

RECLAMATION

Managing Water in the West

Hoover Dam Fiber Optic Cable Replacement

Draft Environmental Assessment
LC-16-26

Lower Colorado Region
Boulder City, Nevada



U.S. Department of the Interior
Bureau of Reclamation
Lower Colorado Region
Boulder City, Nevada

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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Cover Photo: Stakes marking existing fiber optic cable route east of Boulder City (Bureau of Reclamation photo)

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Acronyms and Abbreviations

Acronym or abbreviation	Term
APE	Area of Potential Effect
ADMP	Asbestos Dust Mitigation Plan
BO	Biological Opinion
Boulder Tap Substation Cable	Boulder City Communications Tap Substation Fiber optic cable
CEQ Regulations	Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA
City	City of Boulder City
CO	carbon monoxide
COR	Contracting Officers Representative
dB	Decibel
dBA	Decibel on A-weighted scale
Dust Control Permit	Clark County Department of Air Quality Dust Control Permit for Construction Activities
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FHWA	Federal Highway Administration
HEPA	High Efficiency Particulate Arrestence
Historic Properties	Cultural resources eligible or listed on the National Register of Historic Places
ITA	Indian Trust Assets
NAAQS	National Ambient Air Quality Standards
LA	Los Angeles
LCRO	Lower Colorado Regional Office
Monitors	Biological monitors
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act of 1969, as amended
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NOA	naturally occurring asbestos
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	ozone
Pb	lead
PM _{2.5}	particulates less than 2.5 microns
PM ₁₀	particulates less than 10 microns
PPE	Personal protective equipment

Acronym or abbreviation**Term**

Project	Fiber optic cable replacement/Proposed Action
Reclamation	Bureau of Reclamation
ROD	Record of Decision
ROU	Right-of-Use
USFWS	U. S. Fish and Wildlife Service
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
SRI	Statistical Research Inc.
TCP	Traditional Cultural Property
Trail	Canal/bike trail adjacent to U.S. Highway 93
U.S.	United States of America
UNLV	University of Nevada Las Vegas

1.0 Introduction and Purpose and Need

This Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA. The purpose of this EA is to evaluate the potential impacts of the Proposed Action on the physical and human environment and determine if there would be significant impacts requiring the preparation of an Environmental Impact Statement (EIS).

1.1 Federal Action

The Bureau of Reclamation (Reclamation) is proposing to replace an existing 12-strand fiber optic cable (Cable) between Reclamation's Boulder City, Nevada, facilities and the Boulder City Communications Tap Substation (Boulder Tap Substation), located at a Nevada Energy substation, with a new 72-strand single-mode armored Cable (Project). The Project would be located on land owned by the City of Boulder City (City). Reclamation will obtain an additional Right of Use (ROU) from the City to install the new Cable. The Project route is located in Township 23 South, Range 64 East, in Sections 2, 3, 4, and 5 (Figure 2).

1.2 Purpose and Need

The purpose of the proposed action is to update communication infrastructure and reliability among the Lower Colorado Regional Office (LCRO), Hoover Dam, and other Reclamation managed dams on the Colorado River.

Cable is a high-speed data transmission medium. The action is needed because cable, which allows for the rapid transmission of digital data over long distances, is integral to maintaining efficient and reliable communications among Reclamation facilities. The volume of digital data that is transmitted between Reclamation facilities has greatly increased since the original cable was installed in 1993. The existing 12-strand (six-pair) Cable between these facilities, specifically between the LCRO and the Boulder Tap Substation, has begun to experience age-based degradation and does not have the size necessary to support current communication requirements.

1.3 Related Laws, Policies and Planning Documents

This EA complies with all applicable environmental, natural resource, and cultural resource statutes, regulations, and guidelines. These additional statutes, regulations, and guidelines may require permits, approvals, consultations with outside agencies, or implementation of mitigation measures.

The following federal, state, and local statutes and regulations are relevant to the proposed project.

- National Environmental Policy Act of 1969
- Endangered Species Act of 1973 (P.L. 93-205)
- National Historic Preservation Act of 1966, as amended
- Archaeological Resources Protection Act of 1979
- Native American Graves Protection and Repatriation Act of 1990
- Safe Drinking Water Act (42 USC 300f)
- Migratory Bird Treaty Act (16 U.S.C. 703-711)
- Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d)
- Clean Air Act of 1970 and amendments of 1977 and 1990
- Clean Water Act of 1970 and National Pollution Discharge Elimination System, as amended
- Noise Control Act of 1972
- Occupational Health and Safety Act of 1970 as amended
- Executive Order (EO) 11514: Protection and Enhancement of Environmental Quality
- EO 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 13007 - Indian Sacred Sites (1996)
- EO 13186 - Protection of Migratory Birds (2001)
- Secretarial Order 3175: Departmental Responsibilities for Indian Trust Resources
- Chapter 445B of Nevada Administrative Code - State of Nevada's air pollution regulations
- Clark County Air Quality Regulations

2.0 Description of Alternatives

2.1 No Action Alternative

Under the No Action alternative, the Project would not be implemented. Reclamation would continue to have inadequate capability to transmit digital data between LCRO and the Boulder Tap Substation, and the reliability of communications would not be updated.

2.2 Proposed Action (Project) Alternative

Overview

The project involves installing a total of approximately 3 miles of Cable in discontinuous segments and the installation of seven buried Cable vault boxes that will serve as connection points for the buried Cable (Figure 2). All but a 50 foot-long segment of the Cable will be installed in an approximately 18 inch-wide trench excavated along primitive roads in the open desert east of the City, and in existing utility corridors along paved streets in the City. The 50-foot segment would be strung over Avenue I within the city limits between two existing utility poles. The majority of the Project route will parallel the location of the existing Cable. To avoid any interruption in communication, the existing Cable will be abandoned in place.

The existing Cable is located in a ROU area reserved by Reclamation from the City. Reclamation would coordinate with the City to reserve an additional ROU to accommodate the new Cable.

Construction Methods

Where trenching is needed, equipment used for the installation of the Cable would be determined by the depth of soil to bedrock contact. In areas where soils are thin, a trencher capable of cutting through bedrock would be used. A pneumatic rock hammer mounted to a skid steer may also be used to increase the effectiveness of the trencher. In areas with sufficient soil depth, the Cable will be installed with a machine that will plow a trench in the soil and simultaneously install the Cable. Along city streets with numerous buried utilities, the trench may be excavated with hand tools. The trenches would be approximately 18 inches wide and 40 inches deep. Once the trenches are dug, the Cable will be installed and the trench closed.

Where Cable is to be installed in existing conduit and no excavation is needed, the Cable will either be hand fed or pushed through the existing conduit with equipment. A horizontal directional drill may be used to drill under streets or trails. Other equipment to be used would include a water truck and material delivery truck. Equipment and Cable would be staged as needed in the staging areas shown on Figure 2.

The majority of the Cable installation would follow existing two track roads, paved streets, or disturbed roadsides. Some low vegetation may need to be removed prior to trench excavation. Temporary closure of primitive roads that intersect the Project route may be needed while Cable is being installed.

The Cable vaults would be a standard size (Figure 1) having a dimension of 3 feet long by 2 feet wide by 3 feet deep. They would be buried so that the top will be flush with the surrounding ground surface.



Figure 1- Typical buried Cable vault box



Figure 2- Project Overview

Construction, including mobilization of equipment and testing of the installed Cable, is expected to take 3 months.

Maintenance

Operations, maintenance, replacement, and removal activities would occur within the original and new ROU area as needed for the term of the ROU. This would include but not be limited to re-excavation of the Cable trench or vault boxes to repair or replace the Cable or vault boxes, re-stringing of the overhead segment of Cable, replacement of Cable route markers, and removal of Cable if it is no longer needed.

Project Segments

The Project is described in detail below by Segments 1-4. Representative photos of the segments are shown in Appendix A.

Segment 1- Boulder Tap Substation to Interstate 11

Segment 1 is approximately 1000 feet long. It starts at Boulder Tap Substation, which is east of the City, and angles north/northwest to the Interstate 11/Boulder City By-Pass (I-11) construction corridor. A buried vault would be installed at the Boulder Tap Substation and at the terminus of this segment, which will be on the shoulder of I-11 after its construction is completed.

Segment 2 – Boulder Tap Substation to Avenue I

This segment is approximately 13,200 feet (2.5 miles) long. The Cable route begins at Boulder Tap Substation in the same vault as installed for Segment 1 and follows primitive roads across undeveloped desert land between the Boulder Tap Sub-station and Avenue I in the City.

Segment 3 – Avenue I to Hillside Drive

Segment 3 is approximately 500 feet long. The Cable would be strung overhead on existing utility poles across Avenue I and fed in to a new vault that would be installed near the base of an existing utility pole on a narrow peninsula between Avenue I and a residential street called Hillside Drive. The Cable would be buried in a trench in the peninsula, then cross the intersection of Avenue I, Hillside Drive, and Nevada Way. The surface of the street would be cut for the trench and new vault would be installed on the west side of the street. The area has limited working space and there are many existing buried utilities along this segment. Trench and vault excavation may require the use of hand tools along this segment. The rest of the cable in Segment 3 would be pulled through existing conduit.

Segment 4 – Colorado Street to U.S. Highway 95

Segment 4 is approximately 1,570 feet long. The Cable would be installed in a trench across Colorado Street to a newly installed vault on the north side of the street. The pavement on the street would be cut for the trench. The Cable would be installed in a 540 foot-long trench excavated in disturbed ground along Colorado Street. The Cable would then be fed in to a new vault on the northeast corner of the intersection of U.S. Highway 93 and Colorado Street. From this location it would parallel U.S Highway 93 and the concrete flood canal/bike trail (Trail) that parallels the northbound lanes of the Highway. The final 65 feet of the Cable would be

directional bored under the Trail and connected to an existing Cable in a newly installed vault between the Trail and U.S Highway 93.

2.2.1 Design Features

Reclamation has incorporated the following design features into the Proposed Action to reduce or eliminate impacts to resources:

General

- City protocols for notifying residents of construction would be followed as appropriate.

Recreation

- If temporary road or Trail closures are needed signs notifying off-road vehicle riders and other members of the public of the closures would be posted as needed.

Noise

- Work would be performed during daylight hours and would be in accordance with the City noise ordinance that restricts any tool, appliance, or equipment producing noise of sufficient volume to disturb the sleep or repose of occupants of the neighboring property between the hours of 7:00 P.M and 7:00 A.M.

Soils

- Upon completion of construction, appropriate stabilization and rehabilitation measures would be completed in conformance with the requirements of Reclamation, the State of Nevada Division of Environmental Protection and Clark County Department of Air Quality.

Surface and groundwater quality and quantity

- A Nevada Construction Storm-water Pollution Prevention Permit and Plan would be prepared prior to commencement of work.

Hazardous Materials

- If hazardous material is found or any construction or project-associated spills of five gallons or more occur all operations would cease and local emergency response organizations shall be notified by calling 911. After calling 911, the Contractor shall notify the Contracting Officer's Representative who would then notify the Regional Hazardous Materials Coordinator within one hour after notifying 911. Construction and/or project associated spills less than five gallons must be cleaned up immediately and the Regional Hazardous Materials Coordinator notified within 24 hours of the spill.

- If hazardous materials are used on this project, a waste management plan shall be developed. The plan would detail how waste from this project would be managed and disposed of. This plan shall be approved by the Regional Hazardous Materials Coordinator before work begins.

Air Quality

- The contractor would obtain and follow all requirements of a Clark County Department of Air Quality Dust Control Permit for Construction Activities (Dust Control Permit).
- Measures to prevent potential impacts from naturally occurring asbestos (NOA), which may be present in the Project area, would be included in the construction contract for the Cable. These measures would mirror the measures employed for construction of I-11. A summary of these measures is given below.
 - The Contractor would be responsible for identifying and following regulations that may apply to generation, management, characterization and reuse or disposal of potentially NOA-containing, as well as for non-NOA-containing geologic materials.
 - The Contractor would be responsible for the health and safety, and protection from exposure risks of Contractor's employees and Sub-contractors, following Federal, State and local statutes, laws, and regulations. The Contractor would be obligated to conduct any required personal air monitoring of its workers in accordance with applicable laws and regulations. The Contractor would be responsible for providing all levels of personal protective equipment (PPE), and the use of decontamination and hygiene facilities to all employees, project visitors, and individuals assigned to the project. This responsibility would extend to all individuals requiring PPE and decontamination, regardless of the employer. The following worker protection measures would be required.
 - Asbestos Awareness Training must be completed for all job site personnel before the project starts. Whenever new personnel are brought on-site to work, they must show proof of asbestos awareness training (including NOA and site-specific training) before being allowed to work on the job site.
 - The contractor would use appropriate respiratory protection and protective clothing.
 - The contractor would conduct personal monitoring for employees working on the Project.
 - Decontamination and hygiene facilities would be provided for employees.
 - Disposable protective clothing and High Efficiency Particulate Arrestance (HEPA) vacuuming methods to avoid potential asbestos contamination of worker's clothing or

transfer of asbestos-containing dust off-site into their personal vehicles or homes would be used as appropriate.

- The Contractor would provide wash stations and HEPA vacuuming stations to all persons and vehicles in areas of drilling/excavation for removal of dust potentially containing asbestos at the exit points of each regulated area.
- An approved Asbestos Dust Mitigation Plan (ADMP) is required prior to the commencement of work.
- Dust Mitigation would be performed in accordance with the approved ADMP.
- An approved Asbestos Compliance Plan would be required prior to the commencement of work.

Biological Resources

- The following conservation measures from the Biological Opinion (BO) would be implemented to minimize potential adverse effects to desert tortoise from the Proposed Action. The BO is included as Appendix to C to this EA.
 - Provide a U.S. Fish and Wildlife Service (USFWS)-approved Authorized Biologist(s) to be onsite during construction activity. Any Biological Monitors (Monitors) onsite to locate and assist with the relocating of tortoises would work under the direct supervision of the Authorized Biologist.
 - The Authorized Biologist or Monitor would be present during all site activities that have potential to disturb soil, vegetation, and wildlife. An Authorized Biologist or Monitor would walk immediately ahead of equipment during vegetation removal and trenching activities.
 - The Authorized Biologist would develop and present a tortoise education program to all individuals performing work along the proposed alignment. The program would consist of either a presentation or a fact sheet as determined by project level consultation between Reclamation and USFWS. Information included would consist of, at a minimum: 1) Objectives of environmental compliance; 2) Life history of the desert tortoise; 3) Legal status of the desert tortoise; 4) Description of and definitions included in the Endangered Species Act; 5) Actions if a tortoise is encountered; 6) Mitigation measures being taken to protect the tortoise; 7) Penalties for non-compliance with stated protection measures; 8) Habitat protections; and 9) Other environmental compliance stipulations.
 - Trenches, pits, or holes (if needed) would be covered or backfilled at the end of each day. If covering or backfilling is not feasible, escape ramps would be provided and tortoise biologists/Monitors would inspect the areas each morning.

- Prior to trenching activities a Weed Management Plan would be developed to include measures designed to reduce the propagation and spread of undesirable plants.
- Tortoises would only be handled by USFWS Authorized Biologists, or by a Monitor under the direct supervision of an Authorized Biologist.
- Should a desert tortoise or nest be discovered, construction activities would cease until the tortoise moves from the area on its own, is moved from harm's way, or the nest (if applicable) is relocated.
- Tortoises moved offsite and released into undisturbed habitat on public land would be placed in the shade of a shrub, in a natural unoccupied burrow similar to the one in which it was found, or in an artificially constructed burrow in accordance with tortoise handling protocols and current USFWS guidelines.
- During any handling, desert tortoises would be treated in a manner to ensure they do not overheat or exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises would be kept shaded at all times until it is safe to release them.
- Any burrows that can be avoided would be flagged and all project vehicles, equipment, and activities would avoid the area. If a burrow is not avoidable, it would be cleared and collapsed in accordance with USFWS protocols.
- The area underneath all vehicles, equipment, and material would be checked by operators for tortoises before they are moved.
- USFWS would be notified of any desert tortoise death or injury due to the project implementation.
- All appropriate state and federal permits, including Nevada Department of Wildlife (NDOW) and USFWS permits for handling desert tortoises or their parts would be acquired by the Authorized Biologist(s) if tortoise handling is anticipated to occur.
- Overnight parking and storage of equipment and materials, including stockpiling, would be within previously disturbed areas or within project areas cleared by a tortoise biologist.
- Water applied for dust abatement (if applicable) would use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites.
- Litter control (including any food related waste) would be implemented and enforced by Reclamation.
- Workers would be notified that feeding wildlife would not be allowed.

- Speed limits would be posted at 15 miles per hour or below for construction traffic on all roads within the Project area.
- Vehicle traffic would be restricted to existing roads.
- Reclamation would compensate for 12.5 acres of desert tortoise habitat by paying the current fee rate per acre (\$867) as determined by the Service.
- Thirty days prior to project implementation, the Weed Management Plan and the desert tortoise education program shall be submitted to the Biological Services Coordinator at 702-293-8130 for approval. In addition, all Authorized Biologist letters shall be submitted to Reclamation's Biological Services Coordinator prior to Authorized Biologists working on the project. If biological issues or questions arise prior to or during project implementation Reclamation's Biological Services Coordinator shall be contacted.
- Construction, operations, and maintenance activities that may affect vegetation shall occur outside of the migratory bird breeding season (February 15 to September 1) to the maximum extent practicable. If construction and maintenance activities cannot occur outside February 15 to September 1, a biologist, approved by Reclamation, shall conduct nesting bird clearance surveys. If any nesting bird activity is detected, all activities will cease until the biologist determines that no active nests, eggs, nestlings, or recently fledged birds will be affected.
- To prevent the spread of noxious and invasive weeds, equipment used for this project must be thoroughly cleaned prior to entering the Project site. The cleaning process will ensure that all dirt and debris that may harbor noxious or invasive weeds seeds are removed and disposed of at an appropriate facility. Reclamation's *Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species: 2012 Edition* should be referenced for inspection and cleaning activities. The manual can be found at:
<https://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2012.pdf>
- In order to insure compliance with Nevada Administrative Code 503.080, 503.090 and 503.093, the listed actions are required following an encounter with a banded Gila monster during construction activities.
 - Any encounters during the project construction must be reported immediately to NDOW at telephone number 702-486-5127.
 - Live Gila monsters found in harm's way on the construction site would be captured and detained in a cool, shaded environment (<85°F) by a biologist until a NDOW biologist can arrive for documentation purposes. A clean 5-gallon plastic bucket with a secure ventilated lid, an 18" x 18" x 4" plastic sweater box with a secure vented lid, or a tape sealed cardboard box of similar dimension may be used for safe containment. Written information identifying mapped capture location, date, time, circumstances, and habitat description would also be provided to NDOW.

- Injuries to Gila monsters may occur during excavation, road grading, or other construction activities. In the event a Gila monster is injured, it should be transferred to a veterinarian proficient in reptile medicine for evaluation of appropriate treatment. Rehabilitation or euthanasia expenses would not be covered by NDOW. However, NDOW would be immediately notified during normal business hours. If an animal is killed or found dead, the carcass would immediately be frozen and transferred to NDOW by the contractor with a complete written description of the situation, circumstances, habitat, and mapped location.
- Should NDOW assistance be delayed, biological personnel on site may be requested to remove and release the Gila monster out of harm's way. Should NDOW not be immediately available to respond for photo-documentation, digital photographs of the Gila monster in situ at the location of live encounter or dead salvage would be taken by the contractor. The photographs would be provided to NDOW and would include: encounter location (landscape overview with Gila monster in clear view); a clear overhead shot of the entire body with a ruler for scale (Gila monster should fill the camera's field of view); and an overhead close-up photo of head only.
- Any cactus or yucca plants found within areas to be disturbed would be treated in accordance with Nevada Revised Statutes 527.010 and NDOW and/or Reclamation requirements.

Cultural Resources

- In the event of an unanticipated discovery, all operations in the area of the discovery would cease and a Reclamation archaeologist contacted at 702-293-8130. "Discovery" means the encounter of any previously unidentified or incorrectly identified cultural resource including, but not limited to, archaeological deposits, human remains, or places reported to be associated with Native American religious beliefs and practices.

2.2.2 Alternatives Considered but Not Evaluated Further

During the design of the Project several alternative routes and interconnections with existing Cable were considered. These options are not being evaluated further because the Proposed Action provides the most direct route, minimizes disturbance by connecting to existing Cable and following existing roads and streets, and is the best option for increasing reliability of the Cable system.

Part of the original Cable route that crosses the old City landfill was not used to avoid disturbing the reclaimed area.

Overhead Cable for the entire route was considered but not evaluated further because of the visual impacts and high cost of installation and maintenance.

3.0 Affected Environment and Environmental Consequences

The analysis of the Proposed Action includes direct, indirect, and cumulative effects. Direct effects as those which are caused by the action and occur at the same time and place and indirect effects as those which are caused by the action and occur later in time or farther removed in distance (40 CFR 1508.8). Cumulative impacts are defined as impacts to the environment that 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 the action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR 1508.7).

Section 3.1 identifies past, present, and reasonably foreseeable activities that are either located in the vicinity of the Project area or have been identified as having the potential for cumulative impacts when considered in addition to the impacts of the Project. These actions are addressed as appropriate in Section 3.3.

3.1 Past, Present, and Reasonably Foreseeable Future Projects

I-11 Construction

In 2005 the Federal Highway Administration (FHWA) and the Nevada Department of Transportation (NDOT) completed the “*Final EIS and Record of Decision (ROD) for the Boulder City/U.S. 93 Corridor Study*” for improvements to U.S. Highway 93 between the end of Interstate 515 on U.S. Highway 93/95 in Henderson to a point on U.S. Highway 93 approximately 4.7 miles east of downtown Boulder City. These improvements are now part of I-11, which will include a segment of new four-lane highway located south and east of the City. Reclamation was a cooperating agency on this EIS. Construction on this part of I-11 began in 2015 and is anticipated to be complete by June 2018.

Boulder City 69 kV Transmission Line

The City has identified a need for a new single circuit 69 kV transmission line to provide an interconnection between two of their substations, Substation 3 and Substation 6. Planning is still underway for this interconnection but it could be an above-ground transmission line supported by metal monopoles or underground line (Boulder City, 2017). A portion of the transmission line route would be in the vicinity of the west portion of Segment 2 of the Project. A construction date has not been determined.

3.2 Resources Considered but not Discussed Further

The following resources were considered and are not addressed further in this EA because there would be minimal or no impacts from the Proposed Action:

- **Recreation-** Primitive roads in the Project area are used for off-road vehicle riding. The Cable installation route parallels the recreational Trail adjacent to U.S. Highway 93. Any construction road or Trail closures would be temporary and would not have a long-term impact on off-road vehicle or other recreational uses. Signs or other notification would be provided to inform recreationalists of the construction.
- **Land Use-** The Project would be entirely within the City, on Reclamation and City land. The Project is compatible with the City Master Plan (Boulder City, 2015), and City zoning (Boulder City, 2017). The City land on which the Project would be located was deeded to the City by Reclamation in 1960. Pursuant to the provisions of the deed, Reclamation is able to reserve ROU for utilities such as the Cable. The existing Cable is located in a ROU area reserved by Reclamation through this process. Reclamation would coordinate with the City to reserve an additional ROU to accommodate the new Cable. The installation of Cable is consistent with the ROU provisions of the deed.
- **Indian Trust Assets (ITA)** - ITAs are defined as “legal interests in property held in trust by the United States for Indian tribes or individuals” (Reclamation, 1993). ITAs are those properties, interests, or assets of a Federally recognized Indian tribe or individual Indian over which the Federal government also has an interest, either through administration or direct control. Examples of ITAs include lands, minerals, timber, hunting rights, fishing rights, water rights, in-stream flows, and other treaty rights. All Federal bureaus and agencies are responsible for protecting ITAs from adverse impacts resulting from their programs and activities. There would be no impact to ITAs as none are located in the project area.
- **Surface and groundwater quality and quantity-** There are no major watercourses or drainages intersected by the proposed project. The mitigation measure described in Section 2.2.1 for surface and groundwater quality and quantity is expected to prevent adverse impacts from stormwater runoff.
- **Floodplains and Wetlands-** There are no floodplains or wetlands located in the vicinity of the Project area, therefore there would be no impact to these resources.
- **Environmental Justice-** Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs federal agencies to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority and low-income populations.

In accordance with CEQ guidance, minority populations should be identified if the minority population in the project area “exceeds 50 percent” or if the percentage of minority population in the project area is meaningfully greater than the “minority population percentage in the general population or other appropriate unit of analysis” (CEQ 1997). Communities should be identified as “low income” based on the annual statistical poverty thresholds from the U.S. Census Bureau (CEQ, 1997).

No high and adverse human health or environmental effects were identified from the proposed action, but data on minority populations and poverty in the Project area was reviewed to assure compliance with the EO. U.S. Department of the Census data on minority populations and poverty for the Census Tracts where the Project would be located was compared to the same data for the state of Nevada and Clark County (U.S. Census, 2017). Minority populations in the Census Tract did not exceed 50 percent, so did not meet the thresholds identified for Environmental Justice analysis. The percent of individuals below poverty levels in the Census Tract were compared to those for Nevada and Clark County. The poverty levels in the Census Tract were below those for Nevada and Clark County. This information confirmed that the Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority and low-income populations.

- Socio-economic- The Project would have an overall beneficial socio-economic impact through improving communications capabilities for Colorado River dams that provide water and power benefits to the area. A small economic benefit to the City and/or the Las Vegas Valley if a local contractor is selected for installation of the Cable. A small economic benefit may also occur if construction supplies are purchased locally, and through purchase of gasoline.
- Visual Resources- The majority of the Cable would be installed underground. There would be short term visual impacts from construction equipment and from the new exposed soil at the installation locations. A small portion of the Cable would be installed overhead. This would be attached to existing structures and is not expected to have a negative visual impact.

3.3 Resources Discussed Further

The following resources are discussed further in this EA:

- Air Quality
- Biological Resources
- Cultural Resources/Traditional Cultural Properties/Sacred Sites
- Noise

3.3.1 Air Quality

3.3.1.1 Affected Environment

National Ambient Air Quality Standards

The U.S. Environmental Protection Agency (EPA) establishes National Ambient Air Quality Standards (NAAQS) for the following common air pollutants, known as criteria air pollutants: ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), particulates less than less than 2.5 microns and less than 10 microns (PM_{2.5}, PM₁₀), and lead (Pb). They have

developed primary and secondary NAAQS for these air pollutants to protect human health and prevent environmental and property damage.

Areas of the country that are currently in violation of NAAQS are classified as non-attainment areas; new sources to be located in or near these areas are typically subject to more stringent air permitting requirements than similar sources in attainment areas. The Clark County Department of Air Quality implements and enforces the air pollution program in Clark County.

Clark County is in attainment or unclassifiable for the NAAQS for PM_{2.5}, SO₂, NO₂, Pb, and O₃. Hydrographic Basin 212, which generally consists of the Las Vegas Valley, in Clark County is a Maintenance Area for CO and PM₁₀ (Clark County, 2017). Hydrographic basins are referred to as “in maintenance” when they have achieved attainment but are subject to a Redesignation/Maintenance plan to demonstrate that attainment is being maintained. The Project is located in portions of hydrographic basins 215, 213, and 167 which are all in attainment or unclassifiable for the criteria air pollutants.

Naturally Occurring Asbestos

Recent geologic research published by the University of Nevada Las Vegas (UNLV) has identified the potential for NOA minerals in mountain ranges and associated alluvium (sediments which have eroded from the mountains) in the City, Southeast Henderson, and Colorado River Black Canyon areas (Buck et.al, 2013). These minerals occur in rocks and soils as a result of natural geologic processes and are found in many states west of the Rocky Mountains (Clark County, 2015). Some of the rock formations in the undeveloped desert areas crossed by the Project have been identified as having the potential to contain NOA.

Natural weathering and human activities may disturb NOA-bearing rock or soil and release mineral fibers in the air, which poses a potential risk for exposure by inhalation (NDOT, 2015). The potential health effect of the NOA detected by UNLV is not known and will be the subject of future study (Clark County, 2015).

In 2014, FHWA and NDOT completed the *Re-evaluation of the Final EIS and ROD Boulder City/US 93 Corridor Study (I-11 Boulder City Bypass)* to determine if the EIS would need to be supplemented because of recent research that identified the potential for NOA in the vicinity of I-11. It was determined that a supplement was not needed because of mitigation measures designed to prevent adverse impacts (FHWA, 2014).

In order to have consistent measures to ensure worker and public safety during construction activities, the mitigation measures which are being implemented for I-11 would be implemented for the Project. These mitigation measures were modeled after the EPA guidance for working with NOA, the Occupational Safety and Health Administration’s asbestos standard for construction, California’s NOA regulations for construction, and best-management practices employed at other asbestos sites across the country (NDOT, 2015).

3.3.1.2 Environmental Consequences

No Action Alternative

No impacts to air quality from construction of the Project would occur under the No Action alternative.

Proposed Action Alternative

During construction, there would be a short-term, minor impact to air quality from construction-related activities. The use of vehicles for travel and fuel based equipment for transport and construction would generate criteria air pollutants; primarily CO, nitrogen oxides, and particulate matter (dust). Excavation of the trench for the Cable may generate dust. Adherence to measures from the Dust Control Permit such as water application to the construction area would minimize dust. The measures from the Dust Control Permit and other design features described in Section 2.2.1 for Air Quality are expected to prevent adverse impacts from NOA.

To determine whether the criteria air pollutant emissions for the Project would exceed NAAQS, recent construction projects with similar duration and equipment and fuel type were reviewed. The criteria air pollutant emissions from these projects were found to be minimal and below any standards which they were compared against (Reclamation, 2015a and 2015b). Based on this review, the Project would not have major negative air quality impacts.

Cumulative Impacts

Cumulative air quality impacts related to I-11 would be minimal as construction of I-11 is projected to be complete by June 2018. Although there may be some overlap in the construction timing of the two projects, construction on I-11 will be largely completed when the Project begins. Construction timing of the Project may also overlap with the Boulder City 69kV Transmission Line. Cumulative impacts related to this project would be minor because the construction overlap area is small and both projects would produce only temporary, minimal air quality impacts. Both of these projects would include mitigation measures to minimize impacts to air quality and prevent violations of air quality standards.

3.3.2 Biological Resources

Affected Environment

Three preliminary biology screening tools were utilized to determine the potential for species to occur in the project area: the federal Information, Planning and Consultation System (IPaC), NDOW and Nevada Natural Heritage Program. In addition, on the ground surveys were conducted. Species assessed include federally listed and proposed species (including designated and proposed critical habitat), migratory birds, and state of Nevada special status species (Appendix C).

Reclamation determined that desert tortoise (Mojave population) (*Gopherus agassizii*) and migratory birds may be affected by the project.

The portion of the project in the open desert is approximately 2.5 miles and follows an existing roadway. The road is heavily used by the general public for recreational use including many types of vehicles. Two invasive grass species cheatgrass (*Bromus tectorum*) and Mediterranean grass (*Schismus barbatus*) were detected along the roadway.

Environmental Consequences

No Action Alternative

No impacts to biological resources from the Project construction would occur under the No Action Alternative.

Proposed Action Alternative

The proposed action may disturb vegetation up to 30 feet on either side of the alignment centerline. The total estimated area of temporary disturbance, based on the assumed 60 foot wide disturbance area, is approximately 12.5 acres.

Reclamation requested initiation of formal consultation with the USFWS on the anticipated adverse effects of the project to the Mojave desert tortoise on January 23, 2017 and received BO 08ENVS00-2017-F-0062 on March 29, 2017. The USFWS determined that the project is not likely to jeopardize the continued existence of the federally threatened Mojave desert tortoise. The measures listed in Section 2.2.1 will be implemented to avoid or minimize impacts to the tortoise. Additional information on the impacts to Mojave desert tortoise are incorporated here by reference and can be found in the BO in Appendix C.

Construction, operations and maintenance activities that may affect vegetation will occur outside of the migratory bird breeding season (February 15 to September 1) to the maximum extent practicable. If construction and maintenance activities cannot occur outside February 15 to September 1, a biologist, approved by Reclamation, will conduct nesting bird clearance surveys. If any nesting bird activity is detected, all activities will cease until the biologist determines that no active nests, eggs, nestlings or recently fledged birds will be affected. No adverse impacts to migratory birds are anticipated.

A Weed Management Plan will be submitted and approved by Reclamation's Biological Services Coordinator prior to project implementation to limit both spread of existing weed infestations and limit the potential for new infestations. It is anticipated that no new weed species will enter the project area. Weed infestations are anticipated to remain at current levels within the project area.

Cumulative Impacts

The proposed project will not result in a level of take of desert tortoise that will adversely affect the rangewide number, distribution, or reproduction of the species. There would be no adverse impacts to migratory birds, and no increases in weed infestations, so no cumulative impacts are anticipated.

3.3.3 Cultural Resources/Traditional Cultural Properties/Sacred Sites

The National Historic Preservation Act (NHPA) Section 106 (36 CFR §800) requires that Federal agencies consider and evaluate the effect that Federal projects may have on cultural resources eligible or listed on the National Register of Historic Places (NRHP) (Historic Properties) under their jurisdiction. A Traditional Cultural Property (TCP) is a property or place that is eligible for the NRHP because of its association with the cultural practices or beliefs of a living community that are: 1) rooted in that community's history and 2) important in maintaining the continuing cultural identity of the community.

EO #13007 "Indian Sacred Sites" requires that Federal agencies with legal or administrative responsibility for management of Federal lands, "to the extent practicable permitted by law, and not clearly inconsistent with essential agency functions, to: (1) accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners; and (2) avoid adversely affecting the physical integrity of such sacred sites".

Affected Environment

Reclamation contracted with Statistical Research Inc. (SRI), an environmental consulting firm to conduct an archaeological and architectural survey to assist with the identification of Historic Properties in the project area. In February 2017, SRI conducted a cultural resources file and record search to identify previously recorded cultural resources and previous surveys conducted within 1 mile of the Project area. The file and record search include a review of site and survey information available on the Nevada Cultural Resource Information System database, at the Nevada State Historic Preservation Office (SHPO); and the following Boulder City locations: the LCRO, the Boulder City Hoover Dam Museum, and the National Park Service Lake Mead National Recreational Area office. See Table 1 for the result of the Class I survey.

The cultural resources file and records search indicates that the Project area crosses under three historic electrical transmission lines (26CK6237, 26CK6238, and 26CK6242) in Segment 1. The historic Boulder Tap Substation is also located in Segment 1. Segment 2 crosses between phone poles associated with the former Boulder City Tap Phone Line (26CK6449). Reclamation and the SHPO agreed to treat these properties as NRHP eligible for this undertaking.

Segment 3 of the project is located within the Boulder City Historic District (Historic District). The Historic District includes 513 buildings and structures, most of which were constructed between 1931 and 1942, and are associated with the initial construction and operations phase of the City's history. The Historic District was listed on the NRHP in 1983.

Two previously determined NRHP eligible architectural properties contribute to the significance of the Historic District adjacent to the route of Segment 3. These include a private residence at 700 Park Street, and Reclamation’s Administration and Annex Buildings at 1200 Park Street.

Three other residences are adjacent to the route of Segment 3. However, they do not meet the minimum 50-year age requirement for NRHP eligibility, and do not contribute to the significance of the Historic District.

After the Class I survey, SRI conducted a field survey (Class III survey) of the project area. SRI examined the entire project area for previously unrecorded and unevaluated cultural resources, and to assess potential direct and indirect effects to NRHP eligible cultural resources in the Project area.

SRI discovered three previously unrecorded historic refuse sites on City land in Segment 2. Two of the sites (26CK10294 and 26CK10295) are small disturbed discard scatters formed by informal dumping activity by local residents. In consultation with the SHPO, and the City, Reclamation determined that they are not NRHP eligible.

The third site is the Old Boulder City Dump (26CK10296). The site covers 32 acres and is located on City land. It was used by local businesses and residents from the 1930s to the 1970s. The dump was closed in the 1970s and scarified at a later date. The dump is associated with the economic development and growth of the City. Reclamation has determined the landfill is NRHP eligible in consultation with the SHPO and the City.

Table 1- Results of Class I Survey

Site Number	Site Type	National Register Eligibility Status	Comments
26CK6237	Hoover Dam to Los Angeles (LA) Transmission Line 2	Eligible ¹	Located in Segment 1.
26CK6238	Hoover Dam to LA Transmission Line 1	Eligible ¹	Located in Segment 1.
26CK6242	Hoover Dam to LA Transmission Line 3	Eligible ¹	Located in Segment 1.
26CK6449	Boulder Tap Phone Line	Eligible ¹	Located in Segment 1.
26CK6255	Boulder Tap Sub-station	Eligible ¹	Located in Segment 1.
Historic District	Boulder City Historic District	Contributes to the Historic District	In Segment 3 within the Historic District.
186-04-810-002	700 Park Street	Contributes to the Historic District	In Segment 3. Residence built in 1932.
186-04-810-001	5 Hillside Drive	Not Eligible	In Segment 3. Residence built in 1974. Does not meet the minimum 50-year age requirement for NRHP eligibility.

Site Number	Site Type	National Register Eligibility Status	Comments
186-04-402-001	2 Hillside Drive	Not Eligible	In Segment 3. Residence built in 1992. Does not meet the minimum 50-year age requirement for NRHP eligibility.
186-04-402-007 & 186-04-410-062	4 Hillside Drive	Not Eligible	In Segment 3. Residence & Vacant Lot built in 1999. Does not meet the minimum 50-year age requirement for NRHP eligibility.
186-04-410-064	1200 Park Street	Contributes to the Historic District	In Segment 3. Reclamation Administration & Annex built in 1931.

¹ The SHPO and Reclamation agreed to treat these properties as NRHP eligible for this undertaking.

Environmental Consequences

No Action Alternative

No impacts to cultural resources/traditional cultural properties/sacred sites from the Project construction would occur under the No Action Alternative.

Proposed Action Alternative

Direct effects to historic properties could result from alteration, partial, or complete destruction of historic properties through mobilization of heavy equipment, or displacement/disturbance of associated features, and vernacular landscaping through the excavation of soils for Cable and vault installation.

The previously recorded sites, 26CK6237, 26CK6238, 26CK6449, and 26CK6255 are considered to be NRHP eligible. There are no features associated with these sites that will be directly impacted by the undertaking.

Segment 2 crosses two refuse scatters (26CK10294 and 26CK10295) that have been determined to not be NRHP eligible. Because they do not meet the Nation Register eligibility criteria, they would be disturbed by the undertaking with no further protection or management consideration.

Approximately 250 yards of Segment 2 crosses the southern edge of the Old Boulder City Dump (26CK10296). The dump is NRHP eligible. The artifacts in this part of the site appear to be secondary deposits. SRI reports that there is little evidence to suggest that there are buried deposits in this portion of the site. This site would not be adversely affected by the installation of Segment 3.

Segment 3 is also within the Historic District. The Cable would be installed in an existing utility corridor across parcel 186-04-810-002 where the contributing residence at 700 Park Street is located, and across parcel 186-04-410-064 where Reclamation's Administration Office and Annex is located. Both buildings are located uphill and out of the direct Area of Potential Effect (APE). No associated features or vernacular landscaping are in the direct APE. The undertaking would not affect the properties.

The APE for indirect effects to historic properties considers visual elements that could diminish the integrity of historic properties for which setting, feeling, and/or association are aspects of integrity. The potential for indirect effect would be limited to the 15-day construction period when visual, audible, and atmospheric impacts may occur from the transport and operation of equipment. The 50 foot-long segment of Cable that would span Avenue I would be indistinguishable from the existing Cables on the poles that span the street. Reclamation finds that the indirect effect of the undertaking to the residence at 700 Park Street and Reclamation Administration and Annex at 1200 Park Street would not be adverse.

On August 1, 2017 Reclamation and the SHPO concurred on a finding of no adverse effect for the undertaking. There would be no impacts to TCPs or Sacred Sites as none are known to occur in the area.

Cumulative Impacts

No cumulative impacts are anticipated since there would be adverse effects from the undertaking.

3.3.4 Noise

Affected Environment

Noise is generally defined as unwanted sound considered unpleasant, loud, or disruptive to hearing. Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Sound on the dB scale is referred to as sound level. The threshold of human hearing ranges from 0 dB to 120 dB.

The existing noise level for residents near or within the Project area varies depending on the location. There are no residences located in the vicinity of Segment 1 and for approximately one-half of Segment 2. The residences located in the vicinity of the western portion of Segment 2 have a low level of existing noise, primarily from off-road vehicle use, aircraft, and light residential traffic in the neighborhoods south of the Cable route. Residences located in the vicinity Segments 3 and 4 have more residential traffic noise, with the highest traffic noise adjacent to U.S. Highway 93 in Segment 4. Other existing noise in Segments 3 and 4 is from aircraft and equipment such as leaf blowers. There are no schools, places of worship, or other community gathering areas located directly adjacent to the Cable installation route. As a means of reference, Table 1 gives sound levels of typical noise sources.

Table 2- Sound Levels of Typical Noise Sources and Environments

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet fly-over at 1000 ft	110-100	Rock Band
Gas Lawn Mower	100-90	
Diesel Truck at 50 ft, at 50 mph	90-80	Food Blender at 3 ft
Commercial Area, Gas Lawn Mower at 100 ft	70	Vacuum Cleaner at 10 ft
Heavy Traffic at 300 ft	60	Normal Speech at 3 ft
Quiet Urban Daytime	50-40	Large Business Office
Quiet Urban/Suburban Nighttime	40-30	Theater, Large Conference Room (Background)
Quiet Rural Nighttime	30-20	Library, Bedroom at Night
	20-10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	

Source: Caltrans, 1998

Noise can affect humans through hearing damage, interference with speech and other activities, and by causing annoyance. The EPA has identified a range of yearly Day-Night Sound Levels* to protect people from the effects of environmental noise. These are not standards, criteria, regulations, or goals but can be viewed as levels below which there is no reason to suspect that the general population will be at risk from any of the identified effects of noise (EPA, 1978). These values applicable to residential noise are less than or equal to (\leq) 55 dB to prevent outdoor activity interference and annoyance, and \leq 45 dB to prevent indoor activity interference and annoyance.

Environmental Consequences

No Action Alternative

The No Action Alternative would not change ambient noise levels in the local area.

Proposed Action Alternative

Based on the estimated potential noise levels for equipment used for construction, construction noise may cause temporary disruption of outdoor speech and/or annoyance during the 3-month construction period. These increases in noise are expected to be temporary and intermittent, depending when and where new Cable is being installed. Table 5 lists noise levels for construction equipment similar to that used for the proposed action.

*Some statistical noise levels are stated in terms of decibels on the A-weighted scale (dBA). Noise levels stated in terms of dBA reflect the response of the human ear by filtering out some of the noise in the low and high frequency ranges that the ear does not detect well. Day-Night Sound Levels are the A-weighted equivalent sound level for a 24-hour day.

Table 3- Sound Levels of Typical Equipment

Equipment	dBA at 50 feet
Rock Drill	98
Backhoe	80
Truck	88
Auger Drill Rig	84
Generator	81

Source: FWHA, 2006

The highest noise levels would be generated where it is necessary to drill or cut through rock to install the Cable. These areas will most likely be along the eastern portion of Segment 2, the portion of the Project area that is farthest away from residences. Sound typically dissipates at a rate of 4.5 dBA to 6.0 dBA for each doubling of distance depending on the topography of the area and environmental conditions. Thus, based on a sound dissipation rate of 6.0 dBA per doubling of distance, a sound level of 96 dBA at 50 feet from the noise source would be approximately 90 at a distance of 100 feet, 84 dBA at a distance of 200 feet, and so on. Based on this, noise levels would be somewhat reduced because of the distance of the residences from the Cable route.

Noise levels are expected to be minor for Segments 3 and 4. The eastern portion of Segment 3 is not in close proximity to residences. The western portion of Segment 3 would be hand dug, requiring a minimal amount of small equipment. Although the eastern portion of Segment 4 is close to some residences, Cable would be pulled through existing conduit for this portion. The western portion of Segment 4 is not in close proximity to residences and is located along U.S. Highway 93, which already experiences high traffic noise.

Nighttime noise would not be generated because work would be carried out during daylight hours and in compliance with the City noise ordinance described in Section 2.2.1 of this EA.

Cumulative Impacts

Cumulative noise impacts related to Interstate 11 would be minimal as construction of Interstate 11 is projected to be complete by June 2018. Although there may be some overlap in the construction timing of the two projects, construction on Interstate 11 will be largely complete with no major noise impacts when the Project is started. Construction timing of the Project may also overlap with the Boulder City 69kV Transmission Line. Cumulative impacts related to this project would be minor because the construction overlap area is small and both projects would produce only temporary, intermittent noise during daylight hours.

4.0 Coordination and Consultation

4.1 National Historic Preservation Act Consultation

Reclamation consulted with the City Planner and Public Works Director for Boulder City, Preserve Nevada, Boulder City Hoover Dam Museum, and the Nevada SHPO for the undertaking. The SHPO concurrence letters are included in Appendix B.

4.2 Endangered Species Act Consultation

Reclamation requested initiation of formal consultation with the USFWS on the anticipated adverse effects of the project to the Mojave desert tortoise on January 23, 2017 and received BO 08ENVS00-2017-F-0062 on March 29, 2017. Reclamation is responsible for ensuring implementation of all terms and conditions listed in the BO (File No.08ENV500-2017-F-0062). The BO can be found in Appendix C.

4.3 Scoping/Public Involvement

Notification of the initiation of a 30-day public comment period on the Draft EA was sent to a distribution list that includes Federal, State, and County contacts and other interested parties. The Draft EA was posted on Reclamation's internet site at: <https://www.usbr.gov/lc/region/g2000/envdocs.html>. A news release regarding the availability of Draft EA was sent to newspapers and other media and posted on Reclamation's website at <https://www.usbr.gov/newsroom/newsreleases>.

5.0 References

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6.0 List of Preparers

Dianne Bangle
Geographic Information System Team Leader
Bureau of Reclamation, Lower Colorado Regional Office

Aaron Dykstra
Supervisory Control and Instrument Mechanic
Bureau of Reclamation, Lower Colorado Dams Office

James Kangas
Archaeologist
Bureau of Reclamation, Lower Colorado Regional Office

Joe Martinez
Electronics Engineer
Bureau of Reclamation, Lower Colorado Regional Office

Becci Rogers
Realty Specialist
Bureau of Reclamation, Lower Colorado Regional Office

Faye Streier
Natural Resource Specialist-National Environmental Policy Act Coordinator
Bureau of Reclamation, Lower Colorado Regional Office

Andrew Trouette
Natural Resource Specialist-Biological Services Coordinator
Bureau of Reclamation, Lower Colorado Regional Office

APPENDIX A

Segment Photos

EA LC-16-26



Appendix A, Figure 1- Route of Segment 1 viewed to the north from Boulder Tap Substation



Appendix A, Figure 2-Near the start of Segment 2 facing northwest



Appendix A, Figure 3-Segment 3 cable installation route facing west along Nevada Way



Appendix A, Figure 4 -View to the northwest from the intersection of Colorado Street along Segment 4

APPENDIX B

Section 106

Correspondence Letters

EA LC-16-26



Brian Sandoval, Governor
 Leo M. Drozdoff, P.E., Director
 Rebecca L. Palmer, SHPO

March 1, 2016

Mr. Marc Maynard, Chief
 Resources Management Office
 Bureau of Reclamation
 Lower Colorado Region
 P.O. Box 61470
 Boulder City, NV 89006-1470

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Keyword		

RE: Section 106 Consultation on the Area of Potential Effect for the Boulder Tap to Boulder City Fiber Optic Cable Installation, Clark County, Nevada (UT2016-4227)

Dear Mr. Maynard:

The Nevada State Historic Preservation Office (SHPO) has reviewed the submitted documents in compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. These materials are dated January 28, 2016 (received February 1, 2016) and request SHPO concurrence on the federal agency's area of potential effect (APE) for the undertaking.

Project Description

This proposed undertaking is the installation of new fiber optical cable to update the digital communication capacity between Bureau of Reclamation (Reclamation) facilities and offices. The project is located in Boulder City, Clark County, Nevada. The proposed Area of Potential Effect (APE) crosses lands owned by the City of Boulder City and Reclamation. A portion of the APE is within the Boulder City Historic District, a district listed in the National Register of Historic Places.

The installation totals approximately three miles of fiber optic cable in discontinuous segments, and the installation of seven buried 2x3x3 foot deep vaults which serve as the connection points for the cable. These vaults will be flush to the surrounding ground service. All but a 50-foot long segment of the cable will be installed in an 18-inch wide trench excavated along 2-track roads in the open desert east of Boulder City, and in existing utility corridors along paved streets in Boulder City. The 50-foot section will be strung over Avenue I within the City limits on two existing utility poles which already carry similar wire.

The discontinuous segments of this undertaking are identified as:

- Segment 1- Boulder Tap Sub-station to Interstate 11,
- Segment 2- Boulder Tap Sub-station to Avenue I,
- Segment 3- Avenue I to Hillside Drive, and
- Segment 4- Colorado Street to the Great Basin Highway.

Area of Potential Effect (APE)

Table 1. Direct, Indirect and Cumulative Effect APEs on page 3 of the current submission defines and justifies the reasons for selecting the discontinuous APE. Indirect effects are expected for work

undertaken within the historic district. These effects will be limited to approximately 15 days duration and, once the overhead cable is installed the cables should be indistinguishable from the existing cables that span the street.

The cumulative effects discussion speaks to future connected undertakings however, frequently, cumulative effects are assessed by what the current undertaking may do to areas within the APE. It is possible that the installation of seven additional vault boxes within spaces already containing vault boxes could be the tipping point for a cumulative change to the setting--perhaps transforming it from pastoral to commercial/industrial. A consistent degradation of a setting can result in a cumulative effect. The SHPO presumes that Reclamation has considered the potential for cumulative effects as a result of the proposed project.

The SHPO concurs with Reclamations' determination of the Area of Potential Effect for this undertaking.

The SHPO also agrees that Reclamations' proposed identification efforts for this undertaking are adequate.

When resuming consultation with SHPO for this undertaking, the SHPO recommends that the following items be included in the next submission:

- a larger scale map that clearly depicts the segments of the undertaking and also more clearly illustrates the boundaries of the proposed APE,
- a map which identifies the specific locations of the seven vaults to be installed, and
- a map which illustrates where the staging areas for this undertaking will occur.

Should you have any questions regarding this correspondence please contact staff architectural historian Mara Thiessen Jones at 775-684-3439 or mara.jones@shpo.nv.gov or staff archaeologist Jessica Axsom at 775-684-3445.

Sincerely,



Julie H. Ernstein Ph. D., RPA
Deputy State Historic Preservation Officer

21305



July 25, 2017

Leonard Schilling
Lower Colorado Region Area Manager
Bureau of Reclamation
PO Box 60400
Boulder City, Nevada 89006-0400

Re: Boulder Tap to Boulder City Fiber Optic Cable Installation Project in Clark County, Nevada
LC-2631/ENV-3.00/Undertaking #2016-4227

Dear Mr. Schilling:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received June 26, 2017 in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

Project Description and Area of Potential Effect (APE)

The project details and establishment of an area of potential effect (APE) were reviewed and concurred upon in the SHPO letter of March 1, 2016 for this undertaking.

Identification Effort for Historic Properties

Approximately 16.4 acres were intensively surveyed for cultural resources. This cultural inventory resulted in the identification of cultural resources (discussed below) within the established APE.

Determinations on National Register Eligibility

Archaeology:

The SHPO concurs with the Bureau of Reclamation's (BOR) determination that the following cultural resources are **not eligible** for listing in the National Register of Historic Places (NRHP) under any of the Secretary's Significance Criteria (i.e., A-D, inclusive):

- 26CK10294 (Historic Refuse Dump)
- 26CK10295 (Historic Refuse Dump)

The SHPO concurs with BOR's determination that 26CK10296 (Old Boulder City Landfill) is **eligible** for listing in the NRHP under the Secretary's Significance Criteria A and D.

Architecture:

No previously-unidentified architectural resources were located during the cultural resources survey. However, background investigations identified several architectural resources in the APE.

BOR completed IMACS site update forms for five architectural resources in the APE: 26CK6237, 26CK6238, and 26CK6242 (Hoover Dam to LA Transmission Lines 1-3); 26CK6449 (Boulder City TAP Telephone Line);

and 26CK6255 (Boulder City Substation). Please note that:

- as architectural (engineered) resources, these should be recorded on ARA forms instead of IMACS forms;
- photographs were not included on the survey forms for these five resources; and
- it is not clear whether each of the five resources is NRHP-listed, NRHP-eligible (or ineligible) with SHPO concurrence, or simply recommended eligible or ineligible without previous SHPO concurrence.

In order for SHPO to complete its review, please resubmit ARA forms with current photographs and clarifications of eligibility. If BOR wishes to leave these resources unevaluated and treat them as NRHP-eligible for the purposes of this undertaking, please notify our office.

The APE contains two NRHP-listed resources, both of which contribute to the Boulder City NRHP Historic District: the residence at 700 Park Street and the BOR Administration Building & Annex.

Native American Consultation

The SHPO reminds BOR that the agency must consult with Native American tribes concerning properties of religious and/or cultural significance that could be affected by the undertaking per 36 CFR §800.4(a)(4). What efforts have been made to provide these representatives with an opportunity to comment on this undertaking? In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

Consulting Parties and Public Consultation

The SHPO reminds the BOR that the agency must consult with the public and representatives of organizations that have a demonstrated interest in historic properties per 36 CFR §800.2(c)(5). What efforts have been made to provide the public and interested parties with an opportunity to comment on this undertaking? In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

Finding of Effect

If BOR were to treat 26CK6237, 26CK6238, 26CK6242, 26CK6449, and 26CK6255 as NRHP-eligible, the SHPO would concur with a BOR finding of No Adverse Effect to historic properties (those five unevaluated resources and the two NRHP-listed resource in the APE).

Should you have any questions concerning this correspondence, please contact Jessica Axsom at (775)684-3445 or by email at jaxsom@shpo.nv.gov or SHPO staff architectural historian Kristen Brown at (775) 684-3439 or by email at knbrown@shpo.nv.gov.

Sincerely,



Robin K. Reed
Deputy State Historic Preservation Officer

APPENDIX C

Biological Opinion

EA LC-16-26



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Southern Nevada Fish and Wildlife Office
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130
Ph: (702) 515-5230 Fax: (702) 515-5231

IN REPLY REFER TO:
08ENV500-2017-F-0062

March 29, 2017

Memorandum

To: Chief, Resource Management Office, Bureau of Reclamation, Lower Colorado
Regional Office, Boulder City, Nevada

From:  Field Supervisor, Southern Nevada Fish and Wildlife Office, Las Vegas, Nevada

Subject: Biological Opinion for the Hoover Fiber Optic Trail Project

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed Hoover Fiber Optic Trail Project and its effects on the federally threatened Mojave desert tortoise (*Gopherus agassizii*), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*) and 50 CFR § 402 of our interagency regulations governing section 7 of the Act. We received your January 18, 2017, request for formal consultation.

We have based the attached biological opinion on information that accompanied your January 18, 2017, request for consultation, your biological assessment, and our files. A complete project file of this consultation is available in the Service's Southern Nevada Fish and Wildlife Office in Las Vegas. If you require additional assistance, please contact Carla Wise in the Southern Nevada Fish and Wildlife Office at (702) 515-5102. Please reference the above file numbers in future correspondence concerning this consultation.

Attachment

cc: Supervisory Biologist - Habitat, Nevada Department of Wildlife, Las Vegas, Nevada

ATTACHMENT

BIOLOGICAL OPINION 08ENVS00-2017-F-0062

A. CONSULTATION HISTORY

- May 5-10, 2016: A request was submitted for an official Service Information for Planning and Conservation (IPaC) list of threatened, endangered, proposed and candidate species, and proposed and final designated critical habitat, that may occur within the boundary of the proposed Hoover Fiber Optic Project and/or may be affected by the proposed project. Data requests were also submitted to the Nevada Department of Wildlife (NDOW) and Nevada Natural Heritage Program (NNHP). A list of known or potential occurrences of wildlife resources within a four mile buffer around the proposed project route was returned from NDOW. NNHP provided a list of endangered, threatened, candidate, and/or at risk plant and animal taxa within a three kilometer radius of the proposed project route. The three reports concurred on potential impacts to the Mojave desert tortoise (*Gopherus agassizii*).
- May 9, 2016: Southern Nevada Fish and Wildlife Office Senior Wildlife Biologist, Michael Burroughs, was contacted via telephone to discuss a desert tortoise survey of the site and expected findings.
- May 10, 2016 A desert tortoise presence absence survey was conducted. The area surveyed included approximately 60 feet (18 meters) either side of the proposed project centerline. No desert tortoise sign was observed within the area surveyed (approximately 24 acres total).
- January 23, 2017: The Service received a request from the Bureau of Reclamation (Reclamation) for formal consultation on anticipated adverse effects to the Mojave desert tortoise (*Gopherus agassizii*) from the proposed Hoover Fiber Optic Trail Project, and consultation was initiated.

B. DESCRIPTION OF THE PROPOSED ACTION

Reclamation proposes to install a new 72-strand fiber optic cable west of the Colorado River, in and to the east of Boulder City, Clark County, Nevada (see Figure 1). The new 72-strand cable would be installed in a trench below ground, as well as strung aerially on utility poles. The older, deteriorating 12-strand fiber optic cable would remain in place where it does not align with the route for the new cable. Underground cables would be buried to a depth of approximately two to four feet (0.6 to 1.2 meters). The process begins with digging a trench in which to lay cable with conduit (generally 4-inch plastic pipe). The conduit/cable is then buried in this trench.

Chief

The proposed action may disturb vegetation up to 30 feet on either side of the alignment centerline. This disturbance area would vary, depending on the rockiness of the substrate, installation method (trenching or aerial mounting on poles where trenching is not practical) and location along the alignment (open desert versus within Boulder City). The total estimated area of temporary disturbance, based on the assumed 60 foot wide disturbance area, is approximately 12.5 acres.

Reclamation proposes to begin construction in Fiscal Year 2018. Installation is expected to last three weeks, which includes two weeks of cable installation and one week to connect the termination points. Once installed, the new 72-strand fiber optic cable is expected to provide reliable communication for 20 to 25 years.



Figure 1. Alignment of the proposed Hoover Fiber Optic Project (depicted in green) from Boulder City to the Boulder City Tap and Boulder City Bypass Tap, Clark County, Nevada.

Project Component Description and Construction

Where the cable is buried (a majority of the alignment), the cable would be placed in a protective plastic conduit and buried two to four feet (0.6 to 1.2 meters) underground, depending on the substrate. This includes locations within Boulder City where the cable and conduit would be placed under existing roads and sidewalks.

Approximately one mile of cable within conduit would be installed in Boulder City (see Figure 2), adjacent to the Boulder City Historic District, following Colorado Street from Great Basin Highway (US Route 93) until reaching the Lower Colorado Region Communication Facility adjacent to the Boulder City Bypass Interagency Project Office (1404 Colorado Street, Boulder

City, Nevada). This section of cable would connect with the west end of an existing high capacity section of cable buried behind the houses along the north side of Denver Street (depicted in red on Figure 2). The new cable/conduit would connect with the east end of this existing cable, then align with the south side of Nevada Way, turning south to align with Avenue I.



Figure 2. Boulder City portion of the fiber optic cable (planned cable route is depicted in green; existing cable is depicted in red).

A 120-foot section of cable leading to a Reclamation facility at 1200 Park Street, Boulder City, Nevada, in Section 4, would also be replaced (see Figure 3).



Figure 3. Fiber optic cable leg to be replaced (depicted in red), connecting to 1200 Park Street building.

At the intersection with Park Place, an approximately 500-foot section of the cable would be suspended aurally from Avenue I northeast to an existing City of Boulder City water tank on a hill adjacent to Nevada Way (see Figure 4). This would reduce the length of cable needed within this section and minimize disturbance within a wash. Wooden utility poles currently in place would be utilized for the aerial mounting.



Figure 4. Aerially mounted portion of new fiber optic cable (depicted in red).

From the end of the aerial portion, at the water tank, the ground would again be trenched and the cable and conduit placed underground, roughly following existing dirt roads in open desert (south of the old Boulder City landfill) for just over two miles, before reaching Intertie Road near the Boulder City Bypass Project Right of Way. At this point, approximately 700 feet of buried cable would follow Intertie Road to the northeast to connect with the Boulder City Bypass Project Tap, and approximately 600 feet of buried cable would continue south across Intertie Road to connect to the existing Boulder City Tap.

Operations and Maintenance

Once installation has been completed (the cable and conduit buried and all connections made), the disturbed areas would be allowed to revegetate passively. No further access to the underground or aerial cable is anticipated while it is in use. If maintenance is required, all of the conservation measures in the biological opinion would be adhered to when working in desert tortoise habitat.

Proposed Conservation Measures and Minimization Measures

The following proposed mitigation measures will be implemented as part of the project to avoid or reduce environmental impacts associated with the installation of the proposed fiber optic

cable on species listed under the ESA. These mitigation measures were designed to comply with the Service guidelines.

- Provide a Service-approved Authorized Biologist(s) to be onsite during construction activity. Any Biological Monitors (monitors) onsite to assist will work under the direct supervision of the Authorized Biologist.
- The Authorized Biologist or monitor will be present during all site activities that have potential to disturb soil, vegetation, and wildlife. An Authorized Biologist or monitor will walk immediately ahead of equipment during vegetation removal and trenching activities.
- The Authorized Biologist will develop and present a tortoise education program to all individuals performing work along the proposed alignment. The program will consist of either a presentation or fact sheet as determined by project level consultation between Reclamation and the Service. Information included will consist of, at a minimum: 1) objectives of environmental compliance; 2) life history of the desert tortoise; 3) legal status of the desert tortoise; 4) description of and definitions included in the ESA; 5) actions if a tortoise is encountered; 6) mitigation measures being taken to protect the tortoise; 7) penalties for non-compliance with stated protection measures; 8) habitat protections; and 9) other environmental compliance stipulations.
- Trenches, pits, or holes (if needed) will be covered or backfilled at the end of each day. If covering or backfilling is not feasible, escape ramps will be provided and tortoise biologists/monitors will inspect the areas each morning.
- Prior to trenching activities, a Weed Management Plan will be developed to include measures designed to reduce the propagation and spread of undesirable plants.
- Tortoises will only be handled by Service-approved Authorized Biologists, or by a monitor under the direct supervision of an Authorized Biologist.
- Should a desert tortoise or nest be discovered, construction activities will cease until the tortoise moves from the area on its own accord, is moved from harm's way, or the nest (if applicable) is relocated.
- Tortoises moved offsite and released into undisturbed habitat on public land will be placed in the shade of a shrub, in a natural unoccupied burrow similar to the one in which it was found, or in an artificially constructed burrow in accordance with tortoise handling protocols and current Service guidelines.
- During any handling, desert tortoises will be treated in a manner to ensure they do not overheat or exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises will be kept shaded at all times until it is safe to release them.
- Any burrows that can be avoided will be flagged and all project vehicles, equipment, and activities will avoid the area. If a burrow is not avoidable, it will be cleared and collapsed in accordance with Service protocols.
- The area underneath all vehicles, equipment, and material will be checked by

operators for tortoises before they are moved.

- The Service will be notified immediately of any desert tortoise death or injury due to the project implementation.
- All appropriate state and federal permits, including NDOW and Service permits for handling desert tortoises or their parts will be acquired by the Authorized Biologist(s) if tortoise handling is anticipated to occur.
- Overnight parking and storage of equipment and materials, including stockpiling, will be within previously disturbed areas or within project areas cleared by an authorized biologist.
- Water applied for dust abatement (if applicable) will use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites.
- Litter control (including any food related waste) will be implemented and enforced by the project proponent.
- Workers will be notified that feeding wildlife will not be allowed.
- Speed limits will be posted at 15 miles per hour or below for construction traffic on all roads within the Action Area.
- Vehicle traffic will be restricted to existing roads.

Reclamation will compensate for 12.5 acres of desert tortoise habitat by paying the current fee rate per acre (\$867) as determined by the Service.

C. ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATION

Section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*) requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this biological opinion considers the effects of the proposed Federal action, and any cumulative effects, on the rangewide survival and recovery of the desert tortoise. It relies on four components: (1) the Status of the Species, which describes the rangewide condition of the desert tortoise, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the desert tortoise in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the desert tortoise; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the desert tortoise; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the desert tortoise.

D. STATUS OF THE SPECIES AND CRITICAL HABITAT RANGEWIDE

The rangewide status of the desert tortoise and its critical habitat consists of information on its listing history, species account, recovery plan, recovery and critical habitat units, distribution, reproduction, and numbers. This information is dated September 23, 2010, and provided on the Service's website at: http://www.fws.gov/nevada/desert_tortoise/dt_life.html. If unavailable on this website, contact the Southern Nevada Fish and Wildlife Office in Las Vegas at (702) 515-5230, and provide File No. 84320-2012-F-0029 along with the date of September 23, 2010. Additional information is provided in our 5-year review (Service 2010b) and revised recovery plan for the Mojave desert tortoise (Service 2011).

This project would not affect or occur in desert tortoise critical habitat. The nearest critical habitat is Piute-Eldorado Desert Wildlife Management Area four miles south of the proposed project alignment (Service, 2016).

E. ENVIRONMENTAL BASELINE

Action Area

The action area is defined as all areas to be affected directly or indirectly by the Federal action, including interrelated and interdependent actions and not just the immediate area involved in the action (50 CFR § 402.02). Subsequent analyses of the environmental baseline, effects of the action, cumulative effects, and levels of incidental take are based upon the action area as determined by the Service.

The action area for this project has been defined as all areas where desert tortoises could be affected directly or indirectly by the proposed action. Direct impacts to the desert tortoise from construction of the proposed project would occur within or immediately adjacent to the identified alignment. Additionally, desert tortoises in areas adjacent to the fiber optic cable alignment disturbance areas may be affected as a result of a disruption in movements and habitat fragmentation during installation, which will be minimized to the extent possible. For these reasons, the Action Area for this project has been defined as 60 feet on either side of the proposed alignment, 30 feet beyond the expected maximum extent of potential disturbance.

Habitat Characteristics of Action Area

The project site is located in Mojave Mid-Elevation Mixed Desert Scrub. The vegetation in this ecological system is quite variable and can include the codominant and diagnostic species of *Coleogyne ramosissima*, *Eriogonum fasciculatum*, *Ephedra nevadensis*, *Grayia spinosa*, *Menodora spinescens*, *Nolina* spp., *Opuntia acanthocarpa*, *Salazaria mexicana*, *Viguiera parishii*, *Yucca brevifolia*, or *Yucca schidigera*. Desert grasses, may include *Achnatherum hymenoides*, *Achnatherum speciosum*, *Muhlenbergia porteri*, *Pleuraphis jamesii*, *Pleuraphis rigida*, or *Poa secunda*.

One invasive weed, cheatgrass (*Bromus tectorum*), was observed during the desert tortoise presence/absence survey conducted on May 10, 2016. Cheatgrass is an introduced annual grass widely distributed on rangelands in the western U.S. It is an opportunistic grass which thrives in disturbed areas, is able to out-compete native plants for limited resources, and is able to germinate in the fall or spring. An abundance of cheatgrass has the potential to degrade desert tortoise habitat and crowd out tortoise forage.

1. Factors Affecting the Species within the Action Area

The eastern terminus of the proposed fiber optic cable will connect to a new Tap constructed as part of the Interstate 11/Boulder City Bypass, currently under construction, and the existing Boulder City Tap within the NV Energy Substation. Completion of the Bypass (and associated Tap) is expected to be completed in 2018. Tortoise populations and habitat would be temporarily and permanently disturbed due to the Bypass project; the linear nature of the Bypass has the potential to fragment habitat by acting as a barrier to tortoise movement.

The area between Boulder City and the Boulder City Bypass is open desert supporting recreational activities, including off road vehicle use. This activity has the potential to disturb/harass tortoises through possible collisions with vehicles and habitat destruction. Boulder City residents are also known to use the area for hiking with pet dogs. Domestic dogs also have the potential to harass the local desert tortoise population.

2. Status of the Desert Tortoise and its Habitat in the Action Area

Survey data from other projects in the vicinity indicate the project action area has moderate density tortoise habitat. Desert tortoise survey data from the Boulder City Bypass project shows live tortoise and tortoise sign in close proximity to the proposed project (NewFields 2014). Throughout most of the Mojave region, desert tortoise occur in yucca, creosote bush and saltbush scrub habitats, primarily on flats and bajadas with soils ranging from sand to sandy-gravel characterized by scattered shrubs and abundant inter-shrub space for herbaceous plant growth. Desert tortoises can also be found in rocky terrain and slopes, generally below 4,000 feet (1,220 meters) in elevation.

Within the Eastern Mojave Recovery Unit, tortoises are typically active in spring, late summer, and early fall. The region receives both winter and summer rains, which support two distinct seasonal floras for desert tortoise forage. Desert tortoises also feed on cacti, perennial grasses, and herbaceous perennials. Desert tortoises in the Eastern Mojave Recovery Unit typically burrow singly in caliche caves, bajadas, and washes (Service 1994).

Habitat fragmentation, degradation, and loss are also major factors in desert tortoise decline. Habitat degradation forces desert tortoise to forage over larger areas, exposing them to greater dangers. The conversion of native perennial grasses, annuals, and shrubs to inedible exotic species has reduced food sources for the desert tortoise and increased susceptibility to wildfires further increasing tortoise mortality.

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Additional factors contributing to the decline of desert tortoises include collection of desert tortoises for pets, food, and commercial trade; collision with vehicles on roads and highways; mortality from gunshot; and off-road vehicle travel. Predation by the common raven can be high on younger age classes of desert tortoise.

Upper respiratory tract disease (URTD) was discovered in 1990 and is currently a major cause of mortality in the western Mojave Desert population. Habitat degradation, poor nutrition, and drought have increased the desert tortoises' susceptibility to this disease (Service 1994).

Project Desert Tortoise Surveys

A desert tortoise presence/absence survey was conducted along the proposed alignment on May 10, 2016. The survey was completed by biologists Erika Balderson and Kathryn Wilson. Field survey and data analysis methodology followed current Service protocols (Service 2010a). The area surveyed included all areas potentially affected directly or indirectly, which was determined to be 60 feet (18 meters) either side of the proposed alignment; direct impacts are expected to occur no more than 30 feet (9 meters) either side of the proposed alignment.

During the desert tortoise presence/absence survey, no live tortoises were observed within the survey area. No desert tortoise sign and no evidence of nesting from previous years were observed.

The Service pre-project survey protocol density calculation table could not be used to determine the number of tortoises anticipated to utilize the proposed action area due to the negative finding of live tortoises.

Other desert tortoise surveys have recently been conducted in the vicinity of the proposed project alignment, including one for the Boulder City Bypass project currently under construction, to which the fiber optic cable eastern terminus will connect. A map of desert tortoise findings during that survey has been included for reference (see Figure 5).

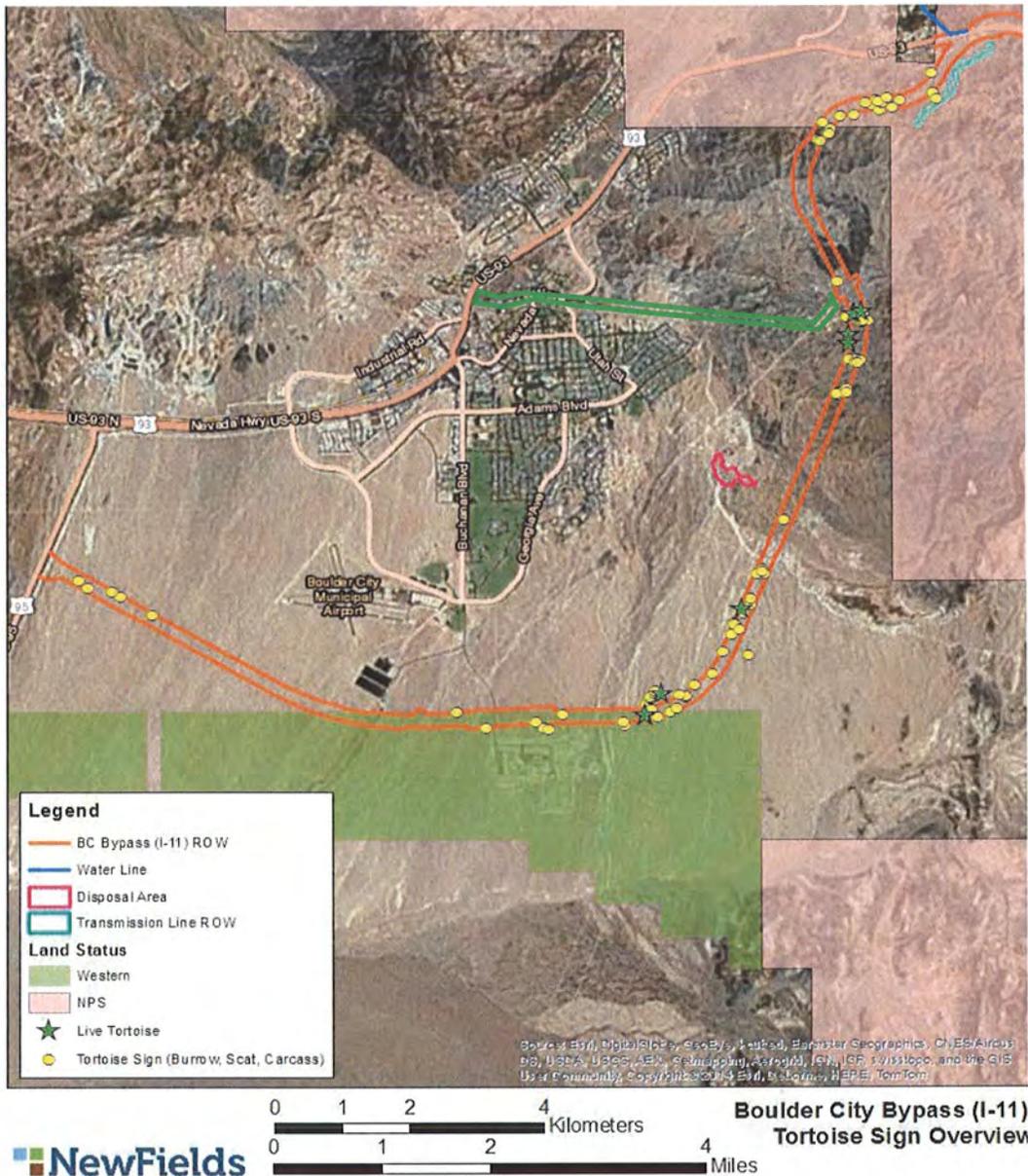


Figure 5. Tortoise sign observed along the Boulder City Bypass Project during desert tortoise field surveys conducted in April and May 2014. The location of the proposed fiber optic cable alignment is depicted in bright green.

F. EFFECTS OF THE PROPOSED ACTIONS ON THE LISTED SPECIES

Direct Effects

Desert tortoises that may enter the area have the potential to be affected during trenching activities or may become entrapped within open trenches if not properly protected. Although no tortoise activity was observed during the field survey, construction activity could result in direct mortality, wounding, injury, or harassment of individuals as a result of encounters with vehicles or heavy equipment should a tortoise enter the area, particularly along access roads. Project

vehicles or equipment that stray from designated areas may crush desert tortoises aboveground or in their burrows or damage habitat outside the project area. Tortoises could wander into work areas or take refuge underneath project vehicles and equipment, and be killed or injured when the vehicle or equipment is moved. A worker education program and the presence of Authorized Biologist(s) and tortoise monitors should minimize potential impacts.

If construction monitoring surveys locate tortoises needing to be moved out of harm's way, those tortoises may need to be handled by an Authorized Biologist. Risks to tortoises during capture and handling include overheating, dehydration if they void their bladder (Averill-Murray 2002), transmission of disease, general reduction in health due to stress, and injury during capture. Capture and handling protocol have been established and accepted by resource agencies and these protocols should be used to reduce the risks to tortoises if handling of tortoises by trained and experienced biologists approved by the Service and NDOW as deemed necessary.

The proposed project would have a temporary impact on up to 12.5 acres of desert tortoise habitat. Desert tortoises found along the cable alignment would not be translocated to other locations; tortoises encountered during cable installation would be allowed to move out of harm's way on their own accord, or be moved into adjacent habitat by an Authorized Biologist. The proposed project is not expected to have adverse impacts to local or regional genetic connectivity of the desert tortoise population. This is based on the lack of tortoise sign observed during the field survey, the short time frame for area disturbance, and expected lack of long-term impacts along the proposed project alignment.

Desert tortoises may be attracted to the construction area by application of water for dust control, placing them at higher risk of injury or mortality. Actions will be taken to avoid puddles resulting from over application. Project activities may also result in trash and litter accumulating on the site, attracting predators. Some forms of trash may be ingested by tortoises or they may become entangled resulting in their injury or death. Measures proposed by Reclamation to provide desert tortoise awareness training and control litter should minimize potential effects from subsidized tortoise predators.

The 3.3-mile linear proposed project alignment would not contribute to habitat fragmentation, similar to a road, as current habitat conditions will be allowed to return once installation has been completed.

Indirect Effects

Indirect effects are those that are caused by, or result from, the Proposed Action and are later in time, but reasonably certain to occur. In contrast to direct effects, indirect effects are more subtle, and may affect individuals and populations and habitat quality over an extended period of time, long after construction activities have been completed. Indirect effects are of particular concern for long-lived species such as the desert tortoise because project-related effects may not become evident in individuals or populations until years later.

Habitat quality in the Action Area may be reduced with the potential introduction of invasive plant species. Additionally, any introduction of noxious weeds could lead to increased wildfire

frequency (Brooks et al. 2004). Implementation of an Invasive/Noxious Weed Control Plan would reduce or eliminate these effects.

Human activities may provide food in the form of trash or water that could increase the number of tortoise predators including the common raven, desert kit fox, feral dogs, and coyote. Facility infrastructure such as power poles associated with areal portion of the project could provide perching and nesting opportunities for ravens. Natural predation rates may be altered or increased when natural habitats are disturbed or modified. Common raven populations in some areas of the Mojave Desert have increased 1,500% from 1968 to 1988 in response to expanding human use of the desert (Boarman, 2002). Since ravens were scarce in the Mojave Desert prior to 1940, the current level of raven predation on juvenile desert tortoises is considered to be an unnatural occurrence (BLM 1990). Dogs brought to the project site by hikers or other recreational uses may impact wildlife in the area after construction has been completed.

In conclusion, the indirect effects of the proposed project are not likely to be a continual stressor on the reproductive health and population of desert tortoises in the action area.

G. CUMULATIVE EFFECTS

Cumulative effects are effects resulting from future state or private activities, not involving federal activities, which are reasonably certain to occur within the action area of the federal action subject to consultation.

H. CONCLUSION

After reviewing the current status of the desert tortoise, the environmental baseline for the action area, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the project, as proposed and analyzed, is not likely to jeopardize the continued existence of the federally threatened Mojave desert tortoise, and is not likely to adversely modify designated critical habitat.

The Service's conclusion of no jeopardy and no adverse modification of critical habitat is based on the following:

1. The 12.5 acres of disturbance to desert tortoise habitat would not affect a large number of tortoises or substantially reduce the amount of rangewide habitat available to the species.
2. Measures have been proposed by Reclamation to minimize any effects of the proposed action to the desert tortoise.
3. The proposed project would not result in a level of take of desert tortoise that would significantly affect the rangewide number, distribution, or reproduction of the species; desert tortoises that are taken by non-lethal means as a result of the project are anticipated to remain in the wild with no long-term effects. The project would not affect desert tortoise critical habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, as amended, prohibits take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR § 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant. Under the terms of sections 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the Terms and Conditions of this Incidental Take Statement.

The measures described below are nondiscretionary, and must be implemented by Reclamation so that they become binding conditions of any project, contract, grant, or permit issued by Reclamation, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Service's evaluation of the effects of the proposed actions includes consideration of the measures developed by Reclamation to minimize the adverse effects of the proposed action on the desert tortoise.

Reclamation has a continuing duty to regulate the activity that is covered by this Incidental Take Statement. If Reclamation fails to adhere to the Terms and Conditions of the Incidental Take Statement through enforceable terms that are added to permits or grant documents, and/or fails to retain oversight to ensure compliance with these Terms and Conditions, the protective coverage of section 7(o)(2) may lapse.

A. AMOUNT OR EXTENT OF TAKE ANTICIPATED

Based on the scope of the proposed action, the desert tortoise survey data, analysis of impacts provided above, measures proposed by Reclamation, and the anticipated project duration, the Service anticipates that the following take could occur as a result of the proposed action:

1. We are not exempting take in the form of kill or injury for adult tortoises (greater 160 millimeters in length) or juvenile tortoises.
2. Because many variables determine the number of desert tortoises that may occur in harm's way and require capture and relocation, we are not establishing a numeric limit for the number of tortoises captured and moved up to 500 meters. We estimate that no more than 2 desert tortoises will be encountered and require capture and movement from harm's way.
3. No desert tortoise nests or eggs are anticipated to be disturbed as a result of project activities.

B. EFFECT OF TAKE

In the accompanying biological opinion, the Service has determined that this level of anticipated take will not jeopardize the continued existence of the desert tortoise.

C. REASONABLE AND PRUDENT MEASURES WITH TERMS AND CONDITIONS

The Service believes that the following Reasonable and Prudent Measures (RPMs) are necessary and appropriate to minimize take of desert tortoise. In order to be exempt from the prohibitions of section 9 of the Act, Reclamation must ensure full compliance with the Terms and Conditions provided below, which implement the RPMs.

In addition to the proposed measures to minimize take provided in the *Description of the Proposed Action* section, Reclamation shall implement the RPMs and Terms and Conditions stated below. These RPMs and implementing Terms and Conditions either clarify the proposed measures in the *Description of the Proposed Action* or include reporting requirements that assure adequate action agency oversight of any incidental take [50 CFR §402.14(i)(1)(iv) and (i)(3)].

RPM 1: *Reclamation shall ensure implementation of measures to minimize loss or long-term degradation of desert tortoise habitat.*

Term and Condition:

1. *Loss of habitat* – Reclamation shall collect remuneration fees to offset residual impacts to desert tortoises from project-related loss of 12.5 acres of desert tortoise habitat.

Remuneration fees will be used for management actions expected to promote recovery of the desert tortoise over time, including management and recovery of desert tortoise in Nevada. Actions may involve habitat acquisition, population or habitat enhancement, increasing knowledge of the species' biological requirements, reducing loss of individual animals, documenting the species status and trend, and preserving distinct population attributes. Fees will be used to fund the highest priority recovery actions for desert tortoises in Nevada.

The current base rate is \$867 per acre of disturbance, as indexed for inflation, effective March 1, 2017. The next adjustment will become effective March 1, 2018. The fee rate will be indexed for inflation based on the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U) on January 31st of each year, becoming effective March 1st. Fees assessed or collected for projects covered under this biological opinion will be adjusted based on the current CPI-U for the year they are collected. Information on the CPI-U can be found on the internet at: <http://www.bls.gov/cpi/news.htm>.

RPM 2: *Reclamation shall ensure implementation of measures to ensure compliance with the RPMs, Terms and Conditions, reporting requirements, and reinitiation requirements contained in this biological opinion.*

Terms and Conditions:

- 2.a. *Project completion* – Reclamation shall ensure that a report documenting desert tortoise encounters, incidental take (including capture and relocation), and effectiveness and compliance with the desert tortoise protection measures is prepared and submitted to the Service’s Southern Nevada Fish and Wildlife Office in Las Vegas within 60 days of completion of construction of the project.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

We do not offer any conservation recommendations at this time.

REINITIATION REQUIREMENTS

This concludes formal consultation on the actions outlined in your request received January 23, 2017. As required by 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over an action has been retained (or is authorized by law) and if: (1) The amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

LITERATURE CITED

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SECTION 7 FEE PAYMENT INSTRUCTIONS

Procedure for Making Payments into the National Fish and Wildlife Foundation Account Mojave Desert Tortoise Sub-account

There are currently (June 2015) two sub-accounts: one for the Mojave desert tortoise and the other is for the Moapa dace. Each sub-account has its own form. The form for the Mojave desert tortoise sub-account form is included below. Information in this document pertains to desert tortoise section 7 fees.

The Mojave desert sub-account applies towards non-BLM actions that are associated with a Biological Opinion and habitat disturbance fees proposed by the Federal agency. Payment of fees for BLM actions are made directly to BLM- not into this sub-account.

The following steps should be followed by Service staff preparing Biological Opinions that involve fees.

1. Use the template language below in the Biological Opinion. Attach the form entitled, *Southern Nevada Mitigation and Conservation Account, Mojave Desert Tortoise Sub-account Deposit Document* to the Biological Opinion. The Applicant or Project Proponent shall complete the relevant information on the form. Additional instructions are provided at the beginning of the form.
2. The Applicant or Project Proponent shall send the form to our office in accordance with the language provided below.
3. The staff assigned for the Biological Opinion will coordinate review/approval by the Field Supervisor.
4. Once approved, responsible staff will scan the form and email it to NFWF contacts identified below. The Applicant and Federal agency will be notified that the form has been approved and instructed to coordinate with NFWF on submitting payment as described below.

Language to Include in Biological Opinions that Involve Fees to be paid into NFWF Account

The Applicant/Project Proponent shall pay remuneration fees to offset residual impacts to desert tortoises from project- related disturbance to desert tortoise habitat. Remuneration fees will be used for management actions expected to promote recovery of the desert tortoise over time, including management and recovery of desert tortoise in Nevada. Actions may involve habitat acquisition, population or habitat enhancement, increasing knowledge of the species' biological requirements, reducing loss of individual animals, documenting the species status and trend, and preserving distinct population attributes. Fees will be used to fund the highest priority recovery actions for desert tortoises in Nevada.

The current base rate is \$867 per acre of disturbance, as indexed for inflation, effective March 1, 2017. The next adjustment will become effective March 1, 2018. The fee rate will be indexed for inflation based on the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U) on January 31st of each year, becoming effective March 1st. Fees assessed

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or collected for projects covered under this biological opinion will be adjusted based on the current CPI-U for the year they are collected. Information on the CPI-U can be found on the internet at: <http://stats.bls.gov/news.release/cpi.nws.htm>.

The Applicant/Project Proponent shall complete the attached form and submit it to the Service's Southern Nevada Fish and Wildlife office, by one of the methods below.

Email: Email the Service representation identified in the cover letter/memo to your biological opinion.

Postal Mail: Field Supervisor
Southern Nevada Fish and Wildlife Office
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130

Once received and approved by the Service, the Applicant will be notified. Following notification, the Applicant will coordinate actual payment with NFWF through:

Jana Doi (Jana.Doi@NFWF.ORG)
cc: Anne Butterfield (Anne.Butterfield@NFWF.ORG).

**SOUTHERN NEVADA MITIGATION AND CONSERVATION ACCOUNT
MOJAVE DESERT TORTOISE SUB-ACCOUNT DEPOSIT DOCUMENT**

The applicable Action Agency is responsible for completing this form and submitting it to USFWS for review and approval. The USFWS Agency Representative for the Mojave Desert Tortoise Sub-Account is responsible for submitting the approved deposit document to NFWF when a project proponent is prepared to deposit funds with NFWF. The deposits identified in the deposit document will be made by the project proponent to NFWF directly.

Project Name: Hoover Fiber Optic Trail Project

Biological Opinion Number and Date: _____

Project Phase: *(if applicable)* _____

Project Location: *(i.e. County)* _____

Land Ownership of Project Site: *(if publicly owned, identify the applicable government entity)*

Project Proponent: _____

Action Agency (check if applicable) and Decision Documents: *(identify by name, date, and identification #)*

Federal Highway Administration
 Decision Document Attached
Project Identification or Tracking #: _____

National Park Service
 Decision Document Attached
Project Identification or Tracking #: _____

Western Area Power Administration
 Decision Document Attached
Project Identification or Tracking #: _____

U.S. Army Corps of Engineers
 Decision Document Attached
Project Identification or Tracking #: _____

U.S. Bureau of Reclamation
 Decision Document Attached
Project Identification or Tracking #: _____

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Nellis Air Force Base
 Decision Document Attached
Project Identification or Tracking #: _____

U.S. Bureau of Indian Affairs
 Decision Document Attached
Project Identification or Tracking #: _____

Other (Specify)
 Decision Document Attached
Project Identification or Tracking #: _____

Monies Required for Deposit: \$ 10,837.50

Deposit Document:

Prepared and Submitted to USFWS by Action Agency

Name: _____
Title: _____
Phone: _____
Email: _____
Signed: _____
Date: _____

Approved and Submitted to NFWF by USFWS

Name: Glen W. Knowles
Title: Field Supervisor
Phone: (702) 515-5244
Email: glen_knowles@fws.gov
Signed: _____
Date: _____

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ATTACHMENT A. DESERT TORTOISE HANDLING AND TAKE REPORT

If a desert tortoise is killed or injured, immediately contact the U.S. Fish and Wildlife Service and Reclamation, by phone at the numbers below and complete Section I of the form.

Completed forms should be submitted to the Fish and Wildlife Service and Reclamation:

U.S. Fish and Wildlife Service
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130
702-515-5230

U.S. Bureau of Reclamation
Lower Colorado Regional Office
P.O. Box 61470
Boulder City, Nevada 89006-1470
702-293-8258

Project Name:	Report Date:
Fish and Wildlife Service File No.-	
Authorized Desert Tortoise Biologist: _____ Employed by: _____	
Section 1: Complete all information below if a desert tortoise is injured or killed in addition to initial contact described above.	
If tortoise was injured <input type="checkbox"/> or killed <input type="checkbox"/> (check appropriate box):	
Date and time found: _____ Found by: _____ GPS location (NAD 83): easting: _____ northing: _____ No. of photos taken: _____ Disposition: _____ _____ _____	
Attach report with photos that describe in detail, the circumstances and potential cause of injury or mortality. For injuries include name of veterinarian and detailed assessment of injuries.	

Section 2: Complete all information below for each desert tortoise handled.

All instances of desert tortoise handling must be reported in this section and be included in the quarterly, annual, and final project reports.

Desert tortoise number: _____

Date and time found: _____ Sex of tortoise: _____

Air temperature when found: _____ Air temperature when released: _____

Tortoise activity when found: _____

Handled by: _____ Approx. carapace length _____

GPS location (NAD 83) found: easting: _____ northing: _____

GPS location released: easting: _____ northing: _____

Approximate distance moved: _____

Did tortoise void bladder; if so state approximate volume and actions taken:

Post handling or movement monitoring and observations:
