2022 and 2023, vegetation in and adjacent to the creek has been reduced, and the braiding pattern of the creek has been altered. NPS personnel have observed pupfish that appear more active than average, which is consistent with increased spawning behavior of other closely related pupfishes following floods (Chaudoin 2014).

Under the selected alternative, the boardwalk, road, parking lot, vault toilet, and associated infrastructure will be rebuilt, and debris will be removed. The proposed boardwalk will reduce the potential for visitors to walk along the creek banks by providing easily accessible viewing opportunities. Thus, the effects of vegetation trampling and soil compaction from visitors walking on creek banks will be reduced, as described in “Vegetation.”

Construction activities will have the potential to affect Salt Creek pupfish habitat and will be minimized in the manner described in “Vegetation.” Fuel spills into the creek from construction equipment are a concern. This potential will be minimized with the best management practices and stipulations described in Chapter 2 of the environmental assessment. These include regularly monitoring and checking construction equipment to identify and repair any leaks. A spill kit will always be kept on-site and on each piece of equipment that could potentially leak fuel. Fuel will be stored in fuel trucks or aboveground storage tanks, and all fuel storage will be in staging areas. NPS-approved containment best management practices will be established in case of a spill.

Construction timing in fall, winter, and early spring will avoid most of the pupfish’s spawning, but a delayed completion date could overlap with the early spawning period. If this were to happen, the measures designed for protecting habitat will reduce potential impacts. NPS biologists will direct other measures as necessary and monitor construction. Park staff will have the discretion to delay the completion of construction to fall if necessary.

No incremental contribution to cumulative impacts on Salt Creek pupfish would result from implementing the selected alternative.

For the reasons described above, the NPS has determined the selected alternative will not result in impairment of Salt Creek pupfish, a species of special concern.

PALEONTOLOGICAL RESOURCES

The park is part of the Basin and Range Province. The oldest rocks in the park were formed approximately 1.8 billion years ago. The rocks from the Funeral and Panamint Mountains are much younger, approximately 500 million years in age (NPS 2002). The park contains a rich and diverse but

fragile and irreplaceable paleontological record that is nearly as extensive and complicated as the park's geological record.

Paleontological resources, or fossils and the sedimentary units in which they are preserved, provide evidence of the history of life in the North American western interior. Soil development in the park has been greatly slowed, which has resulted in exceptionally well-exposed geological features that support an equally exceptional exposure of fossil remains. These fossil remains have value as (1) stratigraphic indicators for correlating deposits containing them and for determining relative geologic age, (2) records of past life forms showing the course of evolutionary trends of plants and animals, and (3) evidence of changing paleoenvironments (NPS 2002).

This track site north of the project area has been known since at least 1940, while the portion within the project area was first intensively studied in 1999. Portions of the site contain paleontologically sensitive geologic units, which are classified as Class 4 – High on the Bureau of Land Management's Potential Fossil Yield Classification system (BLM 2016). Based on the paleontological surveys conducted in 2022 and 2023 (Aase 2023; Bonde 2024), the project area consists of the Furnace Creek Formation that includes various in-situ (in their original place) specimens. In the project area, paleontological sensitivity is highest where fossiliferous sandstone bedrock is exposed and lowest where bedrock is not present or buried deeper than could be disturbed by project activities.

The track-bearing rock is microbialite, a type of limestone deposited as water chemistry is changed by respiration of a microbial mat. Salt Creek is salty, and the salt precludes snails, which eat microbial mats. In the absence of snails, microbial mats establish on the creek bottom, binding the sediment and inducing limestone precipitation. Sediment from minor flood events is incorporated into the microbialite without interrupting its growth. Microbialite growth is interrupted when sand and alluvium are deposited during major flood events. The uncemented flood deposits create a separation between the underlying microbialite layer and the one that establishes on top of it.

If a large animal walks across a semi-firm microbialite, depressions are formed and remain as the microbialite hardens into rock. Fossil tracks occur on multiple layers of microbialite to an unknown depth and lateral extent. The density of tracks on any given layer is variable.

The 2022 and 2023 floods altered the location of sediments in the project area via changes in the braiding pattern of the channels. Some bedrock that may have been exposed may now be buried and vice versa. It is not known whether the quantity of exposed fossiliferous sandstone bedrock has increased or decreased.

Under the selected alternative, large, visible pieces of infrastructure debris will be removed from the creek channel and floodplain downstream from the site. Most buried debris will be left in place to minimize resource damage associated with extracting it. Larger, heavier debris will be removed with the least-damaging methods and equipment practicable, including the use of helicopters. Debris is likely mixed with alluvium and possible fossil-bearing material. Any fossil specimens discovered will be out of context. Due to the low potential for paleontological resources to occur in the wash bottom and the mingling of alluvium and possible fossil-bearing material, the potential for the disturbance of individual paleontological resources by debris removal will be low.

Under the selected alternative, the road to the parking lot will be restored to its preflood condition. The 1.2-mile road will follow the previous alignment, with minor adjustments at the end to connect to a new parking lot location. Most of the restoration work will be done by a grader. The potential for paleontological resources adjacent to the road is low due to the depth of sediment covering potential fossil-bearing geological units, given that the road will retain its original alignment and will not involve excavation into sensitive bedrock. Therefore, the potential for the disturbance of individual paleontological resources will be low.

The parking lot will be reconstructed to the same capacity as the preflood parking lot, though in a different location farther east due to the migration of the creek channel. Because of the high potential fossil yield adjacent to the parking lot and the fact the parking lot will be constructed with heavy equipment, the potential for the disturbance of individual paleontological resources will be relatively high but minimized, to the extent practicable, with stipulations described in Chapter 2 of the environmental assessment.

An ABA-compliant double vault toilet will be installed adjacent to the sidewalk. Due to the high potential fossil yield adjacent to the vault toilet and the fact that the hole for the vault will be excavated with heavy equipment, the potential for the disturbance of individual subsurface, undocumented paleontological resources will be relatively high. This potential will be reduced, to the extent practicable, with the siting criteria and the stipulations described in Chapter 2 of the environmental assessment.

The boardwalk will be reconstructed in a footprint similar to the original boardwalk location. The boardwalk will be anchored primarily with steel helical piles drilled into the substrate. Due to the high potential fossil yield in the bedrock where the boardwalk will be installed and the nature of the construction, the potential for the disturbance of subsurface, undocumented paleontological resources will be relatively high. This potential will be reduced, to the extent practicable, with the siting criteria and stipulations described in Chapter 2 of the environmental assessment, which includes minimizing the length of boardwalk in high paleontological sensitivity areas, use of a paleontological monitor and preconstruction resource surveys to site individual piers, and the avoidance of known fossils. Once construction is complete, there likely will be a surge in the number of visitors before visitation returns to preflood levels. The presence and increased height of the boardwalk, compared to the preflood boardwalk and no boardwalk, will reduce the likelihood of visitors leaving the boardwalk and walking along the creek, where they may disturb or damage paleontological resources.

The removal of flood-damaged infrastructure will be consistent with all stipulations and mitigations, as described in Chapter 2 of the environmental assessment, and, therefore, will be unlikely to adversely impact paleontological resources.

No incremental contribution to cumulative impacts on paleontological resources would result from implementing the selected alternative.

For the reasons described above, the NPS has determined the selected alternative will not result in impairment of paleontological resources.

SUMMARY

The NPS has determined that the implementation of the selected alternative will not constitute an impairment of the resources of the park. This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the environmental impacts described in the environmental assessment, comments provided by the public and others, and the professional judgment of the decision-maker guided by the direction in NPS *Management Policies 2006*.

Appendix D:
Approved Floodplain Statement of Findings

Appendix E: Selected Alternative Mitigation Measures

The selected alternative incorporates by reference the mitigation measures listed in Chapter 2 (page 16) of the EA.

Appendix F: Minimum Requirements Analysis

Death Valley National Park Wilderness Minimum Requirements Analysis

A Minimum Requirement Analysis (MRA) is required for all proposed actions, projects, proposed special uses, scientific activities, equipment use, etc. in Congressionally Designated Wilderness or Potential Wilderness in Death Valley National Park that either **1)** propose a Wilderness Act of 1964 Section 4(c) prohibited use (Appendix 1) or **2)** have an effect on wilderness character (Appendix 2) per NPS Management Policy 6.3.5 and Director's Order 41 (Appendix 1).

Can the entirety of the proposal be performed through actions outside of Wilderness?

If the answer is YES, STOP. Conduct the actions outside of Wilderness and do not complete this form.

A. PROPOSAL INFORMATION

Proposal Title: Wilderness Debris Removal at Salt Creek

Name and Affiliation of Proponent: Federal Highway Administration

NPS Proponent Contact Information: Ben Dunphey

Submission Date: 2024-07-19

Location of Proposed Action(s): Salt Creek

Purpose and Underlying Need (*hover mouse for definition*): The purpose of this action is to restore wilderness character. The need for this action arose due to the record-breaking flooding that occurred in 2022 and 2023, scouring the Salt Creek Boardwalk area and depositing boardwalk debris into wilderness.

Description of Proposed Action(s):

The proposed action consists of field crews hiking into wilderness. Crews would use hand tools for the majority of the work, but in some cases, gas-powered chainsaws may be required. Crews would prepare debris to be sling-loaded out of wilderness with a helicopter. The helicopter would take off and land at the established Salt Creek Boardwalk parking lot (non-wilderness) or Furnace Creek Airport (non-wilderness).

Aerial imagery obtained during design of the new boardwalk revealed 79 locations where

debris was deposited into wilderness. The proposed action covers roughly 35 acres of wilderness, within 0.5 mi of the original eastern start of the previous boardwalk. The average piece of displaced boardwalk is 18 feet, but the longest piece of displaced boardwalk is 61 feet. There is an estimated ~1,431 linear feet of displaced boardwalk in wilderness. This is about half of the original boardwalk's length (2,892 linear feet of original boardwalk). 399 linear feet of the old boardwalk remain in their original alignment, outside of wilderness. Cumulatively, about 1,062 feet of boardwalk remains unaccounted for and is likely under several feet of sediment. (GIS analysis, Denver Service Center, 12/22/2023)

Crews would dismantle as much above-ground debris as possible to avoid ground disturbance. Full removal of debris would require extensive digging in some areas and could increase visible marks of human influence from the adjacent highway and Salt Creek Boardwalk site. Partially buried debris would remain in place.

No Action Outcome/Current Management Strategy:

The no action alternative would leave boardwalk debris in wilderness indefinitely. Over time, the debris may get covered by other flood or scour events.

B. DETERMINE NEED FOR ANALYSIS

Answer the following questions to determine if the proposed action(s) require a Minimum Requirements Analysis per NPS Management Policy 6.3.5 and Director's Order 41.

- 1) Does the proposed action(s) include a Section 4(c) prohibited activity?** Section 4(c) prohibited activities include: the use of mechanical transport and/or motorized equipment and vehicles, the landing of aircraft, and the installation of materials, equipment and/or structures (*hover over for more information*).

YES ☒

NO ☐

- 2) Does the proposed action(s) include any of the following?**

- a. Human actions that intentionally or unintentionally control or manipulate the components or processes of ecological systems inside the wilderness (*hover over for more information*)?

YES ☐

NO ☒

NOT SURE ☐

- b. i) Removing or killing rare or sensitive species/subspecies, ii) Handling of federally threatened or endangered species/subspecies, iii) Having more than negligible effects on the health or survival of a population of a species/subspecies, or iv) Manipulating an organism but not removing it from wilderness?

YES ☐ NO ☒ NOT SURE ☐

- c. Occur in a sensitive area or at a sensitive time for a particular species (*hover for more information*)?

YES ☐ NO ☒ NOT SURE ☐

- d. Restrict (even temporarily) visitor access to or movement in a particular area or involve surveys of visitors?

YES ☒ NO ☐ NOT SURE ☐

- e. Result in a noticeable effect (beyond that expected if the crew were members of a typical/legal recreational group) on opportunities for solitude?

YES ☒ NO ☐ NOT SURE ☐

- f. Include aerial surveys over wilderness?

YES ☐ NO ☒ NOT SURE ☐

If you answered YES or NOT SURE to any of the questions in this section, complete Section C.

If you answered NO to all of the questions in this section, contact the Environmental Compliance Office before completing the rest of this form.

C. DETERMINE IF THE ACTIONS ARE NECESSARY AND APPROPRIATE

Answer the following questions to determine if the proposed actions should be performed.

- 1) Is this proposed action(s) a response to an emergency as determined by the superintendent in accordance with law and policy?**

YES ☐ NO ☒

If the answer is YES and the approved emergency SOPs and management plans have gone through a Minimum Requirements Analysis, skip to Section F and follow the approved plans. If the approved plans have not gone through a Minimum Requirements Analysis, continue completing this form.

- 2) Is the proposed action(s) necessary to meet the requirements of other federal law(s) (i.e., any special provisions of the Wilderness Act of 1964 or subsequent wilderness laws) or does a federal law(s) support the proposed actions (e.g., Organic Act, Omnibus Management Act, Endangered Species Act, or any other federal laws)?**

YES ☐ NO ☒

If the answer is YES, cite the law(s) and section:

- 3) Is the proposed action(s) outlined in this project necessary to preserve one or more of the 5 qualities of wilderness character? (See Appendix 2)

Untrammeled	Undeveloped	Natural	Solitude/Primitive/ Unconfined	Other Features
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

If the answer is YES, describe how the wilderness character(s) specified will be affected if the proposed actions are not taken: ***The undeveloped character of wilderness will be marred by the continuous visual sight of boardwalk debris. The debris will also serve as a visual reminder that the wilderness is not in its natural state because the rest of the wilderness area is very flat, barren, and lacks many large objects.***

- 4) Is the proposed action(s) necessary to achieve one or more of the public purposes for wilderness as stated in Section 4(b) of the Wilderness Act: “recreational, scenic, scientific, educational, conservation, or historical use”?

YES ☒ NO ☐

If the answer is YES, explain: ***Removal of debris is necessary to maintain the scenic value of the wilderness area surrounding Salt Creek.***

If you answered YES to any question 2-4 above, continue to the next section.

If you answered NO to all questions 2-4 above, contact the Environmental Compliance Office or your Park contact before completing the rest of this form.

D. STATE PROPOSAL ALTERNATIVES

This section is for stating any reasonable alternatives for executing the proposed action(s). Simple proposals (e.g., no prohibited uses) may only need one alternative. Other proposals may need additional alternatives to help determine the minimum tool to execute the proposed action(s). Depending on the complexity of the proposal, you may want to include the No Action or Current Management Strategy to develop a baseline for your proposed action(s). Note that there is no limit to the number of reasonable alternatives considered, but the level of analysis provided should be commensurate with the anticipated level of impact to wilderness resources.

For Table 1, identify the core steps which must take place in wilderness in order to complete the project (column 1). Next, determine different ways (alternatives) in which those steps can be accomplished. Different alternatives must satisfy the same steps in different ways. For example, steps could be “Transport supplies to the work site” and “Erect wire fencing” and different alternatives to accomplish those steps could be “Use human labor” or “Use machinery”. If needed, contact appropriate park staff to determine the current management strategy (if any) related to the proposed actions. See Appendix 3 for an example of a completed table. If additional space is needed, use the extra tables provided in Appendix 4.

Table 1: Project Core Steps and Alternatives

Core Steps	No Action – Current Management Strategy	Alternative 1 Heli. & Hand Tools	Alternative 2 Heli. & Motorized Tools	Alternative 3 No Heli. & Hand Tools	Alternative 4 No Heli. & Motorized Tools
Crew access to site	No access would occur.	Crew would hike into site, observing LNT principles.	Crew would hike into site, observing LNT principles.	Crew would hike into site, observing LNT principles.	Crew would hike into site, observing LNT principles.
Crew removal of debris from ground	No debris removal from the ground would occur.	Crews would remove as much above-ground debris, or accessible portions of partially buried debris, using only hand tools. Large debris that could not be broken down with hand tools could be sling-loaded out of wilderness.	Crews would remove as much above-ground debris, or accessible portions of partially buried debris, using both hand tools and motorized tools, though the latter would only be used for large pieces of boardwalk that need to be broken down.	Crews would remove as much above-ground debris, or accessible portion of partially buried debris, using only hand tools. Large debris that could not be broken down with hand tools would remain in wilderness.	Crews would remove as much above-ground debris, or accessible portions of partially buried debris, using both hand tools and motorized tools, though the latter would only be used for large pieces of boardwalk that need to be broken down.
Final removal of debris	Debris would remain in wilderness.	Debris would be prepped for sling-load removal by helicopter. Helicopter would not land in wilderness.	Debris would be prepped for sling-load removal by helicopter. Helicopter would not land in wilderness.	Debris would be hauled back to the Salt Creek Boardwalk parking lot area and loaded onto trucks for removal.	Debris would be hauled back to the Salt Creek Boardwalk parking lot area and loaded onto trucks for removal.

For each alternative, provide a narrative that describes the actions for the core steps.

No Action – Under the No Action alternative, no debris removal would occur and the debris would remain in wilderness indefinitely. Over time, aboveground debris may be buried by other flooding or depositional events; alternatively, missing debris may be uncovered by erosion or scouring.

Alternative 1 – Under Alternative 1, crews would walk to debris in wilderness and remove as much aboveground debris as possible with hand tools only. The debris would then be prepped for helicopter removal. The helicopter would remove, via sling-load, the debris without landing in wilderness. This would likely limit the total amount of debris that is removed and increase the crew’s time in wilderness.

Alternative 2 – Under Alternative 2, crews would walk to debris in wilderness and remove as much aboveground debris as possible using both hand tools and motorized tools. The debris would then be prepped for helicopter removal. The helicopter would remove, via sling-load, the debris without landing in wilderness. This would maximize the amount of debris that can be removed and decrease the crew’s time in wilderness.

Alternative 3 – Under Alternative 3, crews would walk to debris in wilderness and remove as much aboveground debris as possible with hand tools only. The debris would then be hauled back to Salt Creek Boardwalk parking lot by hand. Large pieces of boardwalk that could not be dismantled with hand tools would remain in wilderness.

Alternative 4 – Under Alternative 4, crews would walk to debris in wilderness and remove as much aboveground debris as possible using both hand tools and motorized tools. The debris would then be hauled back to Salt Creek Boardwalk parking lot by hand. Debris that is too heavy or unwieldy for crews to carry back would remain in wilderness.

E. EVALUATE PROPOSAL ALTERNATIVES

Use the tables in this section to evaluate the alternatives from Section D. Reference Appendix 2 for definitions of each wilderness character and actions that can degrade those characters, including prohibited uses. Extra tables provided in Appendix 4.

Analyzing Impacts to Wilderness Character

Note if the project alternatives have any impacts on wilderness character in Tables 2 and 3. Distinguish between short-term (S) and long-term (L) impacts. You may select more than one box. If there are no impacts, do not select a box. Use Table 4 to provide a narrative of impacts.

Table 2: Negative Impacts to Wilderness Character

	Untrammeled	Undeveloped	Natural	Solitude/Primitive /Unconfined	Other Features
No Action	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>
Alternative 1	S <input type="checkbox"/> L <input type="checkbox"/>	S <input checked="" type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input checked="" type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>

Alternative 2	S <input type="checkbox"/> L <input type="checkbox"/>	S <input checked="" type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input checked="" type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>
Alternative 3	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input checked="" type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>
Alternative 4	S <input type="checkbox"/> L <input type="checkbox"/>	S <input checked="" type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input checked="" type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>

Table 3: Positive Impacts to Wilderness Character

	Untrammeled	Undeveloped	Natural	Solitude/Primitive /Unconfined	Other Features
No Action	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>
Alternative 1	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>
Alternative 2	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>
Alternative 3	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>
Alternative 4	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input checked="" type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>	S <input type="checkbox"/> L <input type="checkbox"/>

Table 4: For each alternative, provide a narrative that describes the impacts noted above.

Alternative	Narrative of Impact(s) to Wilderness Character
No Action	Leaving the debris in wilderness would have long-term negative impacts to the undeveloped, natural, and 'Other' (scenic) characteristics of wilderness. The debris would be a visible mark of human impact in wilderness. It would be a visual reminder that the landscape is not untouched nature.
Alternative 1	Alternative 1 would have short-term negative impacts to the solitude characteristic of wilderness due to the crew's presence in wilderness, temporary closure of the site, and noise generated from debris removal and helicopter pick-up of debris. Helicopter usage would have a short-term negative impact on the undeveloped characteristic. Alternative 1 would have long-term positive impacts on the undeveloped and natural characteristics of wilderness by mostly restoring the natural, undeveloped look of the wilderness. Some aboveground debris would remain in wilderness if it could not be removed with hand tools.
Alternative 2	Alternative 2 would have short-term negative impacts to the solitude characteristic of wilderness due to the crew's presence in wilderness, temporary closure of the site, and noise generated from debris removal and helicopter pick-up of debris. Helicopter usage would have a short-term negative impact on the undeveloped characteristic. Alternative 2 would have long-term positive impacts on the undeveloped and natural characteristics of wilderness by mostly restoring the natural, undeveloped look of the wilderness. Most debris would be removed from wilderness. The debris that remained would be partially buried or belowground.
Alternative 3	Alternative 3 would have short-term negative impacts to the solitude characteristic of wilderness due to the crew's presence in wilderness, temporary closure of the site, and noise generated from debris removal. The noise impact would be less than Alternative 1 and 2. There would be long-term negative impacts to the 'Other' scenic values of wilderness, as large pieces of

	boardwalk debris that cannot be dismantled with hand tools would remain in wilderness. There would be long-term positive impacts to the undeveloped and natural characteristics of wilderness by removing boardwalk debris.
Alternative 4	Alternative 4 would have short-term negative impacts to the solitude characteristic of wilderness due to the crew's presence in wilderness, temporary closure of the site, and noise generated from debris removal. The noise impact would be less than Alternative 1 and 2, but more than Alternative 3. The presence of motorized tools would be a short-term negative impact to the undeveloped characteristic of wilderness, though less of an impact than Alternative 1 and 2. There would be long-term negative impacts to the 'Other' scenic values of wilderness, as boardwalk debris that is too heavy to be carried out by hand would remain in wilderness. There would be long-term positive impacts to the undeveloped and natural characteristics of wilderness by removing boardwalk debris.

Analyzing Other Considerations

Use Table 5 to explain how other things may be affected (both directly and indirectly) by the proposed alternatives. Consider effects on natural or cultural resources; social, recreational, economic, timing, or experiential effects; societal or political impacts.

Table 5: Other Considerations

Alternative	Additional Impact(s) of Project Alternatives
No Action	If visible debris remains in wilderness, visitors may attempt to hike towards it. In hot months, this could increase search and rescue operations because visitors often underestimate distance and water needed to complete hikes.
Alternatives 3 & 4	Hauling all debris from wilderness to the boardwalk parking lot would require many back-and-forth trips on foot. This would create long-lasting, noticeable trails on the ground between Salt Creek and Highway 190. Hauling debris out of wilderness to the boardwalk parking lot would also, at minimum, double the amount of time crews must spend in wilderness, and conversely, increase the amount of time the wilderness area (in the vicinity of the crew) would be closed to visitors.

F. SELECTING THE MINIMUM REQUIREMENT ALTERNATIVE

Taking into account all potential impacts and factors from Tables 2-4, select the alternative that will most effectively resolve the issue/study the proposal seeks to address while having the least overall adverse impact on park resources, values and visitor experience, and on wilderness resources and character. Note: any actions declared an emergency (see Section B) do not require filling out Tables 2-4 or sections C through E.

When selecting the preferred alternative for actions in wilderness, the potential disruption of wilderness character and resources will be considered before, and given significantly more

weight than, economic efficiency and convenience. If a compromise of wilderness resources or character is unavoidable, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts will be acceptable. Provide detailed justification for the selected alternative. Include the tools or methods which will be utilized to complete the project and the steps which will be taken to minimize impacts:

The preferred alternative is Alternative 2. Alternative 2 minimizes the amount of time crews spend in wilderness (which in turn minimizes the time visitor restrictions are in place) while maximizing the amount of aboveground debris that can be removed. Alternative 2 would avoid the creation of hardened footpaths from repeated trips to the debris. Alternative 2 would have the most long-term beneficial impact on the undeveloped and natural character of wilderness, with only short-term adverse impacts to the solitude and undeveloped characteristics of wilderness. Crews would observe Leave No Trace principles and avoid sensitive resources when planning their path to debris. Where feasible, preparation for sling-loading would occur in washes, where no resource concerns are anticipated.

G. PROJECT APPROVAL

This project has been reviewed and approved by the following individuals. Project Alternative 2 – ***Heli. and Motorized Tools*** has been selected and will be carried out following the methods described on this form.

Preparer:

Kali Richardson, GBI NEPA Specialist

Sign Here:

KALI
RICHARDSON
(Affiliate)

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RICHARDSON (Affiliate)
Date: 2024.07.24
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NEPA Specialist:

Ben Dunphey, Environmental Compliance
Manager

Sign Here:



BENJAMIN
DUNPHEY
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Park Superintendent:

Mike Reynolds

Sign Here:

MICHAEL
REYNOLDS

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Date: 2024.07.24 10:33:34 -07'00'

APPENDIX 1 – GUIDANCE FOR MINIMUM REQUIREMENTS

Wilderness Act of 1964 - Prohibition Of Certain Uses Section 4(c) Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

National Park Service Management Policy 6.3.5 – Minimum Requirements All management decisions affecting wilderness must be consistent with the minimum requirement concept. This concept is a documented process used to determine if administrative actions, projects, or programs undertaken by the Service or its agents and affecting wilderness character, resources, or the visitor experience are necessary, and if so how to minimize impacts. The minimum requirement concept will be applied as a two-step process that determines

- whether the proposed management action is appropriate or necessary for administration of the area as wilderness and does not cause a significant impact to wilderness resources and character, in accordance with the [Wilderness Act](#); and
- the techniques and types of equipment needed to ensure that impacts on wilderness resources and character are minimized.

In accordance with this policy, superintendents will apply the minimum requirement concept in the context of wilderness stewardship planning, as well as to all other administrative practices, proposed special uses, scientific activities, and equipment use in wilderness. The only exception to the minimum requirement policy is for eligible areas that the Service has not proposed for wilderness designation. However, those lands will still be managed to preserve their eligibility.

When determining minimum requirements, the potential disruption of wilderness character and resources will be considered before, and given significantly more weight than, economic efficiency and convenience. If a compromise of wilderness resources or character is unavoidable, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts will be acceptable.

Although park managers have flexibility in identifying the method used to determine minimum requirement, the method used must clearly weigh the benefits and impacts of the proposal, document the decision-making process, and be supported by an appropriate environmental compliance document. Parks must develop a process to determine minimum requirement until the plan is finally approved. Parks will complete a minimum requirement analysis on those administrative practices and equipment uses that have the potential to impact wilderness resources or values. The minimum requirement concept cannot be used to rationalize permanent roads or inappropriate or unlawful uses in wilderness.

Administrative use of motorized equipment or mechanical transport will be authorized only

- if determined by the superintendent to be the minimum requirement needed by management to achieve the purposes of the area, including the preservation of wilderness character and values, in accordance with the [Wilderness Act](#); or
- in emergency situations (for example, search and rescue, homeland security, law enforcement) involving the health or safety of persons actually within the area.

Such management activities will also be conducted in accordance with all applicable regulations, policies, and guidelines and, where practicable, will be scheduled to avoid creating adverse resource impacts or conflicts with visitor use.

While actions taken to address search and rescue, homeland security and law enforcement issues are subject to the minimum requirement concept, preplanning or programmatic planning should be undertaken whenever possible to facilitate a fast and effective response and reduce paperwork.

For more detailed guidance, see [Director's Order #41](#) and the National Wilderness Steering Committee Guidance Paper #3: "What Constitutes the Minimum Requirements in Wilderness?"

Director's Order #41 – Wilderness Stewardship Section 6.4 Minimum Requirements Parks must complete a "minimum requirements analysis" (MRA) in order to document the determination of whether a proposed action (project), which involves a prohibited use, is necessary to meet minimum requirements for the administration of the area for the purpose of wilderness. The Wilderness Act in Section 4 (c) identifies the prohibitions (codified at 16 U.S.C. 1133(c)) and Section 2 describes the purpose of wilderness (codified at 16 U.S.C. 1131).

Parks must first determine if the action (project) is necessary for the administration of the wilderness area, to realize the purpose of wilderness. Once the action (project) is determined necessary, parks must next determine the activity (method or tool) to accomplish the action (project) with the least negative impact to wilderness. This MRA should be undertaken using an interdisciplinary approach that includes the project lead, wilderness manager, resource specialists, and superintendent.

NPS Management Policies provide that a MRA must also be applied to all other administrative actions (projects) within wilderness that could potentially affect wilderness character. Also, whenever an environmental assessment or environmental impact statement is prepared for work projects within wilderness, a MRA should be included as part of the document.

Under no circumstances may a MRA be used to allow permanent roads or commercial enterprise within wilderness. The use of motorized equipment and the establishment of management facilities are specifically prohibited when other reasonable alternatives are available.

For newly designated wilderness, parks will prepare a MRA, along with an NHPA Section 106 Determination, to evaluate the retention or removal of administrative facilities, structures, and installations.

The Associate Director will ensure that additional information, guidance, and detail on applying the MRA are included in RM 41.

APPENDIX 2 – WILDERNESS CHARACTER AND VALUES

Below is Appendix E of the Death Valley Wilderness Backcountry Stewardship Plan which defines each wilderness character within Death Valley National Park and includes the Park's wilderness values.

APPENDIX E: WILDERNESS CHARACTER NARRATIVE

OVERVIEW

Wilderness character at Death Valley includes these universal and intrinsic qualities of wilderness character: naturalness, solitude or primitive and unconfined recreation, undeveloped, and untrammelled. In addition, it includes discrete features of the landscape that represent these wilderness values: ecological, geological, scientific, educational, scenic, and historical. Plus, it includes the intangible aspects of wilderness character, most notably the historic and continuing relationship of the Timbisha Shoshone people to their ancestral homeland.

NATURAL QUALITY OF WILDERNESS CHARACTER

Death Valley National Park is a vast landscape of extremes. Badwater Basin in the Death Valley trough is 282 feet below sea level making it the lowest point in North America and one of the hottest places on earth. From the floor of the salt pan the land slopes steeply and dramatically to the often snow covered Panamint Mountains, punctuated by Telescope Peak which rises to 11,049 feet above sea level. Diverse sand dunes, salty creeks, alluvial fans, ancient shorelines, playas, water fluted canyons, craters, and varied mountain ranges provide an extensive variety of habitats.

This harsh and varied desert environment provides habitat for an amazing array of plants and animals, some of which occur nowhere else in the world. The steep gradients of the landscape coupled with the ecotone influences of both the Mojave and Great Basin Deserts creates rapid transitions of life zones and immense biological diversity, a surprising aspect of a landscape that largely appears barren. This interface between two different deserts gives rise to a remarkable diversity of plant communities and intact wildlife habitats that continue to exist and evolve without recent extirpations or extinctions though several species in the park are listed as threatened or endangered. Desert tortoise, the icon of the Mojave, continues to exist at the extreme northern edge of its range in the gently sloped Greenwater Valley area of the park, while the more common desert bighorn sheep occupy the steep and rugged terrain of the park's many canyons and mountain ranges. Several species of desert pupfish survive in a handful of salty springs and pools, and along with their extinct cousins found elsewhere in the region, serve as a laboratory to study speciation and extinction in response to both past climate change and future climate change. The park's water resources are precious but few, especially the parks oasis-like perennial springs that support and attract virtually all life in the park (including humans) while also serving as the incubators for the evolution of rare and unique species of invertebrates that only exist in specific springs. These critical water resources are characterized by the periodic flooding events that, ironically, continue to be the primary geomorphic process that gives rise to the visible landscape that is mostly devoid of surface water. The rumbling of rocks in the form of colluvium and alluvium and the frequent whistle or roar of wind provide a striking contrast to the silence that often encompasses much of the park's backcountry. Such natural soundscapes, as well as relatively dark night skies and clear visibility, persist as the natural conditions under which the community of life lives.

The natural quality of the park's wilderness character is degraded by the pervasive evidence of past mining activities and pre-existing roads, while the manipulation of springs by past human actions and modern park visitors, presence of artificial water sources (e.g. guzzlers), and presence of exotic plants and animals have localized effects on this quality. There are also past grazing impacts as well as currently permitted livestock

grazing in some areas of the wilderness which degrade the natural quality. In a broader context, the naturalness is also degraded by air pollution and light pollution mostly originating from distant urban centers particularly on the south end of the park. Of special concern for air quality is the observed increase in acid deposition and the implications it has for increasing soil nitrogen. This increase in soil nitrogen benefits the non-native red brome grass which then increases the fire frequency and fire size, potentially converting native desert shrublands to alien grasslands. Even more broadly, climate change is likely acting upon the park's biophysical resources and most experts expect that the Mojave Desert will get hotter and maybe even dryer in the future. Such predictions have significant consequences for the biological resources of one of the hottest and driest places on earth.

UNDEVELOPED QUALITY OF WILDERNESS CHARACTER

Modern facilities in Death Valley National Park are few and modern facilities within the wilderness are even less common. There are a few communication installations present at Mormon Peak, Grapevine Peak and Dry Mountain, a handful of signs in wilderness, and some mine closure installations for public safety, but otherwise the millions of acres of desert wilderness are free from modern development. There are many view points within the park where the entire landscape lies within the park and the only visible sign of human development, if any, is a thin ribbon of road fading into the horizon.

In contrast, historic facilities and artifacts are common throughout the park and are frequently encountered in the wilderness. The mineral wealth and geographic location as an entry point into California during the gold rush and homesteading period has left behind ample evidence of past human developments, particularly related to 150 years of mining activities. The arid environment which slows natural decay coupled with the relative inaccessibility of many historic sites has resulted in the standing remains of numerous structures and artifacts from the last half of the 19th century and the first half of the 20th century. The arid landscape also marks the passage of people in the form of historic roads, travel routes, and utility corridors, particularly those connecting historic settlements or mining sites to the few reliable water sources yielded by such a dry place. Most of the expansive network of backcountry roads was originally constructed as historic routes of travel, then "cherry-stemmed" out of the wilderness to continue to provide vehicular access to points of interest to history buffs and mining enthusiasts. In some cases roads were closed by wilderness designation and the former road prism is still visible. Today, several thousand acres of patented mining claims remain in the form of inholdings (along with approximately 60 state land sections), but the era of industrial mining is over within the park. The visible evidence of more recent and still operational industrial mines outside of park boundaries serve as a reminder of the mineral wealth of the desert and the efforts humans will go through to extract it. Associated with the historical use period of the park, there are also the remains of cattle grazing operations in the form of fences, corrals, line shacks, and manipulated water sources. Most of the grazing has been terminated, but the Hunter Mountain Allotment remains an active allotment, grazed by the same family since the late 1800s.

Native people have long been a part of this rugged landscape as evidenced by extensive archaeological sites (and probably many more unknown sites) and the continuing relationship between this land and the modern day Timbisha Shoshone people. The Timbisha desire to continue their traditional cultural practices, such as mesquite cultivation, pinyon harvest, and spring maintenance within the Timbisha Shoshone Natural and Cultural Preservation Area, a 2.4 million acre overlay that includes both wilderness and non-wilderness lands. There are also legally designated traditional cultural properties, such as those associated with the origin of the people at Ubehebe Crater and their ancestral homelands.

The undeveloped quality is degraded by the presence of installations such as communication equipment, grazing infrastructure, fences, utility corridors, artificial water sources for wildlife and research installations. In addition, there are numerous debris piles that degrade the undeveloped quality of wilderness character in the park such as modern trash dumps, crashed aircraft, and abandoned vehicles. There are also off-road vehicle

trespass incidents, some of which remain visible for years after the incident. This quality is also degraded by those rare occasions of authorized motorized equipment usage (e.g. chainsaws, helicopter landings, etc) that are either used during emergency incidents or are authorized as the minimum tool to implement a planned activity as determined in a minimum requirements decision analysis. The loss of statutorily protected cultural resources also degrades this quality.

UNTRAMMELED QUALITY OF WILDERNESS CHARACTER

Since the designation of wilderness in 1994, the Death Valley National Park Wilderness remains largely untrammled, with few intentional manipulations of the park's biophysical resources. Where such trammels do occur, they are generally very localized and small in scale. Thus in many ways the wilderness serves as a natural laboratory for the study of landscape-scale ecosystem processes. This lack of intentional manipulation is both by design and by default. It is also an unplanned consequence of a park with a large land base that is perpetually underfunded and understaffed, where most of the park's attention is necessarily focused on managing the developed areas where most visitation occurs, thus leaving few resources to expend in remote wilderness areas of the park.

This quality is degraded by actions that deliberately control or manipulate the earth and its community of life. The most frequent form of trammeling that has occurred is the control of exotic plants in desert springs and removal of burros to protect bighorn sheep. Exotic plant removal has occurred almost annually in recent years, while burro removal was a common occurrence in the past and is anticipated to be a regular occurrence in the future. The most pervasive form of trammel within the park is the indirect influence of numerous paved and unpaved roads which alter water flows and alluvial processes through their alignment, ditches, culverts, and other engineered features. The other forms of trammeling that occur are very isolated incidents. There is only one natural ignition that has been suppressed in the park in the history of fire record keeping, the Bullfrog Fire of 2006 which burned in non-wilderness lands, and that suppression action was in the form of mop-up after the fire had made its initial run and thus likely didn't alter the fire perimeter or intensity of the burn. There have been several human caused ignitions in the wilderness that have been suppressed, most notably the Happy Fire of 2000. There are a few artificial wildlife watering locations primarily on the northwest side of the park that were inherited when the lands were added in 1994 and the presence of artificial water serves to manipulate the distribution and abundance of wildlife species, though it is not known to what extent any of the guzzlers are still functional. Over time, many of the park's natural water sources have been manipulated by humans to provide more reliable or usable water for human uses, livestock, or wildlife. With the exception of Timbisha cultural practices at a few spring sites, such manipulations are not condoned by Park Managers but may still go on in some places. Also as part of the park's ongoing efforts to mitigate public safety threats posed by abandoned mine sites, some soils have been re-contoured or backfilled and bat gates/cupolas have been installed which may alter use by wildlife. Plants, animals, or physical resources are sometimes authorized for scientific collection through a research permit process, but there may also be instances where collections exceed permit limits or plants and animals are taken (poached) illegally.

SOLITUDE OR PRIMITIVE AND UNCONFINED RECREATION QUALITY OF WILDERNESS CHARACTER

The vastness of the landscape, the lack of trails or facilities, and the harshness of the environment give rise to an abundance of solitude. In many areas of the park, a backpacker can go for days without encountering another person and this is especially true in the Cottonwood Mountains, Grapevine Mountains, and Tucki Mountain. The rugged topography and lack of water provides for the ultimate desert backcountry experience with abundant opportunities for challenge and self-reliance, including a chance for wintertime trips without winter conditions, equipment, or skills as well as summertime trips to the high elevation lands. The sheer size of the park coupled with the varied topography and complex geology means that there are a wide variety of backcountry experiences available, most of which can be accessed without traversing a developed area. With

open terrain, few nocturnal predators, clear night skies, and no canopy overhead, the park provides a unique opportunity for night hiking. Most visitor destinations focus on springs, historic sites, canyons, summits, and geologic wonders, but with almost no trails visitors traverse the landscape in whatever way and direction their physical ability and sense of adventure lead with few or no encounters with other visitors. This vastness and relatively low visitation provides ample opportunity for solitude, a chance to contemplate the mysteries of universes while observing the dark night sky, and the sounds of nature where it can be so quiet you can hear the rumble of rock against rock or even the saltation of soil particles as they continue the erosive processes that shape the land.

Given the vastness of the landscape, there are very few signs, trails, or designated campsites and those that do exist are usually in close proximity to roads. As of 2011, there are about 15 miles of designated hiking trail/routes and over a 100 miles of hiking routes that connect points of interest and water sources but are not maintained as formal trails by the NPS. There are relatively few regulations that confine the visitor's opportunity for primitive and unconfined recreation, though there are a few no camping zones as well as restrictions about fire use, length of stay, and party size. Such lack of regulations are typical of immediately surrounding BLM and Forest Service wilderness areas though a little more restrictive than adjacent BLM lands, but are vastly less restrictive than the experiences offered in the nearby Sierra Nevada park and wilderness areas. There are very limited opportunities for stock use and such use is infrequent. Most recreational experiences require advance knowledge and backcountry skills as there are few opportunities for help and the harsh environment is unforgiving of mistakes.

The opportunity for solitude or primitive and unconfined recreation is generally greatest in the northern end of the park and less available in the southern end of the park due to the influence of surrounding military operations (debris and overflights) and the influence of air pollution and light pollution originating from distant population centers in Las Vegas, NV and Los Angeles, CA. However, many of these impacts are not easily detected by a short-term visit to the park and so from the perspective of a wilderness visitor solitude is still easily found anywhere off the paved roads in this vast park.

This opportunity for solitude is degraded by the presence of frequent military overflights at some locations and an abundant network of backcountry roads which both provide access but also are visible and audible for long distances. It is also diminished by reduced visibility caused by poor air quality and light pollution, both originating from regional population centers hundreds of miles beyond park boundaries. New recreational pursuits, such as sand kiting have the potential to diminish opportunities for solitude due to the equipment used. These uses tend to concentrate at specific sites and it is likely in the future new forms of extreme sports will further exacerbate this condition. The primitive and unconfined quality is degraded by visitor use restrictions, particularly no camping in the Valley floor and along high use corridors such as Mosaic and Natural Bridge canyons.

INTANGIBLE ASPECTS OF WILDERNESS CHARACTER

The Timbisha Shoshone Tribe has occupied the area encompassed by Death Valley National Park for thousands of years. Their elders occupied and used the vast lands now defined as Wilderness, and their descendants still visit and utilize those areas today. While the Timbisha do not necessarily recognize the concept of Wilderness as defined by Congress (since one is never truly alone), they do identify Wilderness as a tool to protect land from development, encroachment, and incompatible uses, and understand the Park's duty to protect these areas. Passage of the Timbisha Shoshone Homeland Act of 2000 (P.L. 106-423) established a land base for the Tribe and a large Natural and Cultural Preservation Area and special use areas (+1.5 million acres), much of which is in Wilderness. However, since the NPS-Timbisha Cooperative Management Agreement has not been finalized, this means that there are many aspects of this relationship as yet to be defined and clarified. Access to places of importance, and management of resources, including gathering and management of plant resources have at times been complicated by NPS rules and regulations.

Communication between the Park and the Tribe has not always been effective in the past, but is expected to improve over time.

The Timbisha recognize existing impacts to wilderness that they would like to see reduced. Overflights by military and private aircraft disturb their experiences in Wilderness. The presence of high numbers of people hiking off trail is not desired by the Timbisha, and protection of cultural and natural resources is of the utmost importance. The Tribe would like to continue to work with the park to identify sensitive areas for resource protection (such as campsites, birthing areas, and cache areas), and receive information on resources and management from the Park as well. The Tribe would also like to continue to pass along its traditional cultural knowledge to younger tribal members through site visits and ceremonies. While the Tribe does not favor mechanized intrusions into Wilderness, they acknowledge that some motorized travel may be necessary to transport elderly cultural practitioners into now relatively inaccessible areas.

WILDERNESS VALUES

Wilderness values are things that add value to wilderness *where they occur* but are not universally intrinsic to all wilderness lands within the park. These are features of the landscape to be valued and preserved by park management as they contribute to wilderness character and they are also of value for reasons not related to wilderness as specifically identified in the enabling legislation and/or General Management Plan. The Wilderness Act in Section 2(c)(4) lists the categories in which these wilderness values might exist: ecological, geological, scientific, educational, scenic, or historical value.

Of particular importance at Death Valley are the cultural resources. The California Desert Protection Act of 1994 added significant acreage to Death Valley National Park, established most of the park as wilderness, and directed the park to "... protect and preserve historical and cultural values of the California desert associated with ancient Indian cultures, patterns of western exploration and settlement, and sites exemplifying the mining, ranching and railroading history of the Old West..." Passage of the act added many thousands of prehistoric sites, as well as hundreds of very visible historic structures, including cabins and mining infrastructure, such as tramways, headframes, and mills - many of which are located in wilderness. For this reason, much of the discussion of wilderness values at Death Valley will be focused on cultural resources.

Table 1. Wilderness Values at Death Valley National Park (modified from original document for 508 compliance)

Ecological Values:

- extreme conditions and isolation provide habitat for an unusually high number of plant and animal species that are highly adapted to these conditions¹ (e.g. endemic species)
- provides habitat for a number of threatened, endangered, and sensitive species

Geological Values:

- World renowned for its exposed, complex and diverse geology and tectonics, and for its unusual geologic features, providing a natural geologic museum that represents a substantial portion of the earth's history¹
- includes a continuous section of the Pleistocene shoreline of Lake Manly providing an excellent opportunity for quaternary studies

Scientific Values:

- contains one of the nation's most diverse and significant fossil records and most continuous volcanic histories¹
- contains five major sand dune systems representing all types of dune structures, making it one of the only places on earth where this variety of dune types occurs in such close proximity¹
- provides for the study of extreme environments because it contains the lowest point in North America, the driest spot in the US, and is one of the hottest places on earth¹

Educational Values:

- one of the largest expanses of protected warm desert in the world ¹
- provides outstanding opportunities for solitude, challenge, and self-reliance including the opportunity to practice primitive skills and use primitive tools

Scenic Values:

- the extremely colorful, complex, and highly visible geology and steep rugged mountains and canyons provide some of the most dramatic visual landscapes in the US ¹
- includes some of the darkest night skies in the region, especially on the north end of the park

Historical Values:

- continuous home of Native Americans, from prehistoric cultures to the present day Timbisha Shoshone Tribe ¹
- contains an unusually high number of well preserved archeological sites, including rock art and alignments ¹
- includes an extensive and well preserved mining history representing over 150 years of mining technology¹¹

¹ taken from 2002 Death Valley General Management Plan