

Environmental Assessment

Villages at Tule Springs Roadway/Utilities Crossings and the Tufa Trail

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Prepared for:



National Park Service
601 Nevada Way
Boulder City, NV 89005

Prepared by:



3265 N. Fort Apache Road, Suite 110
Las Vegas, NV 89129

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Acronyms and Abbreviations

APE	Area of potential effect
BLM	Bureau of Land Management
BMP	Best Management Practice
CFR	Code of Federal Regulations
CNLV	City of North Las Vegas
EA	Environmental assessment
ESA	Environmental site assessment
ESF	Environmental screening form
KBS	KBS SOR Park Highlands, LLC
MBTA	Migratory Bird Treaty Act
NAC	Nevada Administrative Code
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PBO	Programmatic Biological Opinion
ROW	Right of way
SWReGAP	Southwest Regional Gap Analysis Project
TUSK	Tule Springs Fossil Beds National Monument
USC	United States Code
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WOUS	Waters of the United States

1.0 Introduction

The City of North Las Vegas (CNLV), in cooperation with the National Park Service (NPS), proposes exchanging land easements to develop The Villages at Tule Springs while minimally disturbing Tule Springs Fossil Beds National Monument (TUSK). The following sections detail the purpose and need of the proposed project and explains why this project must comply with the National Environmental Policy Act (NEPA) of 1969.

1.1 Purpose and Need

The proposed land exchange, crossings, and trails will involve NPS land, and therefore require analysis of potential effects upon the environment analyzed under NEPA.

NPS would like to obtain the roadway portion of an existing easement within the boundaries of the park from the CNLV. The CNLV currently holds the right of way (ROW) N-83310, granted in perpetuity for roadway, drainage, and public utility facilities (water and sewer), of which a portion (approximately 20.5 acres) lies within TUSK. If this easement is developed, a multi-lane roadway could separate the sensitive Eglington Preserve area from the rest of the park (see Figure 1). NPS needs to eliminate the potential for the CNLV to construct a major roadway that would bisect the TUSK while allowing the CNLV to connect to roads and utilities to the planned community. Details of each of the project components are discussed in Chapter 2.

1.2 National Environmental Policy Act

The proposed land exchange, crossings, and trails will involve NPS land, and therefore require analysis of potential effects upon the environment analyzed under NEPA.

This Environmental Assessment (EA) was prepared to evaluate potential environmental, socioeconomic, and cultural resource effects from the action alternative to complete the land exchange, construct three roadway/utility crossings, and construct two trails as well as a no action alternative that does not facilitate the land exchange and construction of the three roadway/utility crossings. The EA was prepared in compliance with NEPA and implementing regulations, 40 Code of Federal Regulations (CFR) 1500–1508, and NPS Director’s Order-12 and Handbook, Conservation Planning, Environmental Impact Analysis, and Decision-Making (NPS 2015a). If the EA determines that significant impacts would occur because of the proposed project, an Environmental Impact Statement would be required; otherwise, a Finding of No Significant Impact will be prepared.

1.3 Scoping

On October 6, 2016, several members of the project team did a site reconnaissance visit to look at the project area. Additionally, several meetings and/or conference calls were held with internal interdisciplinary team members on to identify team member roles and to discuss purpose and need, existing conditions, and environmental topics for analysis. Internal scoping was conducted with NPS

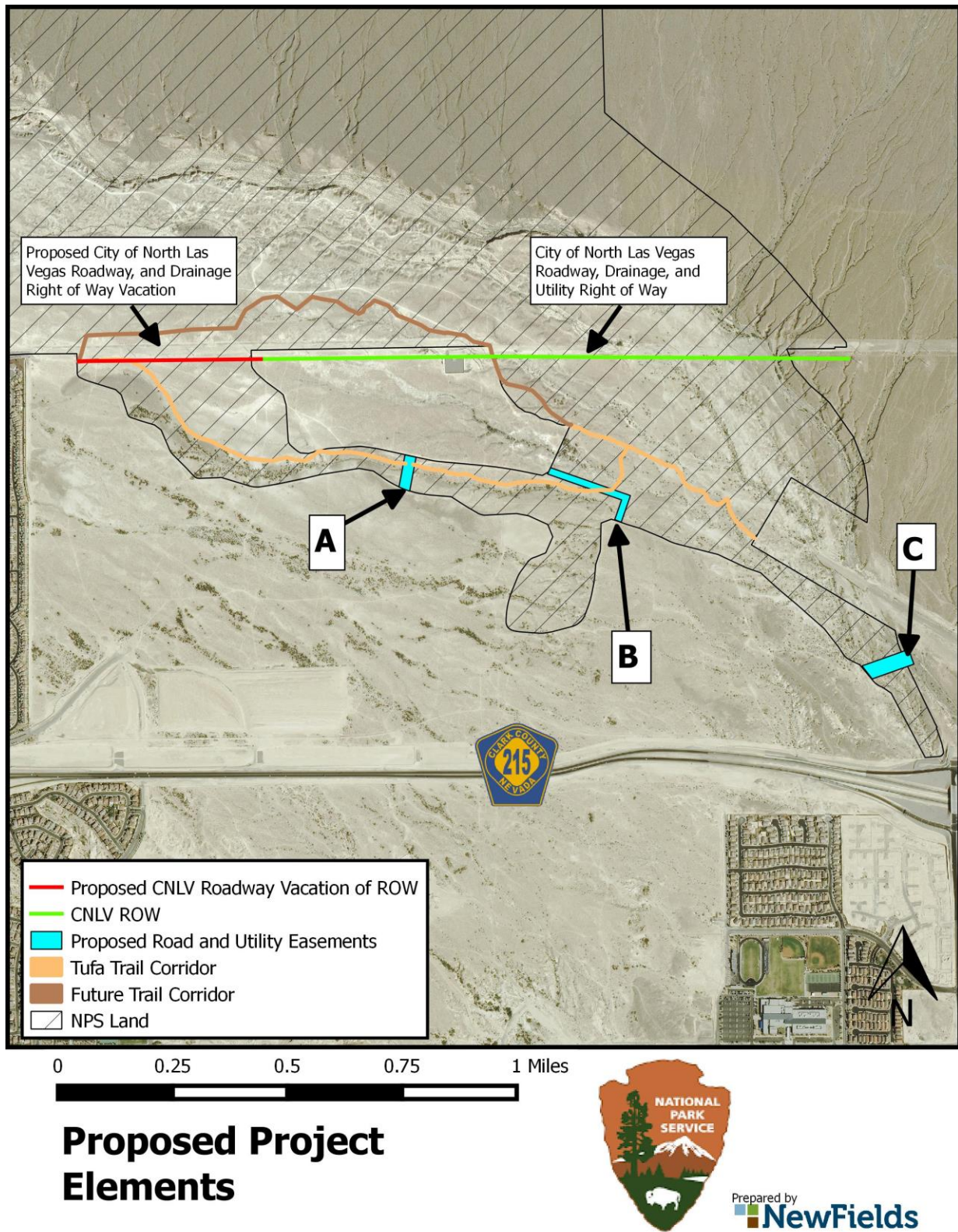


Figure 1. Proposed Project Elements

personnel and the consultant. An Environmental Screening Form (ESF) was completed and sent to NPS on March 21, 2017, which identified resource topics to consider for analysis of potential impacts, such as impacts to Geological and Paleontological Resources; Soils; Vegetation; Protected and Sensitive Plant Species; Wildlife; Species Protected under the Endangered Species Act; Cultural Resources; Visitor Use and Experience; Water Resources; and Hazardous Materials.

TUSK issued a press release on February 8, 2017, to initiate the scoping process. At that same time, a notice was posted on the NPS website and the Planning Environment and Public Comment project home page. During the 30-day scoping period, six comments were received. Four comments were in favor of the project, one against, and one comment included specific questions about the project and/or management direction of the park.

1.4 How to Comment on this EA

This EA will be posted on the NPS's Planning Environmental and Public Comment website for 30 days. Public comments can be submitted to the NPS through the [website](#) or mailed to Tule Springs Fossil Beds National Monument, Compliance Office, 601 Nevada Way, Boulder City, Nevada 89005. Additionally, NPS will issue a press release to local media and send a notification letter to the NPS NEPA mailing list.

Before including personal information, be aware that your entire comment, including your personal identifying information, may be made publically available at any time. Although you can ask us to withhold this information from public review, we cannot guarantee that we will be able to do so.

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2.0 Detailed Project Description

The following sections describe elements of the proposed project in detail.

2.1 No Action Alternative

If the No Action Alternative were chosen, the CNLV would not relinquish the roadway portion of its ROW N-83310 and would retain the right to build a roadway that would bisect a portion of TUSK. The roadway would likely be developed because it would provide the only road and utility access to the portion of the Planned Community surrounded by TUSK land. The NPS would not convey easements for the Crossings to CNLV and KBS SOR Park Highlands, LLC (KBS) would not build the Tufa Trail.

2.2 Action Alternative (NPS Preferred Alternative)

With the proposed land exchange, NPS would acquire a portion of land (approximately 20.5 acres) that lies within TUSK. The land exchange would eliminate the potential for the CNLV to construct a major roadway that would bisect the TUSK while allowing the CNLV to connect to roads and utilities to the planned community. The CNLV would obtain three perpetual easements for utilities and/or roadways on land in the Eglington Preserve area within the TUSK from NPS, totaling approximately 5.63 acres, designated as Crossings A, B, and C (hereinafter, collectively, the **"Crossings"** and individually as **"Crossing A," "Crossing B,"** or **"Crossing C,"** as applicable). The easements are included in the development plan for The Villages at Tule Springs, a 2,002-acre master-planned residential community (**"Planned Community"**) within North Las Vegas. The CNLV identified the need for these transportation and utility crossings prior to creation of the TUSK in the *Conservation Agreement for the Management of Special Resources on Bureau of Land Management Parcels Nominated for Disposal* (Bureau of Land Management [BLM] 2005).

The proposed exchange also includes construction of approximately 3.2 miles of developed trails within TUSK to encourage visitors to access the monument in a manner that will protect park resources. This trail will be completed in phases. KBS would construct the tufa trail, which would allow public access to the TUSK, while concentrating visitor traffic and reducing the impacts of overland travel. NPS would build the future trail system as resources become available.

For clarity, the proposed Crossings are discussed in Section 2.2.1 and the Tufa Trail is discussed in Section 2.2.2.

2.2.1 Crossings

Part of the proposed project includes construction, operation, and maintenance of two proposed new roadway and utility crossings and one proposed drainage/sewer and utility crossing to the Planned Community. The project is located north of Bruce Woodbury Beltway (I-215), and is bounded on the east by Losee Road and on the west by 5th Street. The following paragraphs describe each crossing in greater detail.

Crossing A would be a road approximately 390 feet long and 130 feet wide, located south of the Grand Teton Drive ROW Alignment. Roads would be designed to allow the conveyance of existing storm flows by culverts, pipes, or arch structures in accordance with permitting by the U.S. Army Corps of Engineers (USACE). Approximately 30 feet of the requested ROW (15 feet on each side of the perpetual ROW) would be temporarily disturbed during construction and reclaimed post-construction.

Crossing B would be a sewer/storm drain and underground utility crossing approximately 1,225 feet long and 80 feet wide from the Tule Springs island parcel located near the Grand Teton ROW Alignment/future Tule Springs Parkway Alignment. Approximately 40 feet of the requested ROW (20 feet on each side of the perpetual ROW) would be temporarily disturbed during construction and reclaimed post construction.

Crossing C would be a 540-foot-long and 180-foot-wide roadway and utility crossing near North 5th Street. Roads would be designed to allow the conveyance of existing storm flows by culverts, pipes, or arch structures in accordance with permitting by USACE. Approximately 20 feet of the requested ROW (10 feet on each side of the perpetual ROW) would be temporary disturbance during construction and reclaimed post construction.

Table 1 summarizes the ROW dimensions and disturbances for the ROW crossings.

Table 1. ROW Dimensions and Disturbance Calculations

ROW Crossing	Length (feet)	Permanent Width (feet)	Temporary Disturbance Width (feet)	Total Width (feet)	Permanent Disturbance (square feet)	Temporary Disturbance (square feet)	Total Disturbance (square feet)
Crossing A	390	100	30	130	39,000	11,700	50,700
Crossing B	1,225	40	40	80	49,000	49,000	98,000
Crossing C	540	160	20	180	86,400	10,800	97,200
Total Square Feet					175,400	71,500	245,900
Total Acres					4.03*	1.64*	5.64*

*These acreage figures are subject to revisions based on development of the official records of survey.

Construction Activities

Construction of the crossings will include new overland roadway construction (Crossings A and C), and new buried utilities (Crossings A, B, and C). Construction activities will begin after obtaining all relevant permits and will include clearing vegetation, grading, trenching, and paving and/or installing utilities as described for each crossing previously. All utilities constructed in these ROWs will meet CNLV standards. Plant material and soils removed from the ROW would be disbursed in accordance with NPS requirements and used as necessary in post-construction restoration. It is anticipated that construction activities would take approximately 12 months. It is also anticipated that 25 to 45 construction workers would be required to complete the project. Typical construction work hours will conform to local city

ordinances. Temporary staging areas will be located on private land within the Planned Community, including parking areas. Equipment to be used during construction activities include backhoes, cranes, mechanical compactors, paving machines, water trucks, and material delivery trucks.

Maintenance Activities

Once the facilities are constructed, they will be maintained by CNLV. The CNLV shall maintain the roads and utilities in a safe, usable condition as determined by the City. A regular maintenance program may include, but is not limited to, street sweeping, resurfacing, and facility repair. Maintenance will be performed as needed, and will limit noise, dust, and the danger caused by maintenance vehicle traffic, which will provide for the safety and comfort of local residences and park visitors.

Wastes and Hazardous Materials

No hazardous materials are associated with the road construction and operation; however, the potential for petroleum spills still exists during construction and road maintenance. Spill cleanup kits will be available on equipment so that spills or leaks of vehicle fluids can be quickly cleaned up for proper disposal.

Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash, including stakes and flags, will be removed from the sites and disposed of in an approved manner. No construction equipment oil or fuel will be drained on the ground. Oils or chemicals will be hauled to an approved site for disposal. No open burning of construction trash will occur on or near NPS-administered lands.

Surface Reclamation

Following construction and cleanup, disturbed areas adjacent to the roadways (Crossings A and C) and the disturbed area over the underground sewer/storm drain (Crossing B) will be reclaimed as agreed to with the NPS. Surface reclamation will be achieved through salvage and replacement of topsoil, salvage and replacement of vegetation, re-seeding with native species, or a combination of those methods.

2.2.2 Tufa Pedestrian Trail and Future Trail

NPS also proposes constructing approximately 17,530 feet of trail, approximately 12 feet wide, within TUSK. This trail will be constructed in phases. Phase I (depicted as the Proposed Tufa Trail on Figure 1) will be constructed by KBS at the same time as Crossings A, B, and C, as described previously. Future trail, shown on Figure 1, will be constructed by NPS as funding allows. All trails will comply with NPS design standards. Disturbance associated with the trails is listed in Table 2.

Table 2. Proposed Trail Phases, Features, Dimensions, and Disturbance Acreage

Trail	Features	Length (feet)	Width (feet)	Total Disturbance (acres)
Proposed Tufa Trail	<ul style="list-style-type: none"> Constructed by KBS during construction of Crossings NPS will review and approve trail plans and specifications 10 feet wide plus 1 foot on each side for edging 3 bridges over existing washes Access to trail from both sides of Crossing A Gates to be installed into existing fencing for access points 	9,942	12	2.74
Future Trail	<ul style="list-style-type: none"> To be constructed by NPS as funding becomes available 10 feet wide plus 1 foot on each side for edging Gates to be installed into existing fencing to allow access 3-foot bridges 	7,588	12	2.09
Total Disturbance				4.83

Proposed Tufa Trail

The proposed Tufa Trail will be 9,942 feet long and be located entirely on NPS land with multiple access points to allow pedestrian traffic, but will exclude motorized vehicles. The trail will be constructed of lighter-colored decomposed granite mixed with a soil stabilizer. The edges of the trail will be marked with stacked rocks or extruded concrete. The trail will be graded and designed to facilitate water drainage and minimize water and debris from washing over the trail. The following additional trail components will also be included:

- Entry points on both sides of Crossing A
- Three bridges (designed for 100-year flood, for crossing over the existing wash areas)
- “K-shaped” concrete blocks or engineered concrete headwalls on the upstream and downstream sides of the trail to prevent erosion
- Breaks in the existing fence line to allow trail access

The trail would also meet Accessibility Standards for Outdoor Recreation and be designed to complement the existing landscape.

Future Trail

NPS will construct the proposed future trail as funding becomes available. This trail would be 7,588 feet long and 12 feet wide, with a total disturbance area of 2.09 acres (see Table 2). It is anticipated that this

trail would require installation of three fences to allow access through the existing fence line and two footbridges to either avoid sensitive resources or allow access over existing wash areas.

Trail Construction

Construction activities for the proposed trail include clearing vegetation, grading, laying granite, installing access gates, installing bridges, and installing trail edging and water diversion structures. An NPS expert would be onsite to confirm the trail is constructed per the NPS approved plans and specifications.

Construction for Tufa Trail would begin after obtaining all relevant permits for the trail and Crossings A, B, and C. It is anticipated that trail construction would take approximately 4 months. It is also anticipated that 10 to 15 construction workers would be required to complete the project. Workers would park on the private land within the Planned Community or in public areas outside the NPS-managed land.

The future trail would be constructed as resources become available and the methods would be similar as those discussed for the proposed Tufa Trail.

2.2.3 Mitigation, Best Management Practices, and Monitoring

A series of mitigation, best management practices, and monitoring activities would be implemented prior to the land exchange and during construction of the Crossings and the Trails. These measures and activities would be implemented under the Action Alternative and are summarized under resource topics.

General Best Management Practices

- The project area will be staked and flagged to minimize ground-disturbing activities.
- Travel and construction activities outside of the staked and flagged area will be prohibited.
- A Clark County dust control permit will be obtained and complied with as required for projects that disturb 0.25 acre or greater.

Soils

- Soil conservation measures listed in the NPS Natural Resource Management Reference Manual #77 will be followed.
- A sediment and erosion plan will be developed. Existing vegetation will be retained wherever possible to prevent erosion off-site.
- Sediment barriers and other suitable erosion control measures and run-off control devices will be installed prior to ground-disturbing activities at construction sites

Geology and Paleontological Resources

In addition to the measures above, a paleontological monitor will be on-site during ground disturbing activities. If paleontological resources are discovered, the monitor would coordinate with the

construction crew to stop activities, notify the NPS, and recover the resources before construction could continue.

Vegetation and Sensitive Plant Species

- Construction staging areas will be on private land only; no vehicles or equipment will be left on NPS land overnight. A resource monitor will survey the potential staging area (even if on private land) for weed-infested areas.
- No imported topsoil (desert soil) or planted material will be used during or after the projects to avoid introducing nonnative plant species or inappropriate genetic stock of native plant species.
- If hay/straw bales are used for erosion control measures they will be certified as weed free.
- The contractor will be required to pressure-wash all equipment before being allowed into the TUSK. Reclaimed areas will be monitored to ensure establishment and spread of only native species. In areas of temporary disturbance, revegetation may be required at the discretion of the NPS resource manager, and would consist of only native plants and/or seeds.
- Surface reclamation will be achieved through salvage and replacement of topsoil, salvage and replacement of vegetation, re-seeding with native species, or a combination of those methods. Only NPS-approved seed mixes will be used for reclaiming temporary disturbance areas.

Wildlife (Including Federally Protected Species)

- Section 7 consultation under the Endangered Species Act will be completed with the U.S. Fish and Wildlife Service (USFWS). All mitigation measures in the Biological Opinion will be implemented. Anticipated mitigation measures are presented in Appendix A.
- Habitat-altering projects or portions of projects should be scheduled outside of the bird-breeding season, which generally occurs between February 15th and August 31st. If a project must occur during the breeding season, then a qualified biologist will survey the area for nests immediately before starting construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests are found, an appropriately-sized buffer area must be established and maintained until the young birds fledge. The buffer area must connect to suitable, undisturbed habitat. As the above dates are a general guideline, if active nests are observed outside this range they are to be avoided as previously described.

Cultural Resources

- Construction activities will cease if previously unidentified cultural or archeological resources are discovered and NPS will be notified to determine a course of action.

Visitor Experience

- Construction areas will be appropriately marked, flagged and/or restricted to minimize potential visitor safety concerns.

Water Resources

- The applicant will comply with all stipulations included in the USACE 404 Permit (Letter of Permission SPK-2007-1746) and 401 Water Quality Certification (NV401-12-062).
- No Crossing structures will be placed below the ordinary high water mark.
- Erosion control measures will be implemented to intercept and capture sediment prior to entering Waters of the United States (WOUS).
- Erosion control measures will be in place along the perimeter of all work areas to prevent the displacement of fill materials.
- All BMPs will be in place prior to initiation of any construction activities and will remain until construction activities area completed.
- Erosion control methods will be kept in place until all construction activities are completed and the site soils are stabilized.

Hazardous Materials

- A Phase I Environmental Site Assessment would be completed within 90 days prior to the proposed land exchange closing.
- All fuel, transmission, or brake fluid leaks or other hazardous materials shall not be drained onto the ground or into drainage areas.
- All petroleum products and other potentially hazardous materials shall be removed to a disposal facility authorized to accept such materials.
- Waste leaks, spills, or releases shall be reported immediately to NPS. The project proponent shall be responsible for spill material removal and disposal to an approved offsite landfill.
- Construction equipment will be checked daily for leaks. Servicing of construction equipment will take place only at a designated area outside the NPS boundary.
- Workers will comply with applicable Occupational Safety and Health Administration requirements.
- Construction contractor will establish a procedure for spill prevention and response.
- All fuel or hazardous waste leaks, spills, or releases will be stopped or repaired immediately and cleaned up at the time of occurrence. Spill prevention kits will be available on-site.

2.3 Environmentally Preferable Alternative

The environmentally preferable alternative is the alternative developed and analyzed during the NEPA process “that causes the least damage to the biological and physical environment and best protects, preserves and enhances historical, cultural and natural resources” (46.30). The Action Alternative in this case is the environmentally preferred alternative. Under the Action Alternative, the NPS would eliminate the potential for CNLV to construct a major roadway that would bisect the TUSK while allowing the CNLV

to connect to roads and utilities to the planned community. KBS would construct a trail, which would allow public access to the TUSK, while concentrating visitor traffic and reducing the impacts of overland travel. If the No Action alternative was selected, up to 20.5 acres could be developed. The Action Alternative reduces that impact area to 10.47 acres thus lessening the effects to biological, cultural and natural resources.

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3.0 Relationship to Other Plans and Similar Actions

Current plans and policies that pertain to this proposal include the NPS Organic Act of 1916 (16 United States Code [USC] 1), the Tule Springs Fossil Beds National Monument Enabling Legislation (House of Representatives 3979-571), and the NPS Management Policies (2006). The project's consistency with these plans and policies is described as follows:

- The NPS Organic Act of 1916 identifies the purpose of the NPS to "conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (16 USC 1). The project is consistent with the NPS Organic Act because it would improve visitor access for enjoyment of park resources.
- The enabling legislation for TUSK identified the purpose of the park to "conserve, protect, interpret and enhance for the benefit of present and future generations the unique and nationally important paleontological, scientific, educational and recreational resources and values of the land." The project is consistent with TUSK-enabling legislation by supporting a high-quality visitor experience.
- The proposal is consistent with the goals and objectives of the NPS Management Policies (2006) in that it meets the park purposes and legislatively authorized uses. It also addresses the stated requirement that the park "must exercise good judgment...and that safeguarding of human life must not be compromised" (NPS 2006, 15). The proposed project was developed to preserve park continuity and provide safe visitor access to the park.

As the TUSK is a recently established park, a Foundation Document is currently being prepared. A Foundation Document is a document that describes the purpose and significance of the park and basic guidance for future management decisions. However, a Foundation Document is not a NEPA document and does not approve any actions. Additional management plans, with appropriate compliance, will be forthcoming, but are not under development at this time.

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4.0 Resource Topics

Resource topics for this project have been identified based on NPS and federal laws, regulations, and orders; NPS *NEPA Handbook* (2015a) and NPS general knowledge of the resources in the project area; and public comments and concerns received during the initial public scoping period. Section 4.1 discusses resource topics retained for further analysis and the rationale. Section 4.2 discusses resource topics excluded from this EA and the rationale.

4.1 Resource Topics Retained for Further Analysis

Table 3 identifies the resources that could be affected by the easement exchange and construction of the crossings and trails and are therefore retained for further evaluation in Section 5 of this EA.

Table 3. Resource Topics Retained for Further Analysis

Resource Topic	Reasons for Retaining Resource Topic
Geological and Paleontological Resources	Both geological and paleontological resources are found throughout the TUSK. Both the Action and No Action Alternative have the potential to affect these resources.
Soils, Vegetation, and Wildlife Habitat	Under the Action Alternative, the land exchange between NPS and CNLV would minimize ground-disturbing impacts from a 20.5-acre area to a 10.47-acre area. Up to 10.47 acres of soils, vegetation, and wildlife habitat would be disturbed or permanently removed during construction of the Crossings and trails. Additionally, construction vehicular traffic and operational traffic (vehicle and pedestrian) may increase the potential to introduce non-native plant species into the natural habitat.
Fish and Wildlife	The Action Alternative would include construction within the TUSK, where wildlife (including special status species) is present. Desert tortoise (<i>Gopherus agassizii</i>) is the only animal species in the area protected as threatened under the Endangered Species Act of 1973.
Cultural Resources	The area of potential effects (APE) for review under section 106 of the National Historic Preservation Act (NHPA) of 1966 includes the areas of direct and indirect impacts. Construction activities associated with the Crossings and the trails would disturb local soils, potentially affecting cultural resources.
Visitor Use and Experience, Safety, Visual Resources,	The Action Alternative would prevent a six-lane road from bisecting a portion of the TUSK and allow visitors better access via the proposed trails. Construction activities may affect visitor use and experiences.
Water Resources	Waters of the U.S. are present within the proposed project area and regulated by USACE. The Action Alternative construction may affect the landscape and water flow.
Hazardous Material	Solid wastes and hazardous materials may be found in the project area and exposed during construction.

4.2 Resource Topics Dismissed from Further Analysis

Table 4 identifies the resources that should not be affected by the easement exchange between NPS and CNLV and are therefore dismissed from further evaluation. Relevant laws, regulations, and policies are also noted.

Table 4. Resource Topics Dismissed from Further Analysis

Resource Topic	Reasons for Dismissing Resource Topic
Air Quality	Impacts to air quality would be primarily short-term effects associated with Action Alternative construction. These would be mitigated as the applicant would obtain a dust permit from the Clark County Department of Air Quality (as required for all soil-disturbing activities of 0.25 acre or greater in the aggregate) and would ensure all permit stipulations are in compliance for the duration of the project.
Soundscapes	Effects to soundscapes would increase during project construction but would be short-term and temporary. This park is adjacent to the urban center of the North Las Vegas. No new impacts are anticipated.
Socioeconomic/Environmental Justice, Executive Order 12898 on Environmental Justice	No of minority or low-income populations were identified near the proposed action area.
Lightscares/Night Sky	The project is located directly adjacent to urban development. No changes to the current natural lightscares are anticipated.
Floodplains	Project would not affect the elevation of the floodplain as the crossings would span the Las Vegas Wash.
Wilderness	No wilderness areas exist in or adjacent to the project limits as the project is adjacent to the CNLV; therefore, there is no potential for the No Action or Action alternatives to impact wilderness.
Cultural – Landscapes, Ethnographic Resources, Museum Collections, and Prehistoric/Historic Structures, Secretarial Order 3175 on Indian Trust Resources	No cultural landscapes, ethnographic resources, museum collections, prehistoric/historic structures, or Indian Trust resources are present within the proposed project area or the APE.

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5.0 Affected Environment and Environmental Consequences

This chapter describes the current condition of resources within the TUSK and considers how the current condition of the resource would be affected (negatively or positively) if either of the project alternatives were implemented. The study area for each resource topic is generally defined as the area in Figure 1 unless the action would have impacts on the park outside of the direct footprint, then a larger area was considered. Cumulative effects are summarized in Chapter 6.

5.1 Geological and Paleontological Resources

This section discusses the existing environment and environmental consequences of the proposed Action and No Action alternatives on geological and paleontological resources.

5.1.1 Existing Environment

The following sections discuss the existing geologic and paleontological setting in the proposed project area.

Geologic Setting

Southern Nevada is part of the Basin and Range province, an area stretching from southern Oregon and Idaho in the north to the Baja California Peninsula in the south and from the Sierra Nevada in the west to the Colorado Plateau in the east (Forrester 2009). This is a fundamentally complex area with east-west extension and highly faulted basins that formed during the Oligocene and Miocene epochs due to the subduction of the Farallon plate (Atwater 1970). The Las Vegas Basin also contains volcanic and sedimentary layers.

These thick volcanic layers are overlain by sedimentary rocks of the Muddy Creek Formation to the east (Bell and Smith 1980; Longwell et al. 1965). The Muddy Creek deposits consist of sandstones and siltstones with interbedded conglomerate and gypsum layers to the west (Forrester 2009). Overlying these deposits across the basin are alluvial fan and pediment deposits created at the base of mountains through erosion and weathering processes.

TUSK is principally located within the upper Las Vegas Wash, a 13-mile northwest–southeast oriented tributary of the Colorado River. This tributary is the principal drainage system draining the City of Las Vegas and beyond to Lake Mead. The basin occupied by the Las Vegas Wash was formed by extensional tectonics related with the Las Vegas Valley shear zone less than 15 million years ago (Fleck 1970; NPS 2015b). Landscape within the upper Las Vegas Wash system is highly eroded topography made up of mostly light-colored, fine-grained groundwater discharge (“spring”) deposits. The wash was imbedded by the early Holocene Epoch (approximately 8,000 years ago) and has likely remained active since its beginning (NPS 2015b; Springer et al. 2015a).

This area is bounded to the northeast by the Sheep and Las Vegas mountain ranges and to the southwest by the Spring Mountains. These mountain ranges are comprised of carbonate rocks (such as

dolomite and limestone), chert, and shale, all of which formed during the Paleozoic Era (approximately 345 million years ago) when a vast ocean covered much of North America (Haynes 1967). Mountain ranges uplifted during the Sevier Orogeny between approximately 140 million and 50 million years ago (Haynes 1967). Erosion of the mountains shaped an extensive border of alluvial fans descending from the surrounding ranges extending into the Tule Springs area.

The Tule Springs area contains three categories of geologic deposits: Pleistocene, groundwater discharge-related deposits; alluvial fan deposits; and modern upper Las Vegas Wash alluvial and fluvial deposits. These Pleistocene deposits contain fossils of extinct Ice Age animals and plants (NPS 2015; Springer et al. 2015a). They are also composed of clay, silt, and fine sand deposited in spring-fed ponds, meadows, marshes, and streams from linked groundwater discharge events during periods of ample rainfall during the Pleistocene Epoch (Ramelli et al. 2011; 2012; Springer et al. 2015a). Alluvial fan deposits consist mainly of Paleozoic-age carbonate sand and gravel. Recent upper Las Vegas Wash deposits are the youngest deposits found in the area. These deposits are fine- to coarse-grained materials reworked from the Pleistocene deposits and alluvial fans (Ramelli et al. 2011; 2012). Locations of paleontological resources within the park have been recorded based on previous systematic inventories of the area (BLM 2007, BLM 2011). Additionally, NPS has conducted surveys along the proposed Crossings and Trail (e-mail from NPS to Stephanie Locke dated April 12, 2017; unreferenced). No paleontological resources have been identified within the No Action or Action areas.

Studies have shown that during the Pleistocene Epoch, fluvial processes in the Tule Springs area were dissimilar than they are today and included streams emanating from springs (dePolo et al. 2013; Scott et al. 2015; Springer et al. 2015a). Streams deposited sediment throughout the area where fossils and braided fluvial tufa deposits are now found (Springer et al. 2015a). During the late Pleistocene Epoch (approximately 21,000 to 10,600 years before the present) for instance, braided streams rich in calcium carbonate salts originating from springs throughout the area created tufa deposits (dePolo et al., 2013). No Tufa deposits are located within the footprint of No Action or Action areas (e-mail from NPS to Stephanie Locke dated April 12, 2017; unreferenced).

5.1.2 Environmental Consequences

The following sections detail the environmental consequences to the resources described previously.

No Action

Under the No Action Alternative the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to construct a six-lane highway bisecting the TUSK, resulting in disturbance and/or removal of approximately 20.5 acres of land. No tufa or paleontological resources have been documented in the No Action area; however if the road were constructed, excavation work would have the potential to unearth paleontological resources.

Action Alternative

Under the Action Alternative, the land exchange between NPS and CNLV would minimize impacts from a 20.5-acre area to a 10.47-acre area. Neither tufa nor paleontological resources have been documented

within the project footprint. However, excavation and earthwork have the potential to expose paleontological resources. A paleontological monitor would be present during excavation activities to identify these sensitive resources and if found, notify the NPS and mitigate appropriately. Other best management practices such as flagging and staking the construction area and prohibiting cross-country traffic would limit the disturbance to the minimum amount of disturbance or removal. Trails would be constructed near a tufa formation, so the tufa could be disturbed or removed by visitors. Educational signage and information along the trail may reduce these impacts. In conclusion, with implementation of the recommended mitigation measures; impacts are expected to be non-significant.

5.2 Soils

This section discusses the existing environment and environmental consequences of the proposed Action and No Action alternatives on soil resources.

5.2.1 Existing Environment

Tule Springs is described as a deeply eroded area along the right bank of Tule Springs Wash and opposite to the toe of the Gass Peak bajada (Springer et al. 2015; Quade 1986). This normally dry area has gravel beds moderately covered with fluvial sand dunes and riffles (Springer et al 2015). Small channels meander across the area becoming broad braided channels in some areas. The Tule Springs area is covered by resistant calcareous bed (caliche cap) that is drained by numerous small shallow rills forming a pronounced braided pattern over the area that will be referred to as Gilcrease flat (Mawby 1967; Springer et al. 2015a). There is also exposed caliche in the Tule Springs area that is covered by rubble of partially dissolved, angular, caliche fragments undulate by discontinuous gravel-capped ridges almost 10 feet above the current surface. There are also limestone pebbles found on the ridges and siliceous rocks showing variable degrees of desert varnish (Bryan 1929; Quade and Pratt 1989). Within the Tule Springs area are several alluvial fans extending from canyons in the Las Vegas and Sheep ranges, which are dissected by numerous small channels that are tributary to Tule Springs Wash. There are gravels of interfluvial surfaces displaying weathering features similar to those mentioned for gravel-capped ridges, while modern channel-bed gravels show freshly abraded surfaces (Springer et al. 2015a).

The overall drainage of the Tule Springs area is approximately 55 square miles and comprises adjacent bajadas and the southwest slopes of the Las Vegas Range. According to Springer et al. (2015a) and others, approximately 2.5 miles northwest of Tule Springs Ranch, the wash that has recently abandoned the channel leading past Tule Springs is splayed into a myriad of braided distributary rills covering Gilcrease flat.

Tule Springs contains stratigraphy revealing five paleosols, four of which are truncated by erosion immediately following the period of weathering represented by the soil (Alley 1997; Springer et al. 2015a). Younger soils are distinctly and successively weaker—they have weaker structure, weaker horizons, and thinner profiles even though they are generally less eroded, with earlier soils appearing to have somewhat darker and redder (oxidation) loams than do later ones (Springer et al. 2015a).

5.2.2 Environmental Consequences

The following sections detail the environmental consequences to the soils as a result of the No Action and Action alternatives.

No Action

Under the No Action Alternative the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to construct a six-lane highway bisecting the TUSK, resulting in disturbance and/or removal of approximately 20.5 acres of soils, possibly increasing erosion within the TUSK.

Action Alternative

Under the Action Alternative, the land exchange between NPS and CNLV would minimize impacts from a 20.5-acre area to a 10.47-acre area. Soils would be removed from where the Crossings will be constructed, and the soils may be removed or compacted where the trails are to be constructed or possibly for installation of the water diversion structures. BMPs such as flagging and staking the construction area and prohibiting cross-country traffic would limit the disturbance to the minimum amount of disturbance or removal. BMPs and erosion control measures would be implemented during construction. Trails would be constructed near a tufa formation, so the tufa could be disturbed or removed by visitors. Educational signage and information along the trail may reduce these impacts. In conclusion, with implementation of the recommended mitigation measures, impacts to the project footprint would be minimal.

5.3 Vegetation

This section discusses the existing environment and environmental consequences of the proposed Action and No Action alternatives on vegetation.

5.3.1 Existing Environment

The ecological systems in the Southern Nevada District are predominantly from the North American Warm Desert, Intermountain Basins Ecological Divisions, with elements from the Rocky Mountains and Colorado Plateau. Vegetative community descriptions within the project area are based on mapping of land cover and ecological systems conducted by the U.S. Geological Survey during the Southwest Regional Gap Analysis Project (SWReGAP) (Prior-Magee 2007). Ecological systems within SWReGAP are defined as a group of plant community types (associations) that tend to co-occur within landscapes with similar ecological processes, substrates, and/or environmental gradients.

The Action Alternative is primarily within the Sonora-Mojave Creosotebush-White Bursage Desert Scrub SWReGAP land cover classification. In this vegetation community, creosote bush (*Larrea tridentata*) and bursage (*Ambrosia dumosa*) are generally the most conspicuous plant species present. This vegetation community generally occurs below 4,000 feet and is the primary habitat for the desert tortoise.

To verify vegetation communities and presence of special status species in the area (see Section 5.4), a qualified botanist conducted pedestrian surveys of the ground disturbing project elements (Crossings

and Trails) on March 27, 2017. Several species of shrub were observed in the proposed Action Alternative area. Creosote bush was confirmed as the dominant plant species, with bursage, shadscale saltbush (*Atriplex confertifolia*), Mojave aster (*Xylorhiza tortifolia*), jointfir (*Ephedra* sp.), white ratany (*Krameria grayi*), turpentinebroom (*Thamnosma montana*), and pepperweed (*Lepidium fremontii*) occurring in lesser amounts. Mesquite (*Prosopis glandulosa*) and catclaw acacia (*Senegalia greggii*) grow in the washes. There are few cacti present; Mojave yucca (*Yucca schidigera*) was the only succulent noted. Several two-track roads and trails bisect the Action Alternative area.

5.3.2 Environmental Consequences

This subsection describes the impacts to vegetation from the No Action and Action alternatives, respectively.

No Action

Under the No Action Alternative, the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to construct a six-lane roadway bisecting the TUSK, resulting in removal of approximately 20.5 acres of vegetation.

Action Alternative

The Action Alternative would directly affect and/or remove 10.47 acres of Sonora-Mojave Creosotebush-White Bursage Desert Scrub vegetation community. Indirect impacts could consist of non-native weeds propagation and increased erosion. Impacts during construction would be mitigated through the use of BMPs including flagging the construction area prior to construction to limit disturbance; cleaning all ground-disturbing equipment prior to entering the project site; salvaging and replacing any removed topsoil over disturbed areas upon completion of construction; and consulting with NPS concerning reclamation of temporary disturbance areas. In conclusion, with the implementation of the recommended mitigation measures, impacts would be minimal.

5.4 Protected and Sensitive Plant Species

This section discusses the existing environment and environmental consequences of the proposed Action and No Action alternatives on protected and sensitive plant species.

5.4.1 Existing Environment

The project area had been previously surveyed for special status plant species and the results were documented in *A Conservation Agreement for the Management of Special Resources on Bureau of Land Management Parcels Nominated for Disposal by the City of North Las Vegas* (BLM 2005). Two species of concern were identified during those surveys: the Vegas bearpoppy (*Arctomecon californica*) and Las Vegas buckwheat (*Eriogonum corymbosum* var. *nileslii*).

Las Vegas bearpoppy is a spring flowering, short-lived perennial herb. It is primarily located on open, dry, powdery, hummocked soil with high gypsum content with sparse cover of other gypsum tolerant

species. Las Vegas bearpoppy has been designated by the USFWS as a species of concern and receives full protection by the State of Nevada (Nevada Natural Heritage Program [NNHP] 2001).

Las Vegas buckwheat is long-lived shrub that flowers from summer to fall. It is primarily located on and near gypsum soils surrounded by other gypsum-tolerant species. Las Vegas buckwheat has been recommended for full protection by the State of Nevada (NNHP 2004).

A qualified botanist conducted pedestrian field surveys in areas of ground disturbing project elements (along the Crossings and trails) on March 27, 2017. Las Vegas bearpoppy surveys were designed to located plants that are known to flower from February through July (NNHP 2001). Surveys for Las Vegas buckwheat were designed to located non-flowering plants and assess habitat as the species flowers in the summer and fall (NNHP 2004). Table 5 summarizes the state rank of each species, NPS or federal classification (if any), and the presence in the project area in both 2005 and 2017.

The proposed Action Alternative area has the gypsum-rich habitat needed to support both the Las Vegas bearpoppy and the Las Vegas buckwheat. Both species were encountered during field surveys and documented in 2005; however, only two individual Las Vegas buckwheat plants were observed near the project area in 2017.

Table 5. Special Status Plant Species, State Rank, Federal Rank, and Observations in the Project Area

Species	State Rank	Federal Classification	Presence in Study Area
Las Vegas bearpoppy (<i>Arctomecon californica</i>)	S3 (At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors)	USFWS Species of Concern	2005 – Species was observed abundantly in/near project area. 2017 – Species was not observed in the footprint of proposed Crossings or trails; however, suitable habitat (gypsum rich soils) was observed.
Las Vegas buckwheat (<i>Eriogonum corymbosum</i> var. <i>nileslii</i>)	S2 (Imperiled – At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors)	None	2005 – Species was observed near the project area. 2017 – Two individual plants were observed near the footprint of the proposed trails. Suitable habitat was observed throughout the study area.

5.4.2 Environmental Consequences

This subsection describes the impacts to vegetation from the No Action and Action alternatives.

No Action Alternative

Under the No Action Alternative the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to construct a six-lane roadway bisecting the TUSK, resulting in removal of approximately 20.5 acres of Las Vegas bearpoppy and Las Vegas buckwheat habitat and possible removal of individual plants. Indirect impacts to the habitat may include the introduction and propagation of non-native weeds and increased erosion.

Action Alternative

Impacts of the Action Alternative would be similar to those discussed under the No Action Alternative, but the disturbance area would be reduced to 10.47 acres of potential Las Vegas bearpoppy and buckwheat habitat. It is possible that individual plants may be removed, but that is unlikely as no individual were observed within the proposed construction areas. Indirect impacts to the habitat may include the introduction and propagation of non-native weeds and increased erosion. Direct and indirect impacts would be reduced through BMPs including flagging the construction area prior to construction in order to limit disturbance, cleaning all ground-disturbing equipment prior to entering the project site to reduce/eliminate the introduction of non-native weed species, salvaging and replacing any removed topsoil over temporarily disturbed areas upon completion of construction, and consulting with the NPS to reclaim temporary construction areas. In conclusion, with the implementation of BMPs, impacts would be minimal.

5.5 Wildlife

This section discusses the existing environment and environmental consequences of the proposed Action and No Action alternatives on wildlife.

5.5.1 Existing Environment

This subsection describes the existing environment for general wildlife; state protected reptiles, and migratory birds.

General Wildlife

The Action Alternative area supports and is adjacent to lands that support wildlife characteristic of the Mojave Desert. Biological diversity varies according to topography, plant community, and proximity to water, soil type, and season. Common wildlife may include species such as the Great Basin whiptail (*Cnemidophorus tigris*), desert horned lizard (*Phrynosoma platyrhinos*), black-tailed jack rabbit (*Lepus californicus*), kit fox (*Vulpes macrotis*), coyote (*Canis latrans*), cactus mice (*Peromyscus spp.*), and kangaroo rats (*Dipodomys spp.*).

State Protected Reptiles

The Gila monster is classified as a state sensitive reptile (Nevada Administrative Code [NAC] 503.080) and is protected under Nevada State law (NAC 503.090 and NAC 503.093). The geographic range and habitat of the Gila monster overlaps with that of the desert tortoise. This venomous lizard is found

below 5,000 feet in elevation on rocky slopes and landscapes of upland desert scrub interspersed with desert washes (Nevada Department of Wildlife 2012).

Migratory Birds

The Migratory Bird Treaty Act (MBTA) (16 USC 703 et seq.) protects migratory birds and their nests. A list of MBTA-protected birds can be found in 50 CFR 10.13. The list of birds protected under this regulation is extensive, and the project site has potential to support many of these species. Typically, these species are most sensitive to disturbance during the breeding season, which generally occurs from February 15th through August 31st. It is assumed that habitat near the action area contains potential nesting and foraging habitat for a wide range of migratory birds, including sensitive species such as the Western burrowing owl (*Athene cunicularia hypugaea*).

5.5.2 Environmental Consequences

This subsection discloses the potential impacts to wildlife species, including sensitive species and migratory birds.

No Action Alternative

Under the No Action Alternative the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to and may construct a six-lane roadway bisecting the TUSK, resulting in removal of approximately 20.5 acres of wildlife habitat. The impacts of building the roadway would be killing or maiming of ground dwelling animals, displacement of individuals, the permanent loss of 20.5 acres of habitat, and increased noise during construction/operation. Additionally, bird-vehicle collisions may increase during operation of the new roadway within the TUSK.

If constructed, this roadway will bisect the park, reducing connectivity between open habitat within the TUSK. During construction, ground-disturbing activities could directly result in mortality to various wildlife species. Noise and traffic associated with roadway construction and operation could cause animals to avoid the area, thus altering their normal behavior patterns. Additionally, wildlife-vehicle collisions may increase on the new roadway within the TUSK.

Action Alternative

Under the Action Alternative, the area of impact would be reduced to 10.47 acres; approximately 3.4 acres would be for Crossings A and C, which include a 130-foot and 180-foot wide roadway, respectively. Impacts would be similar as those described under the No Action Alternative, but Crossings A and C would be less likely to impede wildlife movement throughout the TUSK. These two roadways would span the ordinary high water mark within the wash allowing for wildlife crossings underneath, although wildlife still might face injury or mortality on the roadways. Crossing B (the underground utility) and the trails would not impede wildlife movement because no physical barriers would be constructed. Animals may become entrapped during installation of the underground utilities by falling into open trenches, temporary exclusion fencing may reduce these effects.

Impacts to wildlife within the TUSK would be avoided and/or minimized through BMPs and mitigation measures of the Biological Opinion that will be issued to reduce impacts to desert tortoise (see section 5.6). For example, during construction a desert tortoise education program would be presented to workers onsite. This program would include information on general wildlife, including migratory birds and state sensitive reptiles, and what workers should do if they encounter these resources. A biological monitor would be present onsite (as required in the Biological Opinion) and would appropriately monitor for migratory birds, Gila monsters, and other wildlife potentially in harm's way. Additionally, if ground-disturbing activities were to occur during migratory bird breeding season (February 15 – August 31), a qualified biologist would conduct nest surveys and establish an appropriate-sized buffer until the nestlings fledged. With implementation of these mitigation measures and general BMPs, impacts would be minimal.

5.6 Species Protected under the Endangered Species Act

This section discusses the existing environment and environmental consequences of the proposed Action and No Action alternatives on threatened and endangered species.

5.6.1 Existing Environment

The only animal species protected under the Endangered Species Act that is known to occur near the Action Alternative area is the threatened Mojave Desert tortoise (*Gopherus agassizii*). The Action Alternative is not within desert tortoise critical habitat.

The Mojave Desert tortoise occurs primarily on flats and bajadas with soils ranging from sand to sandy-gravel. They are also found on rocky terrain and slopes. Tortoises occur in saltbush scrub, creosote scrub, and blackbrush scrub habitat types. Within these vegetation types, desert tortoises can potentially survive and reproduce provided their basic habitat requirements are met. These requirements include a sufficient amount and quality of forage species; shelter sites for protection from predators and environmental extremes; suitable substrates for burrowing, nesting, and overwintering; various plants for shelter; and adequate area for movement, dispersal, and gene flow.

Significant geographic variation occurs in the way desert tortoise use available resources. Within the Northeastern Mojave Recovery Unit, they are often active in late summer and early autumn in addition to spring. The region receives both winter and summer rains, which support two distinct seasonal, annual floras desert tortoise feed upon. Desert tortoise also feed on cacti, perennial grasses, and herbaceous perennials. Desert tortoises in the Northeastern Mojave Recovery Unit typically burrow in caliche caves, bajadas, and washes (USFWS 2011).

In October 2017, a NewFields' previously authorized USFWS tortoise biologist conducted pre-project tortoise surveys according to the USFWS 2010 Pre-project survey protocol for Crossings A, B, and C and the proposed future trail. In December another trail, the Tufa Trail, was added to the Action Alternative. NPS obtained permission to conduct a habitat assessment for this portion of the project as the survey was conducted outside of the USFWS pre-project survey window. NPS staff conducted this assessment on the Tufa Trail on January 3, 2017.

Survey results from the NewFields and NPS biologists include the observation of one live tortoise observed in a burrow. Because only one tortoise was observed and it was in a burrow, relative tortoise abundance could not be estimated using the USFWS model.

Six tortoise burrows were observed within the Action Alternative area. One burrow was in good condition and definitely used by desert tortoises recently (categorized as Condition Class 1). Two Condition Class 2 burrows were found, meaning they were definitely tortoise burrows, but did not show signs of recent use. Two burrows located were possibly used by a desert tortoise, but not used that season (Condition Class 3). One burrow was observed and considered potentially used by tortoises (Condition Class 4). Additionally, three pieces of tortoise scat were observed.

5.6.2 Environmental Consequences

This subsection discusses the impacts to special status species for the No Action Alternative and the Action Alternative.

No Action Alternative

Under the No Action Alternative the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to and may construct a six-lane roadway bisecting the TUSK, resulting in removal of approximately 20.5 acres of tortoise habitat. Additionally, tortoise could be injured or killed during construction and/or operation of the roadway. Before construction, Section 7 Consultation with the USFWS would be required to disclose all the effects to desert tortoise, and a Biological Opinion would have to be issued for the project. Mitigation measures would be implemented as required in the Biological Opinion.

Action Alternative

Similar to the No Action Alternative, tortoises may be injured or killed during construction activities for the Crossings; however, the disturbance area for the Crossings is much smaller than the No Action Alternative, totaling 5.63 acres. Only a minimal amount of habitat would be affected for trail construction (4.83 acres) and the trails would remain open so tortoise could move freely in the area. Section 7 consultation would be completed for the project and proposed/anticipated stipulations are included in Appendix A (See Section 7.1 for details on Section 7 Consultation with the USFWS). An authorized tortoise biologist and/or biological monitors would be present at active construction sites to locate tortoises and, if necessary, direct the contractor to cease construction activities until the tortoise moves out of harm's way or is relocated by an authorized individual.

Capturing, handling, and relocating desert tortoises from construction areas may result in harassment and possibly injury or death (Blythe et al. 2003). Additionally, if capture and relocation methods are performed improperly, the tortoise could void its bladder, which would lower its chances of survival (Avrill-Murray 2002). Another risk is that if multiple tortoises are improperly handled by the same biologist, pathogens for upper respiratory tract disease could be spread amongst the tortoises.

The disturbance area would be readily surveyed for the presence of tortoises and burrows. If a tortoise in a burrow is encountered, an authorized biologist would relocate the tortoise to a nearby suitable burrow or, if one is not available, an artificial burrow would be constructed.

During Crossing A, B, and C construction, operation, and maintenance, increased human activity and construction vehicle traffic may also result in tortoise/vehicle collisions that result in tortoise injury or death. Tortoises may take shelter under parked vehicles and be killed, injured, or harassed. Minimization measures, such as the Worker Environmental Action Plan and speed limits on roads, would reduce or eliminate these effects. During operation and maintenance of the Tufa Trail, human/tortoise interaction may occur. Humans may harass tortoises, resulting in injury and/or death.

For this project, indirect effects include increased predation, which could be caused by littering. Predators such as ravens, coyotes, or other raptors may be attracted to the construction site due to an increase in food opportunities, including construction site litter and voluntary feeding from construction staff, or increased water sources due to dust control protocols. An increased predator presence could lead to a predation increase on smaller, more vulnerable tortoises. Mitigation measures such as a litter control program will reduce these effects.

Ground disturbing activities during construction may result in an increase of noxious and invasive plant species in the area. Construction machinery may facilitate the spread of existing noxious or invasive species throughout the site, or may facilitate the introduction of new noxious weeds or invasive species. Noxious and invasive plants may displace native species that provide forage for tortoises resulting in reduced habitat quality and increased fire frequency. BMPs would reduce or eliminate these effects. This would include at a minimum washing of construction equipment before arriving on site and surveying for/avoiding weed infested areas during construction.

In conclusion, with the implementation of mitigation measures and BMPs, impacts would be minimal and temporary.

5.7 Cultural Resources

This section discusses the existing environment and environmental consequences for cultural resources in the area.

5.7.1 Existing Environment

NewFields conducted a Class I cultural resources evaluation of the APE for the proposed project. The purpose of this investigation was to determine if any previously recorded archaeological sites, prehistoric or historic features, or other cultural resources had been previously identified within the project area. The results of this investigation revealed that 21 archaeological inventory projects had been conducted within a 1-mile radius of the APE, and 64 archaeological sites had been previously recorded within a 1-mile radius of the APE. The entirety of the proposed project area had been subjected to a Class III archaeology inventory project—the most recent of these investigations was conducted in 2003.

Due to the density of archaeological sites within the project APE, the presence of one archaeological site (26CK4247) within the project APE that was previously determined to be eligible for listing on the National Register of Historic Places (NRHP), and the age of the most recent inventory of the cultural resources within the APE, the NPS requested that a new Class III archaeological inventory be conducted within the project area. The goals of this investigation were to reassess the existing cultural resources within the project area, to identify any newly exposed cultural resources within the project area, and to (re)evaluate those cultural resources for their eligibility for nomination to the NRHP.

On March 25-26, 2017, NewFields contracted with Mesa Field Services to perform a Class III archaeological inventory of the project area, which lies within the Eglington Preserve area of the TUSK. During the survey, Mesa Field Services reevaluated one previously recorded, NRHP-eligible archaeological site (26CK4247) and identified a new small lithic scatter.

Site 26CK4247 was originally recorded by Dames and Moore in 1989 during a Class III survey for the City of North Las Vegas Land Transfer project (Report #14737). At that time, the site was described as an approximately 60-meter-by-45-meter surface lithic scatter lacking diagnostic artifacts and/or features. It was recommended not eligible for the NRHP. In 2003, HRA, Inc. revisited the site as a part of the Las Vegas Valley Disposal Boundary EIS project (Report #5924) and extended the site's boundaries to approximately 250 meters by 70 meters. HRA identified two features, including a circular fire ring feature and a 3-meter alignment of cobbles perpendicular to a gravel ridge. Artifacts HRA identified on the ground surface included at least 23 formal tools, including several obsidian Pinto points, numerous late stage bifaces (made from chalcedony, basalt, chert, and obsidian), a quartzite anvil, several scrapers, a basalt mano (broken into two pieces), and a sandstone metate fragment. HRA recommended the site eligible for listing on the NRHP under Criterion D due to the site's numerous formal and diagnostic tools, the diversity in raw materials, and the two features that could yield important information regarding Pinto period history in the Las Vegas Valley.

On March 26, 2017, Mesa Field Services reexamined 26CK4247. The two previously identified features were assessed and determined not to be thermal features, as no charcoal and/or charcoal staining was present and both lacked subsurface deposits. Only one diagnostic tool was identified, a Pinto point, made from basalt. No obsidian was identified. A fence with an adjacent bladed roadway now crosscuts the site, apparently resulting in the displacement and/or destruction of many of site's artifacts. Based on the lack of subsurface deposits, the lack of datable materials (such as charcoal or obsidian), and the lack of diagnostic tools present within the scatter, site 26CK4247 is no longer considered eligible for listing on the NRHP. Likewise, the small lithic scatter (Nevada trinomial pending) identified by Mesa Field Services is not eligible for listing on the NRHP. These findings will be detailed in a Class III Cultural Report that is being prepared for the NPS.

5.7.2 Environmental Consequences

The following section describes environmental consequences to cultural resources for the No Action and Action alternatives.

No Action

Under the No Action Alternative the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to and may construct a six-lane roadway bisecting the TUSK. No archaeological sites, prehistoric or historic feature, or other cultural resources eligible for inclusion on the NRHP were identified during a Class I review of the No Action area; therefore, no project-induced impacts to cultural resources would occur.

Action Alternative

No archaeological sites, prehistoric or historic features, or other cultural resources eligible for inclusion on the NRHP were identified during this survey and one previously eligible archaeological site was determined to be no longer eligible. SHPO consultation is ongoing and a concurrence letter is expected. In conclusion, no significant effects to eligible cultural resources are anticipated.

5.8 Visitor Use and Experience

This section discusses the existing environment and environmental consequences of the proposed Action and No Action alternatives on recreation and land use resources.

5.8.1 Existing Environment

The TUSK was established as the 405th unit of the NPS December 19, 2014. It was established to “conserve, protect, interpret and enhance for the benefit of present and future generations the unique and nationally important paleontological, scientific, educational and recreational resources and values of the land.”

Open space and low-density housing surround the TUSK. Additionally, a housing development will be constructed within a private land area surrounded by the TUSK. Currently, authorized recreation opportunities within the TUSK include hiking (although no formal trails exist) and horseback riding. Because Tule Springs is a new park, no visitor center, facilities or parking areas exist. Access to the park is limited to parking on nearby public roads in the cities of Las Vegas and CNLV and entering the monument on foot. NPS regulations prohibit off-roading in the park. Bicycle routes, bicycle lanes, and shared-use paths are available from Las Vegas and the CNLV to the southern portion of the park.

5.8.2 Environmental Consequences

This subsection discusses the project-related impacts to visitor use and experience for the No Action Alternative and the Action Alternative.

No Action Alternative

Under the No Action Alternative the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to construct a six-lane roadway bisecting a large portion of the TUSK, resulting in removing approximately 20.5 acres of open space. If constructed, traffic on the six-lane roadway, may reduce the visitor experience by making access between portions of the park difficult. Traffic and

noise from the roadway may decrease the quality of the outdoor experience. KBS would not finance and construct the Tufa Trail.

Action Alternative

If the Action Alternative is authorized, the Tufa Trail would be constructed by KBS, providing an official trail for access into to the park (currently no official trails exist). The Tufa Trail would allow visitors to more easily observe the park's resources, and specifically, highlight a Tufa formation that would be visible near the trail. During construction of the Crossings and the trails, construction noise, construction vehicles, or reduced access to construction areas (for safety reasons) may reduce the visitor's experiences in the park, but these impacts would be short-term and temporary. Visitors may be exposed to increased safety risks during construction, but these would be mitigated through BMPs, including flagging and staking the construction areas and temporarily limiting visitor access in construction areas.

In conclusion, with the implementation of recommended BMPs, impacts would be temporary and non-significant.

5.9 Water Resources

The following sections discuss the existing environment and environmental consequences to water resources from the No Action and Action alternatives.

5.9.1 Existing Environment

Hydrological Setting

Southern Nevada is in the northern Mojave Desert province, an arid environment that receives less than 10 inches of precipitation a year. Las Vegas receives on average 4.62 inches per year of rainfall; most of this total is a result of localized storms from December through March (Longwell et al. 1965).

Precipitation totals may be greater than 20 inches per year at higher elevations in the mountain ranges surrounding the Las Vegas Basin (Bevans et al. 1998). During the summer months, intense but short-lived thunderstorms can deliver a lot of precipitation within a short time, increasing the potential for flood events (Longwell et al. 1965). Water at the surface either evaporates rapidly due to the warm, dry atmosphere or infiltrates into the subsurface joining shallow groundwater found within the valley.

Water within the Las Vegas Basin, which stretches over 1,600 square miles, flows west and discharges into Lake Mead via Las Vegas Wash (Bevans et al. 1998). The main components of flow include shallow groundwater, urban runoff, and storm water. Precipitation that falls in the higher elevations discharges into shallow aquifers within the valley (Bevans et al. 1998). Urban runoff, a potential source of contamination, is generally attributed to water overuse in urban settings such as watering lawns, draining pools, or washing cars (Sims and Keller 2014). This additional water can infiltrate into local soils and then moving down gradient. Storms can deluge areas, saturating the soil and creating runoff, which can be confined to storm culverts or travel across the surface as sheet flow (Sims and Keller 2014).

Groundwater

The Las Vegas Valley is the Colorado River designated groundwater basin. The depth to groundwater in The Las Vegas Valley is highly variable. Review of the Nevada Division of Water Resources (NDWR) well log database indicated there was one well in the vicinity of the parcels encompassing the project area. Information provided by surrounding NDWR data indicated static water level may occur approximately 50 to 75 feet below grade in the vicinity of the project area (Ninyo & Moore 2017).

Surface Water

The Las Vegas Valley is an open basin; surface water runoff from the surrounding mountains is directed into Lake Mead and the Colorado River System via the Las Vegas and the Flamingo Washes. Surface runoff is very infrequent, occurring as flows in the ephemeral channels following rainfall events. In the site vicinity, surface water stormwater flows generally from the Sheep Mountain range toward Lake Mead via the Las Vegas Wash under flooding events.

The flow of water in these small drainage systems occurs only during infrequent storm events and has a nexus to the Colorado River system. "Water of the United States (WOUS)," defined in 33 CFR 328.3(a) to include navigable waters as well as intermittent streams, are present in the Las Vegas Valley as the water flows into Lake Mead and eventually the Colorado River. The USACE has previously determined waters in this area would affect surface waters and are under jurisdiction of Section 404 of the Clean Water Act. KBS SOR Park Highlands has obtained a 404 permit, which allows for discharge of dredge or fill material into approximately 4.45 acres of WOUS.

The Action area does not contain hydric soils, and habitat in the area does not meet the definition of a wetland. It does not contain: (1) wetlands, wetland fringes or adjacent wetlands, or (2) spawning, feeding, or nesting areas for fish or other important aquatic species.

5.9.2 Environmental Consequences

The following sections disclose the direct and indirect effects to groundwater and surface water from the No Action and Action Alternative.

No Action Alternative

Under the No Action Alternative the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to construct a six-lane roadway bisecting a large portion of the TUSK. If roadway construction did occur, a jurisdictional waters and wetland investigation and report would be prepared and submitted to the USACE. It is likely that the roadway would affect WOUS as it would be constructed in the Upper Las Vegas wash. The USACE would determine if a 404 permit under the Clean Water Act is required.

Action Alternative

Activities associated with the construction and operation of the Crossings and Trails would not have impacts deeper than 10-20 feet, and therefore would not intercept or impact the much deeper

groundwater. Local groundwater would not be used for either the construction or operation of the project.

During construction and operation of the Crossings and trails, increased surface disturbance could result in an increased level of erosion. The Proposed Action would disturb waters of the U.S. and a Section 404 permit (Letter of Permission SPK-2007-1746) has been obtained from the USACE. The applicant would adhere to the special conditions detailed in the permit.

In conclusion, with mitigation measures and BMPs in place, impacts from increased erosion and sedimentation due to ground-disturbance activity would be reduced to a level of non-significance.

5.10 Hazardous Materials

This section discusses the existing environment and environmental consequences of the proposed Action and No Action alternatives on waste management and hazardous materials.

5.10.1 Existing Environment

A Phase I Environmental Site Assessment (ESA) was conducted for the land disturbing elements of the proposed action in general accordance with ASTM E-1527-05 (Ninyo & Moore 2017). That study included a review of the site history, historical aerial photographs, and environmental databases. According to the available information, the subject site has remained undeveloped native land from at least 1950 until present. Review of environmental databases indicated that three facilities near the site have handled hazardous materials or petroleum products and/or have been listed as having reported releases of hazardous materials or petroleum products. Based on distance from the subject site, regulatory status of these facilities, and/or assumed groundwater flow direction close to the subject site, there is a low likelihood that any of the listed facilities represent a potential environmental concern to the site at this time.

5.10.2 Environmental Consequences

This subsection discusses the impacts of the No Action Alternative and Action Alternative on waste management and hazardous materials.

No Action Alternative

Under the No Action Alternative the land exchange between NPS and CNLV would not occur. CNLV would retain the rights to and may construct a six-lane roadway bisecting the TUSK, resulting in disturbance and or removal of approximately 20.5 acres of NPS land. At this time a Phase I ESA has not been performed in the No Action area and would need to be completed prior to surface disturbing activities.

Action Alternative

Construction of the Crossings and trails may generate solid waste in the form of soil and brush from clearing/grading activities. Up to 10.47 acres of land may be affected by the Action Alternative. A Phase I

ESA would be completed for the relinquishment portion of the Grand Teton ROW prior to completion of the land exchange, and an updated Phase I ESA would be completed for the Crossings, both of which are required in the land exchange agreement.

The Action Alternative construction and operation is not expected to require the transportation, use, or generation of hazardous materials or hazardous wastes that could create a significant hazard to the public or environment. The types of materials that would potentially be present during construction would be minimal volumes of vehicle fuels, lubricating oils, paints, adhesives, and sealants. Under ordinary use, none of these materials would generate hazardous wastes. As the construction contractors would be required to comply with environmental and work place safety laws and procedures, no significant risks to public health and safety would be expected from the Action Alternative. BMPs such as designated fueling spots, vehicle inspections, and spill prevention kits would reduce or eliminate the potential for contamination on NPS land. NPS would be notified immediate if a spill were to occur so that appropriate actions and documentation could occur.

In conclusion, with the implementation of mitigation measures and BMPs, impacts would potentially be minimal and temporary.

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6.0 Cumulative Impacts

In 40 CFR 1508.7 and 1508.25(a)(2), the Council on Environmental Quality regulations (1978) defines cumulative impacts as “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.”

6.1 Past and Present Actions

The project area is near the CNLV and surrounded by existing and proposed residential development. A large portion of the TUSK was previously under the jurisdiction of the BLM and was within the Las Vegas Valley Disposal Boundary, subsequently designated the Conservation Transfer Area. The BLM had issued some rights-of-way (ROW) grants in the area. On December 19, 2014 under Public Law 113-291, approximately 22,650 acres was transferred to the TUSK under the jurisdiction of the NPS. NPS recognizes and manages these previously-issued BLM rights-of-way. Previous ROW permits were issued for a wide variety of purposes, including power, water, sewer, and others. ROWs generally were issued in perpetuity (when the applicant was a public entity) or for a term of 30 years. Most of these ROW are near the CNLV close to urbanized areas. Additionally, several two-track roads and off-road vehicle trails were created within the TUSK.

6.2 Reasonably Foreseeable Projects

Reasonably foreseeable future actions are considered those actions that are known or could reasonably be anticipated to occur within the analysis area for each resource within a time frame appropriate to the expected impacts from the Proposed Action. The TUSK generally opposes the creation of new ROW corridors, but may in the future develop a land plan to allow visitor facilities or to work with local entities such as the City of North Las Vegas, Clark County, or others for integrated urban/park development. However, none of these actions are outlined in existing decisions or proposals and would be considered speculative; therefore, cannot be considered reasonably foreseeable (46.30). The NPS is proposing to fence a portion of the TUSK to eliminate or greatly reduce unauthorized off-road vehicle access and target shooting, but this area is in the northwest portion on the TUSK far away from the proposed project area. Considering these factors, no reasonable foreseeable projects have been identified at this time.

6.3 Cumulative Effects Analysis

Taking into account the aforementioned past and present projects, this cumulative impacts analysis addresses the cumulative effects on paleontological and geological resources; soils; vegetation and wildlife (including migratory birds and special status species); recreation and visitor experience; water resources; and, wastes and hazardous materials that the Proposed Action would have in conjunction with other past, present, and reasonably foreseeable actions in the project area.

Soils

Past and present actions that have impacted soils have been limited to off-road vehicle use and previous installation of utilities in the project area as the land is largely undeveloped. The Action Alternative would remove some natural soils in the area and potentially increase erosion and runoff, contributing to incremental impacts on soils.

Geological and Paleontological Resources

Past and present actions that have impacted geological and paleontological resources within the action area have been vandalism (including unauthorized resource collection) and off-road vehicle travel. It is not anticipated that the proposed project would contribute to impacts to paleontological or geologic resources because these resources were not identified in the project disturbance area; however, they could be encountered during earthmoving activities or vandalized (or removed) by park visitors. Monitoring, informational signage, and BMPs would reduce or eliminate impacts to these resources. It is possible, although unlikely, that the Action Alternative would incrementally contribute to cumulative effects on paleontological and geological resources.

Cultural Resources

No sites eligible for listing on the NRHP would be affected by the project; therefore, the proposed project would not contribute to cumulative effects on cultural resources.

Vegetation (Including Sensitive Species)

When combined with past and present actions in the TUSK, the proposed action would result in incremental addition to vegetation (and sensitive plant habitat) removal and/or potential for noxious weed spread.

Wildlife (Including Federally Protected Species)

Past and present actions have affected wildlife (and federally protected species) within the TUSK by reducing, bisecting, degraded or eliminating wildlife habitat in the area. The proposed project may contribute incrementally to effects on wildlife in the area. As the TUSK is a newly established national monument, staff will develop plans to protect natural resources and activities that will improve or restore wildlife habitat.

Recreation and Visitor Experience

Past and present actions such as off-road recreation and utility installation may have degraded some areas reducing the pristine condition for visitors. However, the Action Alternative would enhance the visitor experience to the park by reducing the potential impact areas (from 20.5 acres to 10.47 acres) and providing trails to access the park and its resources. Therefore, the Action Alternative would not incrementally contribute to cumulative effects.

Waste Management and Hazardous Materials

No hazardous materials were identified on site, but the project may generate small amounts solid waste and/or use small amounts of hazardous materials. With BMPs in place the project should not incrementally contribute to hazardous or solid materials waste within the TUSK.

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7.0 Agency Coordination

The following sections summarize NPS and/or applicant coordination with various entities required under law.

7.1 Section 7 of the Endangered Species Act

Section 7 of the Endangered Species Act requires federal agencies to consult with the U.S. Fish and Wildlife Service regarding the potential for proposed actions to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. At this time staff at the Lake Mead National Recreation Area, which has a Programmatic Biological Opinion (PBO), manages the TUSK. The USFWS requested that the Lake Mead PBO be amended to include activities within the TUSK. NPS has submitted the request to amend the PBO. Once the PBO has been amended, the proposed action will be covered under a project-level consultation under the PBO. The applicant will adhere to all applicable mitigation measures from the PBO are required in the issuance of the project-specific append.

7.2 Section 106 of the National Historical Preservation Act

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the impacts of their undertakings on historic properties. At the onset of this environmental assessment process, in accordance with section 800.3(c) of the Advisory Council on Historic Preservation's regulations (36 CFR 800), the park will submit a Class III cultural report and letter to consult with the Nevada State Historic Preservation Officer. SHPO concurrence will be required before the NEPA process is completed.

7.3 Tribal Consultation

Executive Order 13175 requires that the NPS initiate government-to-government consultation with affected tribes. NPS will complete tribal consultation prior to completion of the NEPA process.

7.4 Section 404 of The Clean Water Act and River and Harbors Act

The identification of wetlands and other WOUS within the study area is necessary to ensure their protection in accordance with federal laws (section 404 of the Clean Water Act [CWA] and the Rivers and Harbors Act of 1899). No wetlands were observed in the project area, but the project would span waters of the U.S. A jurisdictional delineation was submitted to the USACE that identifies and quantifies waters potentially under the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act (CWA). The USACE issued a Letter of Permission (SPK-2007-1746) to KBS SOR Park Highlands that authorizes dredge or fill material into approximately 4.45 acres of WOUS. Additionally, as a requirement of the 404 permit, KBS SOR Park Highlands has obtained a Section 401 Water Quality Certification.

8.0 List of Preparers

This document was prepared by NewFields with input from staff at the TUSK, the Lake Mead National Recreation Area (currently administering some duties for the TUSK), and the NPS Pacific West Regional Office (PWRO) in San Francisco. The NPS directed the development of the EA and independently reviewed all sections of the environmental assessment prior to publication and is responsible for the content.

Name	Responsibility
NPS Reviewers	
Michael Boyles	Lands, Planning and Compliance Specialist, Lake Mead NRA
Curt Burback	Park Ranger, Tule Springs Fossil Beds National Monument
Anna Coldham	Reality Specialist, Land Resources Program, PWRO
Curt Deuser	Acting Superintendent, Tule Springs Fossil Beds National Monument
Roxanne Dey	Acting Superintendent, Tule Springs Fossil Beds National Monument
Steve Daron	Cultural Resource Manager, Lake Mead NRA
Greg Gress	Reality Supervisor, Land Resources Program, PWRO
Alan Schmierer	Regional Environmental Coordinator, PWRO
Henry Weckesser	Biological Science Technician, Lake Mead NRA
NewFields Team	
Jennifer Anderson, MA, RPA	Archaeologist
Andrew Butsavich	Environmental Scientist
Nathan Davenport	Environmental Scientist
Sean Milne	Environmental Scientist
Elizabeth Leon	Environmental Scientist
Stephanie Locke	Partner, Project Manager
Suzanne Rhodes	Botanist
Doug Sims	Partner, Managing Principal
Sub consultants	
Grace Gillespie	Ninyo & Moore, Senior Scientist
James Jimenez	Ninyo & Moore, Scientist
Sean Simpson	Mesa Field Services, Project Manager

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**Appendix A. Mitigation Measures From the Programmatic Biological
Opinion**

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The NPS proposes to minimize the effects of the Proposed Action on the desert tortoise by implementing the measures in the Lake Mead PBO (NPS 2009,) as modified below:

1.a. A desert tortoise education program will be presented to all onsite personnel during construction. This program will contain information concerning the biology and distribution of the desert tortoise, its legal status and potential occurrence near the proposed project area, the definition of "take" and associated penalties, measures designed to minimize the effects of construction activities, the means by which employees can facilitate this process, and reporting requirements to be implemented in the event that desert tortoises are encountered.

1.b. An authorized desert tortoise biologist (AB) or environmental monitor will be on-site during construction activities to ensure that construction activities will not harm desert tortoises. Potential Authorized Biologists shall complete the Qualifications Form (USFWS 2009) and submit it to the USFWS for review and approval as appropriate. Allow 30 days for USFWS review and response. The Authorized Biologist will be responsible for approving monitors or other personnel that may assist the biologist. Authorized Biologists shall ensure that all monitors associated with the project are skilled and experienced to a level that ensures they are capable of successfully implementing the protective measures (Terms and Conditions) of this biological opinion.

1.c. Tortoise-proof fencing may be installed around the perimeter of the work area. Fence specification will be consistent with those approved by the USFWS in the Desert Tortoise Field Manual (USFWS 2009). Once exclusion fencing is installed, an AB will survey the area to ensure that no tortoises or active burrows are present within the fenced area.

1.d. Project activities that may endanger a tortoise will cease if a tortoise is found on the project site until the tortoise moves out of harm's way or is relocated by an AB.

1.e. All areas to be disturbed will have boundaries flagged before beginning the activity, and all disturbance and project activities will be confined to the flagged areas. Disturbance outside flagged areas will be prohibited.

1.f. All project vehicles shall be driven at speeds within posted speed limits on existing roads and will not exceed 20 mph within project boundaries. Any tortoise observed in harm's way on a paved road will be moved off the road in the direction it was moving in accordance with USFWS-approved tortoise handling procedures (USFWS 2009). All tortoise observations on roads shall be reported to NPS biologists to be included in the annual report (Term and Condition 4).

1.g. Prior to initiation of surface-disturbing activities within potentially occupied desert tortoise habitat, an Authorized Biologist who may be assisted by monitors, shall conduct a clearance survey to locate and remove tortoises using techniques that provide full coverage of all project areas. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, will be examined to determine occupancy by desert tortoises.

1.h. All burrows found within areas proposed for disturbance and cannot be avoided, whether occupied or vacant, shall be excavated by an Authorized Biologist and collapsed or blocked to prevent occupation by desert tortoises. All burrows will be excavated with hand tools to allow removal of desert tortoises and/or desert tortoise eggs. All desert tortoise handling and burrow excavations, including nests, will be conducted in accordance with the USFWS-approved protocol (USFWS 2009).

1.i All located desert tortoise and desert tortoise eggs will be relocated offsite 300 to 1,000 feet into adjacent undisturbed habitat within the TUSK. The onsite biologist will record each observed or handled desert tortoise.

1.j Open trenches, stockpiled pipes, and excavations that pose a threat or potential to entrap or injure tortoises shall be capped or covered; temporarily fenced; and/or escape ramps installed. Any excavated holes left open overnight will be covered and/or tortoise-proof fencing will be installed to prevent desert tortoise access to the open holes.

1.k. Project personnel shall exercise caution when commuting to the project area and obey speed limits to minimize any chance for the inadvertent injury or mortality of species encountered on roads leading to and from the project site. All desert tortoise observations, including mortalities, shall be reported directly to an AB, NPS, and the USFWS.

1.l. Any vehicle or equipment on the ROW (NPS easements) will be checked underneath for tortoises before moving. If a tortoise is observed, the AB biologist will be notified Trash and food items will be disposed of properly in predator-proof containers with resealing lids.

1.m. To prevent mortality, injury, and harassment of desert tortoises and damage to their burrows and cover sites, no pets will be permitted in any project construction area.

1.n. Only water or an alternative substance approved by the NPS will be used as a dust suppressant. Water application and discharge shall avoid pooling of water, which may attract desert tortoises.

1.o. If blasting is required, a 200-foot radius area around the blasting site will be surveyed by an AB for desert tortoises prior to blasting, using 100-percent-coverage survey techniques. All tortoises located aboveground or within this 200-foot radius of the blasting site shall be moved 500 feet from the blasting site. Additionally, tortoises in burrows within 75 feet of the blasting site will be placed into an artificial or unoccupied burrow 500 feet from the blasting site. This will prevent tortoises that leave their burrow upon translocation from returning to the blasting site. Tortoises in burrows at a distance of 75 to 200 feet from the blasting site will be left in their burrows. Burrow locations will be flagged and recorded using a GPS unit and burrows would be stuffed with newspapers. Immediately after blasting, newspaper and flagging will be removed. Blasting would only occur in the brief time period after an area has been cleared by an Authorized Biologist, but before any relocated tortoises could return to the site.

2. A litter-control program shall be implemented that includes the use of covered, raven-proof trash receptacles, disposal of edible trash in trash receptacles following the end of each work day, and disposal of trash in a designated sanitary landfill at the end of each work week.

3.a. The boundaries of disturbance area proposed within desert tortoise habitat shall be flagged as described in Term and Condition 1.e.

3.b. To the greatest extent possible, all disturbances shall be located on previously disturbed areas. If previously-disturbed areas are not available, these activities will be restricted to the right-of-way and will be cleared of tortoises by the onsite biologist prior to use.

3.c. Prior to surface-disturbing activities associated with the proposed project, the proponent will pay remuneration fees to be deposited into the Desert Tortoise Public Lands Conservation Fund (account number 730-9999-2315) (section 7 account) for compensation of disturbance of desert tortoise habitat.

The fee will be assessed at the rate of \$867 per acre of disturbance of non-critical habitat. Disturbance of desert tortoise critical habitat shall be assessed in accordance with Hastey et al. (1991), as modified by the Nevada Fish and Wildlife Office. These fees will be indexed for inflation based on the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U). Information on the CPI-U can be found on the internet at: <http://stats.bls.gov/news.release/cpi.nr0.htm>. The next adjustment will occur on March 1, 2017.

The payments shall be accompanied by the attached Section 7 Fee Payment Form (Appendix B), and completed by the payee. The project proponent or applicant may receive credit for payment of such fees and deduct such costs from desert tortoise impact fees charged by local government entities. Payment shall be by certified check or money order payable to Clark County and delivered to:

Clark County Desert Conservation Program

Department of Air Quality and Environmental Management

Clark County Government Center

500 S. Grand Central Parkway, first floor (front counter)

Las Vegas, NV 89106

(702) 455-3536

3.d. No imported topsoil (desert soil) or hay bales will be used during the projects, in an effort to avoid introduction of nonnative plant species or inappropriate genetic stock of native plant species. The contractor would be required to pressure-wash all equipment before being

allowed into the TUSK. Reclaimed areas would be monitored to ensure establishment and spread of only native species. In areas of temporary disturbance revegetation may be required at the discretion of NPS resource manager, and would consist of only native plants and/or seeds.

3.e All fuel, transmission or brake fluid leaks, or other hazardous materials shall not be drained onto the ground or into drainage areas. All petroleum products and other potentially hazardous materials shall be removed to a disposal facility authorized to accept such materials. Waste leaks, spills or releases shall be reported immediately to NPS. The NPS or the project proponent shall be responsible for spill material removal and disposal to an approved off-site landfill. Servicing of construction equipment will take place only at a designated area. All fuel or hazardous waste leaks, spills, or releases will be stopped or repaired immediately and cleaned up at the time of occurrence. Service and maintenance vehicles will carry a bucket and pads to absorb leaks or spills.

4.a. An Authorized Biologist shall record each observation of handled desert tortoises including those moved off Lake Mead NRA roads. Data will be collected, including: location, date, time of observation, whether the tortoise was handled, the general health of the tortoise, whether it voided its bladder, the location the tortoise moved from and the location it moved to, and any unique physical characteristics. The Authorized Biologist shall also include the names of all monitors approved for the project, and the activities and level of involvement during the project.