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Environmental Assessment
for
Red Rock Canyon National Conservation Area
Proposed Scenic Loop Drive and Parking Areas Improvements Project

August 2015

Preparing Office

Red Rock/Sloan Field Office

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Red Rock Canyon National Conservation Area Proposed Scenic Loop Drive and Parking Areas Improvements Project

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- Visual Resources Technical Analysis
- Response to Public Comments

Abbreviations and Acronyms

°C	degrees Celsius
°F	degrees Fahrenheit
<	less than
BLM	U.S. Bureau of Land Management
BMP	best management practice
BSC	Biological Soil Crusts
CFLHD	Central Federal Lands Highway Division
CFR	<i>Code of Federal Regulations</i>
DAQ	Department of Air Quality
DR	Decision Record
EA	Environmental Assessment
EIS	environmental impact statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMU	fire management unit
FONSI	Finding of No Significant Impact
FRCC	fire regime conditions class
GAP	Gap Analysis Program
GHG	greenhouse gas
HMA	Red Rock Herd Management Area
LVCVA	Las Vegas Convention & Visitors Authority
LVMPA	Las Vegas-Henderson-Paradise Metropolitan Area
MBTA	Migratory Bird Treaty Act
MM	mile marker
NAAQS	National Ambient Air Quality Standards
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NISC	National Invasive Species Council
NLCS	National Landscape Conservation System
NVSDO	Nevada State Demographer's Office
PM ₁₀	particulate matter of 10 microns or less
RMP	Resource Management Plan
ROD	Record of Decision

ROW	right-of-way
RRCNCA	Red Rock Canyon National Conservation Area
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SR	state route
SWPPP	Storm Water Pollution Prevention Plan
T&E	threatened and endangered
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	Visual Resources Management
WSA	Wilderness Study Area

1.0 Introduction

This Environmental Assessment (EA) evaluates the U.S. Bureau of Land Management (BLM) proposal for the roadway safety and parking area improvements within the Red Rock Canyon National Conservation Area (RRCNCA). If approved, the RRCNCA Proposed Scenic Loop Drive and Parking Areas Improvements Project (the Project) would be built as a phased construction project.

The BLM, in partnership with the Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), an interdisciplinary team, developed the proposed roadway safety and parking improvements within the Core Area of the RRCNCA evaluated in this EA. Section 6, List of Preparers, identifies the consultants and agency staff who worked as part of this interdisciplinary team.

This EA presents the environmental impacts and mitigation for the construction, operation, and maintenance of the Proposed Action and alternatives, including the no-action alternative. The Field Office Manager will first determine whether an environmental impact statement (EIS) is required based on the significance of environmental effects (40 *Code of Federal Regulations* [CFR] 1509.9) documented in this site-specific EA. If no significant effects are anticipated, a Finding of No Significant Impact (FONSI) will be issued and a Decision Record (DR) will be prepared. The DR will document the decision regarding the action for which the EA was completed and will specify which alternative is selected for implementation.

1.1 Identifying Information

1.1.1 Title, Environmental Assessment Number, and Type of Project

- Red Rock Canyon National Conservation Area Proposed Scenic Loop Drive and Parking Areas Improvements Project
- BLM Project Number: DOI-BLM-NV-S020-2015-0002-EA
- CFLHD Project Number: NV BLM 10(1)
- Road and parking areas improvement project

1.1.2 Location of Project

Red Rock Canyon National Conservation Area
Las Vegas, Nevada
Mount Diablo Prime Meridian

Table 1. Project Location

Project Element	Section	Township	Range
New Return Route Alignment from Sandstone Quarry to Visitor Center	1,2,12	21 S	58 E
Parking Improvement Areas:			
Fee Station Kiosk	7	21 S	59 E
	12	21 S	58 E
Calico 1	1	21 S	58 E
Calico 2	1	21 S	58 E
Sandstone Quarry	35	20 S	58 E
High Point Overlook	34	20 S	58 E
White Rock Trailhead	33	20 S	58 E
White Rock Equestrian Parking	34	20 S	58 E
Lost Creek Canyon	4	20 S	58 E
Willow Springs	33	20 S	58 E
Ice Box Canyon	4	21 S	58 E
Red Rock Wash Overlook	10	21 S	58 E
Pine Creek Canyon	15	21 S	58 E
Scenic Loop Drive Pavement Rehabilitation			
Visitor Center to Sandstone Quarry (full rehab)	1,12	21 S	58 E
	35	20 S	58 E
Sandstone Quarry to RRCNCA exit at SR 159 (partial rehab)	33-35	20 S	58 E
	2-4,10,14,15,23	21 S	58 E
Traffic Control and Signage			
Signage along Scenic Loop Drive	33-35	20 S	58 E
	1-4,10,12,13 14,15,22,23	21 S	58 E
Signage and striping (bike lane) along SR 159	3-5,7,8	21 S	59 E
Improvements to Secondary Roads			
White Rock Road and Oak Creek Road	34	20 S	58 E
	14,22	21 S	58 E
Moenkopi Road	8,9	21 S	59 E
Rocky Gap Road	4	21 S	58 E
	32,33	20 S	58 E

Note: SR = state route

1.1.3 Name and Location of Preparing Office

U.S. Bureau of Land Management
Red Rock/Sloan Field Office
4701 N Torrey Pines Drive
Las Vegas, NV 89130

1.2 Background

The BLM Red Rock/Sloan Field Office is responsible for managing RRCNCA. RRCNCA was designated a National Conservation Area for its unique and nationally important geological, archaeological, ecological, cultural, scenic, scientific, wildlife, riparian, wilderness, endangered species, and recreation resources. RRCNCA is approximately 198,000 acres and is located 15 miles west of Las Vegas, Nevada (see Figure 1 in Appendix A). RRCNCA amenities include a 13-mile scenic drive; more than 60 miles of multi-use trails for hiking, horseback riding, and mountain biking; road biking and rock climbing opportunities; picnic areas; a campground; and a visitor center with exhibits and a gift store.

When the original RRCNCA Visitor Center opened in 1982, the area experienced approximately 20,000 annual visitors. Today, RRCNCA is visited by over one million people annually. One of the most visited areas of RRCNCA is the Scenic Loop Drive.

1.3 Purpose and Need for Action

The purpose of the Project is to (1) improve traffic flow and safety for vehicles, bicyclists, equestrians, and pedestrians, (2) reduce operations and maintenance costs, (3) protect and conserve the resources, and (4) improve visitor experience in the RRCNCA.

During peak visitation in the spring, fall, and winter—and especially on holiday weekends—the parking areas adjacent to Scenic Loop Drive often exceed their functional capacity, resulting in visitors parking on Scenic Loop Drive or in vegetated areas adjacent to the roadway. Parking in undesignated areas creates several problems at RRCNCA, specifically congestion and potential safety issues for visitors along the road. Parking in undesignated areas impedes traffic flow on the road during high visitation periods, decreasing visibility and mobility for motorists, pedestrians, and bicyclists. In addition, parking in undesignated areas can also result in both direct impacts to soils, vegetation, and habitat, and indirect impacts from passengers exiting the vehicles and hiking through vegetated areas not designated as trails.

Inadequate parking also impacts the overall visitor experience as visitors are required to spend more time looking for parking, limiting visitor access to amenities at parking lots over capacity, and creating potential visual and noise impacts outside of designated parking areas. Existing signage on Scenic Loop Drive prohibiting parking both on Scenic Loop Drive and in the adjacent vegetated areas is inadequate. The layout of the parking areas is also confusing and results in poor circulation and conflicts between vehicles, bicyclists, and pedestrians.

The existing pavement condition of Scenic Loop Drive and secondary roadways is below average, resulting in increased maintenance costs. The pavement distress is manifested in sections of block cracking and stripping. In some locations, edge-deterioration longitudinal cracking makes it difficult for bicyclists to maneuver. In addition, the secondary roads adjacent to Scenic Loop Drive, specifically White Rock Road and Oak Creek Road, are unpaved and require frequent regrading.

In addition, many of the signs and pavement markings conflict, are difficult to read, or simply do not provide the information visitors need to safely and confidently navigate the area.

1.4 Decision to Be Made

The BLM is responsible for managing the resource and is, thereby, the decision maker on the Proposed Action. The decision the BLM will make will be to decide whether or not to construct the proposed improvements.

This site-specific EA, as required by the National Environmental Policy Act (NEPA), provides the analytical framework for the BLM to evaluate cumulative impacts on public land resources and make an informed and documented decision.

The impacts from ground-disturbing activities can be reduced to a level of “not significant” provided that measures are undertaken to minimize and mitigate effects associated with construction and maintenance.

1.5 Scoping and Public Involvement

To determine the scope of environmental documentation and analysis required for this Project, a series of meetings were held in 2014 and 2015 with BLM and FHWA resource specialists. These meetings identified the affected resources and potential problems within the Project area, and determined what field surveys, plan reviews, analysis, and documentation would be needed before a formal decision could be made.

Table 4 includes the resource areas identified for further analysis in this EA.

Public comment and review will be considered throughout the development of this EA and reflected in the final decision. In addition to the December 10, 2014 public meeting, the Project was initially introduced to the public during the public hearings for Low Water Crossings and Roads Improvements Project (DOI-BLM-NV-S020-2014-0007-EA) in June of 2014. A public hearing was held June 30, 2015 to coincide with the 30-day public review and comment period, in accordance with 40 CFR §1506.6(b). Comments received during the 30-day public review period are included in Appendix B.

2.0 Proposed Action and Alternatives

The BLM, in partnership with the FHWA-CFLHD, is proposing roadway safety and parking area improvements in RRCNCA. A description of the proposed action is included below.

2.1 Summary of Proposed Action

The Project proposes improvements to several areas of RRCNCA within the vicinity of Scenic Loop Drive and includes improvements to both roadways and parking areas. Figure 1 includes the locations of each proposed Project element, which are described in detail in the following subsections. The proposed action consists of the following elements:

- A return route on a new alignment connecting Sandstone Quarry to the Visitor Center, thereby allowing visitors accessing RRCNCA amenities along the first 3 miles of Scenic Loop Drive to exit the area without having to travel the remaining 10 miles of Scenic Loop Drive.
- Twelve parking areas would be expanded or improved to better accommodate visitors.
- Pavement rehabilitation along the existing Scenic Loop Drive would consist of pulverizing the existing pavement and recycling the pulverized material for a new roadway surface.
- Signage would be added along Scenic Loop Drive to improve vehicle and bicycle movements in and out of parking areas, and to deter on-street parking. In addition, signage and bike lane striping would be added to SR 159 to better facilitate vehicle and bicycle movement from SR 159 onto Scenic Loop Drive.
- Improvements to secondary roads would include pavement rehabilitation on Moenkopi Road and Rocky Gap Road, and a paving/ditch grading/grade raise combination on White Rock Road and Oak Creek Road.

The final decision for the Proposed Action may consist of less than or a combination of the described Project elements contingent on public comment.

2.1.1 New Return Route Alignment from Sandstone Quarry to Visitor Center

A new one-way roadway would be constructed on a new alignment connecting Sandstone Quarry to the Visitor Center south of the existing Scenic Loop Drive alignment. By constructing the return route, the proposed action would reduce the traffic on Scenic Loop Drive after Sandstone Quarry, thereby providing congestion relief for visitors wishing to access the amenities in the west side of RRCNCA. Additionally, a significant number of search and rescue and emergency service activities occur in the vicinity of Calico Hills and Sandstone Quarry. This often requires closing the scenic drive, which temporarily disrupts traffic. Emergency vehicles would be able to exit on the return route instead of closing that section of Scenic Loop Drive, thereby reducing response times.

The 2.4-mile return route would consist of a 12-foot travel lane with a 4-foot inside shoulder and an 8-foot outside shoulder and would be designed with drainage improvements to maintain drainage without concentrating flows and creating turbulent conditions downstream. A left turn lane would be utilized at the north end of the route along with signage and striping to allow visitors to safely turn onto the return route off the Scenic Loop Drive as well as a stop sign at the end of the return route before vehicles proceed to the exit. In addition, the new return route would include three pull-off locations for visitors to temporarily pull off the roadway for photos. The pull-offs would be paved and signage installed designating the areas as temporary parking limited to 10 minute durations. The pull-offs would be designed to accommodate a single bus or up to three vehicles.

Cut and fill slopes would vary to match the existing terrain, but would not exceed a ratio of one-to-two. The return route would include riprap and culverts at eight locations where an alluvial channel flowing into Red Rock Wash is encountered. All fill slopes and disturbance areas would be revegetated per the restoration plan.

The estimated permanent and temporary impacts for the return route are approximately 18.29 acres and 6.59 acres, respectively. Permanent impacts would include new pavement, clearing and grubbing, riprap areas, culverts, and earthwork for cut and fill slopes. Temporary impacts would consist of construction areas, equipment staging, and access to allow for vehicle and equipment movement.

2.1.2 Parking Improvements

The proposed Project includes improvements to 12 parking areas along Scenic Loop Drive. In general, the improvements would improve safety and increase parking capacity from 331 to approximately 631 spaces. In most instances existing fencing, kiosks and other facilities at trailheads adjacent to the parking areas would be relocated or replaced. Improvements at each location are summarized in Table 2.

Table 2. Summary of Parking Areas Improvements

Parking Area	Improvement Description
Fee Station Kiosk	Expand available parking spaces from 59 to approximately 64, and open the carpool lot to the public, including a new parking area for photo taking, thereby providing a safe loop for visitors not wishing to enter the park.
Calico 1	Expand available parking spaces from 42 to approximately 167. Realign a minor segment of Scenic Loop Drive west of the current alignment and a new landscaped area between the parking area and the trailhead. A new restroom would be installed as part of the project.
Calico 2	Reconfigure the 13 available parking spaces to better utilize the lot and construct a new curb-separated bus drop-off point between Scenic Loop Drive and the existing parking area.
Sandstone Quarry	Expand available parking spaces from 72 to approximately 96. Construct a new loop for bus access and recirculation and a new pedestrian path connecting the parking area with the existing Sandstone Quarry Trailhead.
High Point Overlook	Expand available parking spaces from 18 to approximately 27. Realign access to near side of curve to improve sight distance and add fencing around the viewing area to the south of the expanded parking area.
White Rock Trailhead	The existing lot would remain unpaved but the restroom would be relocated adjacent to the trail and out of the existing traveled way to improve circulation. Available parking spaces would expand from 17 to approximately 18.
White Rock Equestrian Parking	The existing lot would be expanded and remain unpaved except for a newly paved area at the northern end of the lot to accommodate non-trailer parking. The paved portion of the lot would provide for 12 vehicle parking spaces in addition to improved circulation for trailers. The majority of the expanded lot would remain unpaved to accommodate up to six equestrian trailers. An equestrian crossing consisting of roughened asphalt and signage will be included across Scenic Loop Drive at this location. Another crossing would be constructed near the exit of Scenic Loop Drive onto SR 159.
Lost Creek Canyon	Expand available parking spaces from 27 to approximately 47 and reconfigure the parking area to allow two-way traffic. Add a raised pedestrian walk connecting the parking area, bus pullout, and the existing Lost Creek Trailhead.

Table 2. Summary of Parking Areas Improvements

Parking Area	Improvement Description
Willow Springs	Expand available parking spaces from 60 to approximately 75 spaces. The existing aggregate turnaround would be paved and a new pedestrian walk connecting the parking area with the existing Willow Springs Trailhead created.
Ice Box Canyon	Shift the existing 17 parking spaces and restroom currently located east of Scenic Loop Drive to the western side of Scenic Loop Drive, and expand the western parking area to approximately 34 parking spaces, eliminating the need for pedestrians to cross Scenic Loop Drive to access the Ice Box Canyon Trail. The existing parking area on the eastern side of Scenic Loop Drive would be removed and revegetated per the restoration plan.
Red Rock Wash Overlook	Add left turn lane from Scenic Loop Drive. The number of available spaces would remain at six.
Pine Creek Canyon	Create a new parking area with approximately 79 available spaces, a lookout platform area, and a tie-in to the existing Pine Creek Trail east of the parking area. Removal and revegetation of the existing gravel pad and relocation of the restrooms.

Notes: < = less than

The estimated permanent and temporary impacts for the parking area improvements are identified in Table 3. Cumulatively, the 12 parking areas would result in approximately 6.55 acres of permanent disturbance and 2.12 acre of temporary disturbance. Permanent impacts would include new pavement, walkways, clearing and grubbing, riprap areas, and earthwork areas for cut and fill slopes. Temporary impacts would consist of construction areas, equipment staging, and access to allow for vehicle and equipment movement.

Table 3. Parking Improvement Area Impacts

Parking Area	Permanent Impact (acre)	Temporary Impact (acre)
Fee Station Kiosk	0.06	0
Calico 1	2.40	0.56
Calico 2	0.06	0.08
Sandstone Quarry	0.56	0.23
High Point Overlook	0.10	0.11
White Rock Trailhead	0.04	0.01
White Rock Equestrian Parking	0.75	0.15
Lost Creek Canyon	0.31	0.16
Willow Springs	0.79	0.43
Ice Box Canyon	0.38	0.13
Red Rock Wash Overlook	0	0
Pine Creek Canyon	1.10	0.26
Totals	6.55	2.12

2.1.3 Pavement Rehabilitation along Scenic Loop Drive

Pavement rehabilitation along the existing Scenic Loop Drive would be divided into two segments, the first extending from the Visitor Center to Sandstone Quarry and the second from Sandstone Quarry to the Scenic Loop Drive terminus at its intersection with SR 159. The first segment would consist of approximately 3 miles of full pavement rehab and would include the pulverization of the existing aggregate to a depth of 4.0 inches followed by a 3.5-inch hot asphalt concrete pavement overlay; as a result no net increase or decrease in the roadway elevation is anticipated. The second segment would consist of approximately 10 miles of partial rehab from Sandstone Quarry to SR 159, and would include the pulverization of the existing aggregate to a depth of 4.0 inches followed by a 2.5-inch hot asphalt concrete pavement overlay; similar to the full rehab section, no net increase or decrease in the roadway elevation is anticipated.

The 1-inch difference in overlay depth between the two segments of Scenic Loop Drive is a result of constructing the new return route. Calico 1, Calico 2, and Sandstone Quarry are, in addition to Pine Creek Canyon and Ice Box Canyon, three of the most used parking areas along Scenic Loop Drive. The return route would enable vehicles, pedestrians, and bicyclists to exit the area without traveling the additional 10 miles of Scenic Loop Drive. The return route would reduce the usage on the remaining 10 miles of Scenic Loop Drive after Sandstone Quarry, thereby reducing the need for a deep overlay and creating the opportunity to match pavement depth with usage.

Work required for the pavement rehabilitation on both segments of Scenic Loop Drive would be completed within the existing roadway prism. The pavement rehabilitation would not require any roadway widening, ditching, or grading beyond the hinge point. As a result, no temporary or permanent impacts are anticipated. Vehicular, bicycle, and pedestrian movement along Scenic Loop Drive and the parking areas would be maintained throughout construction via keeping one side open while the other side is being rehabilitated.

2.1.4 Traffic Control and Signage

The Project would include the removal, relocation, and the addition of signage along the entire 13-mile length of Scenic Loop Drive and the portion of SR 159 extending from mile marker (MM) 2.4 westward to MM 7.6. This segment of SR 159 encompasses the sole access to Scenic Loop Drive from SR 159. Extending along SR 159 from the RRCNCA entrance approximately 500 feet east, new striping would be added for bicyclists entering RRCNCA and bicyclists continuing on SR 159; the right-turn-only striping for vehicles entering RRCNCA from westbound SR 159 would remain. The SR 159 signage plan developed for the Project includes four sign removals and five sign additions. The added signs along SR 159 would better facilitate the movement of vehicles and bicyclists by providing the appropriate visual cues at the appropriate distances for amenities adjacent to the roadway. These amenities include the BLM fire station, RRCNCA entrance, Calico Basin (accessed via Calico Basin Road), and the Red Rock Canyon Campground accessed via Moenkopi Road.

Along the 13-mile Scenic Loop Drive and adjacent parking areas, Project signage changes would include the replacement of nearly all existing signs with additional signs installed to better facilitate the movement of vehicles and bicyclists. The majority of existing signs identified for replacement consist of No Parking, Do Not Enter, Crosswalk, and other directional signs which are not effective in their current locations.

Currently, roadside parking is allowed along Scenic Loop Drive and visitors will often pull onto the adjacent vegetated areas to park when existing parking lots are full. In addition to the direct loss of vegetation from vehicles and safety conflicts with parks users, roadside parking has also led to the formation of unauthorized social trails. New signage would be designed to better facilitate the movement and safe use of the roadway by vehicles, bicycles, and pedestrians along Scenic Loop Drive, and travel in and out of the expanded parking areas. 'No Parking' signs would be added to prohibit on-street parking along Scenic Loop Drive. The new signage would not only reinforce that parking would only be permitted in designated areas and help to

offset ground disturbance resulting from the parking area improvements described in Section 2.1.2, but would also remind vehicles, bicycles, and pedestrians to share the roadway. To minimize any new visual impacts created by the Project, the signage on Scenic Loop Drive would not be accompanied by new striping. The removal and replacement of signage along SR 159 and Scenic Loop Drive is not anticipated to result in permanent or temporary impacts as the signs would be installed adjacent to the roadway in existing disturbed areas. The bike-lane striping on SR 159 at the RRCNCA entrance would occur on the existing pavement and is not anticipated to result in any permanent or temporary impacts. In addition, shared lane bicycle signs (sharrows) would be installed at the entrance to the Scenic Loop Drive as well as the entrance to the return route. An equestrian crossing consisting of roughened asphalt and signage will be included across Scenic Loop Drive near the White Rock Road equestrian lot, and another crossing would be constructed near the exit of Scenic Loop Drive onto SR 159.

2.1.5 Improvements to Secondary Roads

Improvements to secondary roads would be made on White Rock Road, Oak Creek Road, Moenkopi Road, and Rocky Gap Road. Three of the four secondary roads (that is, excluding Moenkopi Road, which is accessed via SR 159) are accessed directly from Scenic Loop Drive after passing through the Fee Station Kiosk. White Rock Road and Oak Creek Road are currently unpaved with gravel aggregate surfaces; Rocky Gap Road and Moenkopi Road are paved with asphalt.

Improvements to White Rock Road and Oak Creek Road (approximately 0.5 miles for White Rock Road and 0.7 miles for Oak Creek Road) include a roadway grade raise and roadside ditching to drain the roadway surface. Slopes on both sides of the roadways would be graded to a one-to-three ratio and extend into a triangular roadside ditch to convey stormwater.

Improvements to Moenkopi Road would include approximately 1.2 miles of pavement rehabilitation extending from the SR 159 intersection southeast to the end of the existing pavement. The existing turnout, located approximately 0.3 miles south of the Moenkopi Road/SR 159 intersection, would be paved to match the rehabilitated roadway. Pavement rehabilitation would include the pulverization of the existing roadway surface to a depth of 4.0 inches followed by a 3.5-inch hot asphalt concrete pavement overlay; no net increase or decrease in the roadway elevation is anticipated.

Rocky Gap Road would be rehabilitated to match the second segment of the Scenic Loop Drive rehabilitated pavement, including pulverization of the existing aggregate to a depth of 4.0 inches followed by an approximate 2.5-inch hot asphalt concrete pavement overlay.

Permanent impacts would include new pavement, clearing and grubbing, riprap areas, culverts, and earthwork for cut and fill slopes. Temporary impacts would consist of construction areas, equipment staging, and access to allow for vehicle and equipment movement. The improvements on White Rock Road would result in approximately 0.74 acres and 0.62 acres of permanent and temporary disturbance, respectively. The improvements on Oak Creek Road would result in approximately 1.02 acres and 0.84 acres of permanent and temporary disturbance, respectively. Because the work would be completed within the existing roadway prism, no temporary or permanent impacts are anticipated as a result of the paving rehabilitation on Moenkopi Road and Rocky Gap Road. Traffic would be maintained on all secondary roads throughout construction. Traffic control would be required to facilitate the safe movement of vehicles, bicyclists, and pedestrians around construction crews and equipment.

2.1.6 Maintenance

Maintenance activities are included in this EA and would be limited to the disturbance areas identified in the proposed action. Anticipated maintenance activities include, but are not limited to: removal of rock and debris from the roadway; removal of sediment and debris from culverts; cleaning ditches; resealing or resurfacing pavements; repairing potholes; sealing cracks in asphalt and concrete; routine grading to

maintain roadway shoulders, cut and fill slopes, and removal of invasive vegetation; replacing damaged railing; restriping; replacing signs; graffiti removal; repainting bridges; and servicing flood sensors. Maintenance activities would adhere to the same environmental commitments, stipulations, and mitigations as outlined for the proposed action. Maintenance equipment would be similar to that used for construction.

Preventive maintenance would be done throughout the year, or as required by material suppliers and equipment manufacturers. Supplemental maintenance may also be done more frequently if requested, or in response to a significant storm event, accident, vandalism, or other such unforeseeable event. Maintenance would occur during the day, beginning a half hour before sunrise and ending a half hour after sunset. On occasion, maintenance work may be done at night.

2.2 Construction Staging and Schedule

It is anticipated that construction would begin in December 2015 and be completed by December 2016. Most construction would occur during the day, although some work may occur at night.

Traffic control would be required to facilitate the safe movements of vehicles, bicycles, and pedestrians around construction crews and equipment. Traffic would be maintained on Scenic Loop Drive and all secondary roads throughout construction. Traffic control would be required to facilitate the safe movement of vehicles, bicyclists, and pedestrians around construction crews and equipment.

Equipment and material staging would be located near the construction site(s) in previously disturbed areas. Although specific areas have not been identified at this time, staging and storage areas would likely include a portion of the parking lots at the Fee Station and at the exit of the Scenic Loop Drive. Typical heavy equipment used in road construction would be used, such as the following: bulldozer, hoe ram, drill rig, grader, front-end loader, backhoe, dump trucks, cement trucks, vibrating compactor, water truck, paving machine, road sweeper, portable generators, and mast lighting.

2.3 Construction Activities and Measures to Avoid Environmental Impacts

The environmental commitments and stipulations in the following subsections would be used to avoid or minimize impacts to resources as a result of the proposed Project.

2.3.1 Air Resources

- The proposed action will comply with the Clark County Department of Air Quality (DAQ) regulations for construction, and all necessary permits will be acquired before work begins. Emission reduction and mitigation measures, in accordance with the dust control permit, will be stipulated as part of the permit process. Fugitive dust from soil disturbing activities will be minor and will be reduced in accordance with all dust control permit stipulations, for the duration of the Project.
- All heavy equipment used during the construction phase will be in compliance with smog-control regulations and will meet all state-required emissions standards for the construction industry.
- Best management practices (BMPs) to mitigate fugitive emissions from the Project site will be implemented and enforced during work and non-work hours, including weekends.

2.3.2 Cultural Resources

- In the event of a cultural, historical, archaeological, or paleontological discovery, the BLM archaeologist will be notified immediately and the area where the discovery is located will be avoided until the BLM responds.

2.3.3 Fish and Wildlife Excluding Federally Listed Species

- Any Gila monster encounters during project construction must be reported immediately to the Nevada Division of Wildlife (NDOW) at (702) 486-5127.
- Live Gila monsters found in harm's way on the construction site will be captured and detained in a cool, shaded environment ($\leq 85^{\circ}\text{F}$) by the project biologist trained in handling venomous reptiles until a NDOW biologist can arrive for documentation purposes. A clean 5-gallon plastic bucket w/ a secure, ventilated lid; an 18"x 18"x 4" plastic box w/ 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, and circumstances (e.g., biological survey or construction) and habitat description (vegetation, slope, aspect, substrate) will 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 will not be covered by NDOW. However, NDOW will be immediately notified during normal business hours. If an animal is killed or found dead, the carcass will be immediately frozen and transferred to NDOW with a complete written description of situation circumstances, habitat, and mapped location.
- Should NDOW be delayed to assist, 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, a camera will be used to take good quality photographs of the Gila monster in situ at the location of live encounter or dead salvage. The pictures will be provided to NDOW and will include:
 - Encounter location (landscape overview with Gila monster in clear view)
 - A clear overhead shot of the entire body with a ruler next to it for scale (Gila monster should fill camera's field of view)
 - A clear, overhead close-up of the head (head should fill camera's field of view).

2.3.4 Fuels/Fire Management

- The Project will comply with fire restrictions current at the time of Project implementation. Fire restrictions are typically in place from approximately May 15 through October 15, though dates can vary from year to year.
- The project will comply with standard BLM fire prevention measures and BMPs during construction.
- Specific, non-compliant activities may be waived on a case-by-case basis by a BLM line officer after review and approval by the BLM Fire Management Officer.

2.3.5 Geology / Mineral Resources/Energy Production

- If excavation that produces mineral materials within the area is necessary, the mineral materials must be used within the Project area or stockpiled onsite for disposal or sale by the BLM.
- If mineral materials are to be stockpiled onsite for a future disposal or sale, specific BLM use authorization in the form of a contract, free use permit, or material site right-of-way (ROW) will be necessary before the stockpiled mineral materials can be removed from the ROW.

2.3.6 Hazardous Waste

- The contractor would immediately notify the BLM authorized officer of any release of a hazardous substance, toxic substance, or hazardous waste on or near the Project area. As required by law, the

contractor would have responsibility for and will take all action(s) necessary to fully remediate and address the hazardous substance(s) on or emanating from the Project area, in the event of a release of any size or quantity.

- In the event of a release of a hazardous substance as a result of Project operations, regardless of the quantity released, the contractor must comply with all applicable, federal, state, and local laws, regulations, and BLM policy, including reporting requirements, when handling, reporting, containing, cleaning, removing and disposal of a released substance(s).
- General construction site waste shall be stored and secured so that it does not blow away. The worksite must be in compliance with Occupational Safety and Health Administration and environmental regulations for construction sites. High winds are common in the Project area.

2.3.7 Hydrologic Conditions

- Disturbances to hydrologic conditions will be addressed through the implementation of Clark County BMPs and engineering design

2.3.8 Invasive Species / Noxious Weeds

- The contractor will prepare a noxious weed management plan including provisions to minimize the potential for the introduction of invasive species or noxious weeds into RRCNCA or their spread between areas in RRCNCA.

2.3.9 Recreation

- Construction activities and coordination with special recreation permits will be ongoing.

2.3.10 Socio-Economics/Recreation

- The contractor will prepare a traffic control plan that will address construction timing and other measures to minimize traffic delays during construction. Access along Scenic Loop Drive and secondary roadways will be maintained throughout construction.

2.3.11 Soils

- The contractor will implement Clark County BMPs to minimize impacts to soils. Additional potential mitigation measures include watering the site and the stabilization of disturbed surfaces after construction is completed.
- Should biological soil crusts be detected during pre-construction surveys, appropriate measures will be taken to minimize disturbance of soil crusts. Suggested measures include: (1) maintain the optimum amount of live vegetation, litter and biological crust relative to the site in order to maintain the content of organic matter, (2) defer disturbance during periods when biological crusts are more susceptible to physical disturbance when soil is very wet, (3) control the establishment and spread of invasive plants that can increase the risk of wildfire which may impact biological soil crusts.

2.3.12 Water Resources/Quality

- The contractor must use BMPs at all areas of construction to minimize transportation of sediment, or any other pollutant, from the construction area. BMPs will be identified in the Stormwater Management Plan as required by the Project's Construction Stormwater Permit.

2.3.13 Wetlands/Riparian Zones

- Fencing, interpretative signs and other control measures will be implemented to limit direct and indirect impacts to riparian areas.

2.3.14 Wild Horses and Burros

- All access gates must remain closed to keep wild burros off of SR 159. Individuals would be informed to not disturb (that is, feed, pet, or chase) wild horses and burros if encountered on or near the Project area. If workers do see any wild horses and burros, they would be advised to keep a safe distance; they are wild animals and can be unpredictable, especially during foaling and breeding season.
- If areas of surface water or puddles are created during construction activities, they must be temporarily fenced off in order to keep wild horses and burros from drinking potentially contaminated water.

2.3.15 Woodland/Forestry

- All healthy cactus and yucca present within the proposed disturbance footprint will be salvaged before surface disturbance and used as part of ongoing restoration and revegetation efforts in RRCNCA. If healthy cactus or yucca are encountered during construction, work in the immediate plant vicinity will stop until the plant can be relocated.

2.4 No-action Alternative

Under the no-action alternative, the proposed improvements would not occur, resulting in continued roadway maintenance costs, continued safety concerns, and a continuation of the inefficient traffic and pedestrian/bicycle circulation along Scenic Loop Drive and the adjacent parking areas and secondary roads. Visitors who wish to use the rock-climbing and hiking amenities at Sandstone Quarry would continue to be forced to travel the remaining 10-mile length of Scenic Loop Drive before exiting RRCNCA or accessing the Visitor Center. In addition, on-street parking along Scenic Loop Drive and adjacent vegetated areas would continue to create conflict points and disturb habitat. The unpaved surfaces of White Rock Road and Oak Creek Road would continue to require frequent regrading, and the poor pavement condition of Scenic Loop Drive, Rocky Gap Road, and Moenkopi Road would continue to result in increased maintenance costs.

2.5 Alternatives Considered but not Analyzed in Detail

Based on public and stakeholder input received as part of the alternatives development process, an initial range of alternatives were developed and evaluated that ultimately were not carried forward for detailed analysis in this EA. Some were beyond the scope of this project while others were dismissed as they did not meet the purpose and need of the project. In addition, environmental factors as well as cost/benefit considerations were also factored into the analysis.

Some of the alternatives that were not carried forward for detailed analysis included widening Scenic Loop Drive to allow for two way traffic from the Visitor Center to Sandstone Quarry, on street parking, roadway realignment at specific curves, pavement striping to include a bike lane, implementation of two way traffic along Scenic Loop Drive, and construction of additional parking areas. Some of these alternatives would require extensive fill or excessive areas of new disturbance, resulting in non-conformance with the BLM Visual Resource Management criteria and other environmental impacts. Similarly, other alternatives were dismissed because of the increased cost and lack of tangible benefits.

Widening Scenic Loop Drive to allow for two way traffic from the Visitor Center to Sandstone Quarry was evaluated early in the alternatives development process, but was not carried forward for detailed analysis as it would require extensive widening, fill slopes, and retaining walls to accommodate the wider cross section. In many areas, the fill slopes and retaining walls would be extensive as the roadways follows the crest of the ridge along the majority of this segment of the Scenic Loop Road. The increased disturbance would not only result in increased impacts to resources and habitats, but would also result in greater visual impacts as the roadway would require striping to safely allow for two-way traffic. In addition, as the roadway sits along the ridgeline the extensive retaining walls required to accommodate the wider cross section would also be

visible from other locations within the RRCNCA thereby also creating a visual impact. Similarly, the same visual and resource concerns would also result from creation of on street parking and implementing two-way traffic along the entire Scenic Loop Road. Delineating a bike lane through striping was also evaluated, but it was determined that the visual impacts of striping the entire Scenic Loop Drive would far outweigh any benefits that might otherwise be accomplished through better signage.

In addition to expanding the existing parking areas, creation of multiple new parking areas was also evaluated. Not only would additional parking areas result in a greater direct disturbance footprint from the lots themselves, but would also likely result in new trails, facilities, and resource impacts in areas that are already at the carrying capacity for visitor usage from existing access points. As a result, this alternative was dismissed from further consideration.

Implementation of mass transit facilities was also evaluated. With the limited funding available for this project and with higher priority concerns within the RRCNCA needing to be addressed sooner in addition to the lack of an existing transit route to the RRCNCA, it was determined that accommodations for mass transit would not be further evaluated as part of this project. It should be noted however, that although mass transit was dismissed from further evaluation at this time, the proposed action does not preclude it in the future if funding is identified.

A roundabout just north of the fee station kiosk was included in the proposed action as part of the Draft EA in an effort to improve traffic flow. Due to public concern expressed during the public comment period that the roundabout would be confusing for visitors, the roundabout was removed from the proposed action as presented in this final EA and replaced with improved signage.

As a result of this process, this initial range of alternatives was refined and screened resulting in a proposed action alternative that best fit the needs of project and would be carried forward for further analysis.

2.6 Conformance

The EA is in conformance with the BLM RRCNCA Resource Management Plan (RMP) (BLM, 2005a) approved May 20, 2005. The RRCNCA RMP discusses road paving and improvements in multiple locations. The RMP Environmental Consequences section discusses paved roads, and states, "The proposed paving projects will benefit the recreating public by providing approximately 75 additional parking spaces around the Scenic Loop Drive, reducing particulate matter in the air, providing smoother surfaces for highway design vehicles, and offering a shorter loop drive opportunity."

In addition, the Proposed Action is in conformance with the following:

- Clean Air Act of 1970 (as amended in 1977 and 1990). 42 USC 7401 et seq. PL 91-604; 42-USC 1857h-7 et seq.
- Clean Water Act of 1977 (as amended). 33 USC 1251-1387. PL 92-500.
- Endangered Species Act of 1973 (as amended). 16 USC 1531 et seq. PL 93-205.
- Executive Order 13112. 1999. Invasive Species. February 3.
- Federal Land Policy and Management Act of 1976 (43 U.S.C. §§ 1701 et seq.).
- Migratory Bird Treaty Act of 1918, as amended (16 USC 703 et seq.).
- National Environmental Policy Act of 1969 as amended. Public Law 91-190, 42 USC 4321-4347, Public Law 94-52, July 3, 1975, Public Law 94-83, August 9, 1975, and Public Law 97-258, § 4(b), Sept. 13, 1982.
- National Historic Preservation Act of 1966 as amended. 16 USC 470a et seq. 80 Stat. 915; PL 89-665.

- Federal Noxious Weed Act of 1975. Public Law 93-629. 7 USC 2801 et seq.; 88 Stat. 2148. January 3.
- Wild Free-Roaming Horses and Burros Act of 1971. PL 92-195
- Clark County Conservation of Public Land and Natural Resources Act of 2002 (Public Law 107-282).

3.0 Affected Environment

This section discusses the resources identified by BLM as necessary to reach a reasoned choice among alternatives. In designating the resources to be carried forward for analysis, environmental resources known to occur or with the potential to occur in the Proposed Action have been identified.

Table 4 summarizes (1) the environmental attributes that have been reviewed, (2) whether they would be affected by the Project, and (3) the rationale for that determination. Elements that are either not present, or are present but would not be affected, will not be discussed further. Resources that may be affected are analyzed in further detail in Sections 3 and 4 of this document. Mitigation measures are detailed to mitigate adverse impacts to resources in Section 4.20.

Table 4. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
Air Resources		X		The federal Clean Air Act of 1990 requires that air quality throughout the United States meet certain NAAQS, with respect to criteria pollutants, in order to protect the public health and the environment. The proposed action is located in a non-attainment area (does not meet the standard) for PM ₁₀ and therefore must be managed in accordance with the Clark County SIP. Fugitive emissions from construction activities are temporary in nature and would not create any lasting impacts to the environment.
Areas of Critical Environmental Concern	X			None of the Project elements are located within an Area of Critical Environmental Concern on BLM managed lands.
BLM Natural Areas			X	Creation of the approximately 57 parking spaces at Pine Creek could lead to increased disturbance. Impacts are assessed in this EA.
Cultural Resources		X		Previously determined eligible sites are located within the new return route Project Area of Potential Effect. The entire undertaking was evaluated under the new Protocol Agreement between the Nevada SHPO and BLM.
Greenhouse Gas Emissions		X		Currently there are no emission limits for suspected GHG emissions, for any element of the proposed action, and no technically defensible method for predicting potential climate changes from GHG emissions. However, there are, and would continue to be, several efforts to address GHG emissions from federal

Table 4. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
				activities, including BLM-authorized uses in future planning documents.
Environmental Justice	X			No minority or low-income communities present in or near any element of the proposed action.
Farmlands (Prime or Unique)	X			There are no prime or unique farmlands in the District.
Fish and Wildlife Excluding Federally Listed Species			X	The new return route, parking area improvements, and improvements to White Rock Road and Oak Creek Road have the potential to impact wildlife species. Impacts are assessed in this EA.
Floodplains			X	The proposed action intersects several Zone A floodplains. Impacts are assessed in this EA.
Fuels/Fire Management			X	The proposed action is expected to benefit Fuels/Fire Management. Improving traffic flow would improve ingress and egress during wildfire emergencies, increasing both visitor and firefighter safety. In addition, roads can act as fuel breaks where vegetation is managed on the road shoulder. Impacts are assessed in this EA.
Geology / Mineral Resources/Energy Production	X			All minerals are withdrawn though the NCA's legislation.
Hydrologic Conditions			X	The new return route, High Point Overlook parking improvements, and ditch grading along White Rock Road and Oak Creek Road would potentially impact the hydrologic conditions of the local hydrographic basin. Impacts are assessed in this EA.
Invasive Species/Noxious Weeds			X	Any new disturbance and construction activities have the potential to spread or introduce nonnative species. Impacts are assessed in this EA.

Table 4. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
Lands/Access			X	All facilities, including roads that are developed on the NCA must conform to RMP's decisions. Conformance is assessed in this EA.
Livestock Grazing	X			None of the Project elements are located in any authorized grazing allotments.
Migratory Birds			X	The new return route, parking areas improvements, and ditch grading along White Rock Road and Oak Creek Road have the potential to impact migratory birds. Impacts are assessed in this EA.
Native American Religious Concerns	X			Previous consultations for projects within the RRCNCA, including the development of the RRCNCA RMP, indicate that sites of Native American religious concerns are not present in the area for any of the proposed action elements.
Paleontology		X		Based on literature review and relevant maps, no paleontological resources would be affected by any of the elements of the proposed action.
Rangeland Health Standards	X			The proposed action is outside of an active grazing allotment. Four fundamentals of rangeland health are listed in Title 43 CFR § 4180.1. These include watersheds, ecological processes, water quality, and habitats. If necessary, potential impacts to these values will be evaluated as part of the vegetation, hydrology wildlife and federally listed species sections.
Recreation			X	The proposed action would improve safety for all RRCNCA users. Temporary inconveniences to recreational users and events, and some off-trail, hiking, and viewing disturbances would be expected during construction. Impacts are assessed in this EA.
Socio-Economics			X	The Project may provide short-term economic benefit in employment during construction, as well as long-term social and economic benefits for providing safe and efficient access throughout RRCNCA. During construction the proposed action would result in traffic delays

Table 4. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
				and inconveniences and areas within RRCNCA not under construction may experience an increase in use due to construction. Construction timing and traffic planning would help to minimize effects. Over the long-term, the proposed action would improve access, safety, and the recreational experience for visitors. Impacts are assessed in this EA.
Soils			X	The new return route, parking areas improvements, and ditch grading along White Rock Road and Oak Creek Road would impact local soils. The impacted areas may include desert pavement and or biological soil crust, potentially leading to increases in local erosion. Impacts are assessed in this EA.
T&E or Candidate Plant Species	X			There are no T&E or candidate plant species in any of the Project areas.
T&E or Candidate Animal Species			X	The Project has a may affect, likely to adversely affect determination for the threatened desert tortoise (<i>Gopherus agassizii</i>) and has no effect on any other federally listed species or designated critical habitat. Impacts are assessed in this EA.
Wastes (hazardous or solid)	X			While no hazardous waste concerns have been identified in the Project area, the Project description includes steps that would be taken if any release or discovery of hazardous waste would occur during construction of the proposed action.
Water Resources/Quality (drinking/surface/gr ound)			X	The new return route, parking areas improvements, and ditch grading along White Rock Road and Oak Creek Road may alter surface water runoff patterns and may cause erosion. Impacts are assessed in this EA.
Wetlands/Riparian Zones			X	A spring is located within 0.25 mile of the improvements proposed at the Lost Creek and Willow Springs parking areas. The improvements at these areas include control measures, including interpretive signage with information on trails and the spring, to limit

Table 4. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
				direct and indirect impacts to spring. Impacts are assessed in this EA.
Wild and Scenic Rivers	X			No wild and scenic rivers are located in the proposed action area.
Wilderness/ Wilderness Study Areas (WSA)			X	The proposed action includes expanding several parking areas that provide indirect access to nearby La Madre Mountain Wilderness and Rainbow Mountain Wilderness, and therefore potentially increasing usage of those wildernesses. Impacts are assessed in this EA.
Woodland / Forestry			X	Cactus and yucca are present within the project area. Cactus and yucca are considered government property and are regulated under the Nevada BLM forestry program. Impacts are assessed in this EA in Section 3.14, Vegetation.
Vegetation			X	The proposed action has the potential to impact native plant communities including creosote-bursage scrub vegetation and blackbrush scrub. Rare plant surveys have identified a population of the BLM sensitive plant species yellow two-tone beardtongue (<i>Penstemon bicolor ssp. Bicolor</i>) within the vicinity of RRCNCA. Impacts are assessed in this EA.
Visual Resources			X	The Project occurs in Visual Resource Management Classes II and III. Impacts are assessed in this EA.
Wild Horses and Burros			X	The Project is located in the Red Rock Herd Management Area. The loss of vegetation because of new disturbance resulting from the new return route, parking areas improvements, and improvements to White Rock Road and Oak Creek Road may include a loss of edible plants for the wild burros in the area. Impacts are assessed in this EA.
Lands with Wilderness Characteristics	X			There are no designated lands with wilderness characteristics in the Project area.

Notes:

GHG = greenhouse gas

Table 4. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
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NAAQS = National Ambient Air Quality Standards
 PM₁₀ = particulate matter of 10 microns or less
 SHPO = State Historic Preservation Office
 SIP = State Implementation Plan
 T&E = threatened and endangered

3.1 BLM Natural Areas

BLM Natural Areas consist of specially designated lands recognized for their pristine condition as natural ecosystems. Because of their pristine condition, Natural Areas are often used for scientific study, baseline monitoring, education, and maintenance of biological diversity. These protected areas, which are maintained in natural condition and managed with minimal human intervention, are available for non-manipulative research and low-impact educational activities.

One BLM Natural Area is located within the RRCNCA: North Fork Pine Creek Natural Area. The North Fork Pine Creek Natural Area is a relatively small area (150 acres) within the larger Rainbow Mountain Wilderness Area (approximately 24,980 acres). The North Fork Pine Creek Canyon Natural Area was designated in 1965 (Public Land Order 3530) because of the high number of rare plants, including many fern species, found in the canyon. The area is set apart exclusively for scientific study and protection of the ecological community. There are no designated trails through the Natural Area, but there are several visitor-worn hiking paths leading to popular climbing areas. The Pine Creek Natural Area is most directly accessed via the Pine Creek parking area and adjacent trailhead.

3.2 Fish and Wildlife Excluding Federally Listed Species

3.2.1 Wildlife

The RRCNCA supports a diverse community of nearly 300 wildlife species. The proposed Project area supports and is adjacent to lands that support wildlife characteristic of the Mojave Desert. Biological diversity varies according to topography, plant community, and proximity to water, soil type, and season. Many of these species have adapted complex life strategies for survival in the desert environment.

Wildlife species in the general area include small mammals, birds, reptiles, and invertebrates. Based on ecological sensitivity factors, groups of priority management concern are bats, raptors, reptiles and amphibians. The remaining RRCNCA wildlife group, carnivores and hoofed animals, represent a mix of unrelated species. Carnivores include foxes, coyotes, ringtails, badgers, bobcats, and mountain lions. The hoofed animals of the RRCNCA are mule deer, bighorn sheep, and elk.

Several common species of reptiles are represented in the surrounding habitat types. These species include the western whip-tail (*Cnemidophorus tigris*), desert iguana (*Dipsosaurus dorsalis*), side-blotched lizard (*Uta stansburniana*), and zebra-tail lizard (*Callisaurus draconoides*).

Common bird species that are represented include the rock wren (*Salpinctes obsoletus*), black-throated sparrow (*Amphispiza quinquestriata*), phainopepla (*Phainopepla nitens*), and red-tailed hawk (*Buteo jamaicensis*).

Common mammal species include the black-tailed jackrabbit (*Lepus californicus*) and the desert cottontail (*Sylvilagus audubonii*). Common Mojave Desert rodent inhabitants include cactus mice (*Peromyscus eremicus*), Merriam kangaroo rats (*Dipodomys merriami*) and species associated with rocky habitats such as the wood rat (*Neotoma lepida*).

All of these species nest, hunt, and forage, and rely on close ecological relationships to the habitat in which they live.

3.2.2 BLM Sensitive Wildlife Species

BLM sensitive species are species that require special management consideration to avoid potential future listing under the Endangered Species Act and that have been identified in accordance with procedures set forth in BLM Manual 6840, Special Status Species. Many of these species as well as other wildlife species of concern are discussed in the Nevada Department of Wildlife (NDOW) state Wildlife Action Plan (NDOW, 2012) and the Clark County Multiple Species Habitat Conservation Plan (2000). Sensitive bird species are also provided protection by the Migratory Bird Treaty Act (MBTA) and thus are discussed in Section 3.8, Migratory Birds. The sensitive species described in the following subsections could potentially be impacted by the proposed action.

3.2.2.1 Western chuckwalla (*Sauromalus obesus*)

Chuckwalla occur in rocky desert, lava flows, hillsides, talus slopes, and rock outcrops mostly below 5000 feet, where creosote bush is typically the dominant plant species. Chuckwalla will seek shelter in rock crevices and bask on rocks during the day. They are herbivorous, preferring annuals, but they will also eat perennial vegetation. Chuckwallas are relatively common throughout their Nevada range and likely occur within the Project area, but would be localized on rock outcroppings.

3.2.2.2 Desert glossy snake (*Arizona elegans*)

The desert glossy snake is a burrowing, nocturnal snake that occurs in a variety of habitats throughout the Mojave Desert including light shrubby to barren desert, grasslands, and woodlands. The desert glossy snake generally prefers open areas where the ground is sandy to loamy.

3.2.2.3 Mojave Desert Sidewinder (*Crotalus cerastes cerastes*)

The Mojave Desert sidewinder is a nocturnal snake hiding in the day in animal burrows or coiled camouflaged in a shallow self-made pit at the base of a shrub. This species is most common where there are sand hummocks topped with creosote bushes, mesquite, or other desert plants but may also occur on flats, barren dunes, hardpan, and rocky hillsides.

3.2.2.4 Mojave shovel-nosed snake (*Chionactis occipitalis occipitalis*)

The Mojave shovel-nosed snake is a burrowing, nocturnal snake frequenting washes, dunes, sandy flats, loose soil, and rocky hillsides in sandy gullies or pockets among the rocks throughout the Mojave Desert.

3.2.2.5 Banded Gila monster (*Heloderma suspectum*)

Gila monsters occur in desert washes and rocky upland desert scrub at elevations below 5000 feet. Banded Gila monsters frequently use lower slopes of mountains and nearby plains. They will use and are occasionally encountered in gentler terrain of alluvial fans. Hence, Gila monster habitat overlaps habitats of both the desert tortoise and chuckwalla. Threats to this reptile include illegal collection, traffic fatalities, and habitat destruction from urban and agricultural development.

3.2.2.6 Desert bighorn sheep (*Ovis canadensis nesloni*)

Bighorn sheep habitat preference includes open, usually treeless vegetation types with plant communities containing grasses, sedges, and forbs for foraging typically in close proximity to steep, rocky terrain for

predator escape where they exhibit remarkable agility. Moisture is primarily derived through a varied diet of desert plants; however, surface waters are a vital component of their survival and important to population health. Desert bighorn have a lengthy lambing season that can begin in December and end in June. Bighorn sheep are known to occur and there is NDOW-identified habitat within the range of proposed actions.

3.3 Floodplains

The Project area intersects Federal Emergency Management Agency (FEMA) regulated 100-year floodplains identified as Zone A, and subject to alluvial fan flooding. Alluvial fan flooding is characterized by “high velocity flows,” active processes of erosion, sediment transport, and deposition; and unpredictable flow paths” (44 CFR §59.1). The alluvial fan flows in the Project area originate from the La Madre Mountain ridge north of SR 159 and travel through the Scenic Loop Drive area in braided channels.

3.4 Fuels/Fire Management

The past several decades have seen numerous fires in RRCNCA, some of which have been caused by humans and others that were naturally started. In the immediate Project area, the Loop Fire burned 858 acres in 2005 and the Scenic Fire burned 1,611 acres in 2006; burn scars from these fires are still visible today. The Project is located within the RRCNCA fire management unit. A fuels reduction project was recently completed at RRCNCA that entailed hand herbicidal application on 4,000 acres of red brome and cheat grass to help reduce the fuel load and eliminate the invasive species.

The Mojave Desert is generally considered to not be fire adapted. Red brome and cheatgrass invasion alters fire frequency from historic regime intervals to shorter cycles of 5 years or less. Historic fires have converted areas within the Fire Management Unit (FMU) to red brome and cheatgrass dominated sites. A fire regime conditions class (FRCC) is a classification of the amount of departure from the natural regime. This classification is based on a relative measure describing the degree of departure for the natural (historical) fire regimes. FRCC 3 is a high departure from the central tendency of the natural regime, primarily because of the effects from wildfire. Over 13 percent of the acreage in the RRCNCA (Low Elevation) FMU are in FRCC 3. Past fire history reflects alteration for the majority of acreage within the FMU from natural regimes to regimes with a high departure from the natural regime indicated by the amount of FRCC 3 acres. Frequency intervals and severity should increase over time and will be influenced by areas dominated by red brome and cheatgrass (BLM, 2012).

3.5 Hydrologic Conditions (including Water Quality)

Desert washes, which are the common in the Mojave Desert region including the washes in the Project area), are braided in plain view. These washes convey flowing water only intermittently during seasonal precipitation events, are unstable, and can migrate laterally during substantial runoff events. Water in this area commonly flows into dry lakes, or as in the case of RRCNCA, detention basins. Geologically, the Project area is located on alluvial fan lobes that form large, cone-shaped, sedimentary deposits. Dry washes can also carry destructive bedloads (boulders and gravels) during rain events. The hydrologic processes that occur on alluvial fans can be random and difficult to model. Sediments, which can range from clay to large boulders, are transported across alluvial fans by water in desert washes, debris flows, and sheet floods. Flood events on alluvial fans in arid climates are triggered by significant precipitation events. Specific to the Mojave Desert region, these would include the random summer cloud bursts that occur infrequently but can supply a large amount of water to a localized area, or a larger storm such as a tropical storm that occurs on a 100-year time scale. Any of these storms could result in flooding hazards that would cause significant damage across the Project area and could potentially cause significant localized destruction, especially following a vegetation consuming wildfire.

There are no drinking water natural resources within RRCNCA. The only places where drinking water is available within RRCNCA are the Visitor Center, campground, and fire station.

3.6 Invasive Species/Noxious Weeds

Invasive plants and noxious weeds are managed on public lands by the BLM under the direction of the National Invasive Species Council (NISC) established in 1999 (Executive Order 13112). This statute defines invasive species as “...an alien (non-native) species whose introduction does, or is likely to cause, economic or environmental harm or harm to human health” (NISC, 2008). In addition, much of the management of invasive plants and the listing of noxious weeds is regulated by the U.S. Department of Agriculture under the Federal Noxious Weed Act (7 United States Code [U.S.C.] 2801 et seq., 1974).

Executive Order 13112 outlines the federal responsibility to “prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.” In addition, Nevada Revised Statutes, Chapter 555.05 defines noxious weeds and mandates the extent that land owners and land management agencies must control specific noxious weed species on lands under their jurisdiction.

Weed management in the RRCNCA is guided by the RRCNCA Resource Management Plan and Record of Decision (BLM, 2005b) as well as the Las Vegas Field Office Weed Plan (BLM, 2006). These resources provide guidance for an active integrated weed management program using BMPs.

The entire Project area has not been surveyed for the presence of invasive, non-native species. However, of the 47 species designated as noxious by the state of Nevada, the following species have been documented near the broader area of the Project: Saltcedar (*Tamarix ramosissima*), Puncturevine (*Tribulus terrestris*) Silverleaf nightshade (*Solanum elaeagnifolium*), Malta starthistle (*Centaurea melitensis*), Sahara mustard (*Brassica tournefortii*), and Giant reed (*Arundo donax*).

There are also weed species in RRCNCA that are non-native and invasive, yet have not been legally designated as noxious by the state of Nevada. Invasive weeds (that are not designated as noxious) in the Project area include (but are not limited to) red brome (*Bromus madritensis rubens*), cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola tragus*), Ripgut brome (*Bromus diandrus*), Dalisgrass (*Paspalum diatatum*), quackgrass (*Elymus repens*), Bermuda grass (*Cynodon dactylon*), Russian olive (*Elaeagnus angustifolia*), and London rocket (*Sisymbrium irio*). Invasive weeds (particularly invasive annual grasses) are known to rapidly invade disturbed areas and to drastically alter fuel loads in shrub interspaces which would otherwise be bare.

3.7 Lands/Access

RRCNCA is part of BLM’s National Conservation Lands, also known as the National Landscape Conservation System (NLCS). The BLM’s mission for the NLCS is to conserve, protect, and restore nationally significant landscapes and places that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations. The BLM’s NLCS 15-Year Strategy 2010-2025 (BLM, 2011) establishes the following goal for its National Conservation Lands:

“Facilities, including roads, will only be developed on National Conservation Lands if required for public safety, necessary for the exercise of valid existing rights, minimizing impacts to fragile resources, or further the purposes for which an area was designated.”

- Goal 1F: Manage facilities in a manner that conserves, protects, and restores NLCS values.

RRCNCA was added to the NLCS by Congress in 1990 for its unique geologic features, spectacular landscapes, world-class climbing and hiking opportunities, and habitat for plant and animal species that are

unique to the Mojave Desert. Roads within the RRCNCA are developed with the goal of providing for the access and enjoyment of visitors to experience the scenic views, open space and recreational activities unique to the area. Per NLCS policy, the construction of redundant roads or facilities that are inconsistent with federal legislation, policy, or approved management plans threaten the long-term protection of National Conservation Lands in that wildlife habitat is fragmented; air, water and noise pollution diminishes the visitor experience; and fragile cultural and historical resources are destroyed.

The RRCNCA RMP (2005a) identifies parking as a continuing problem along Scenic Loop Drive and notes that not all of the planned parking areas and overlooks were constructed as originally planned; those that were constructed were under designed. The increasing number of vehicles and vehicle/bicycle conflicts is also identified as a concern in the RMP. The need to alleviate traffic or separate vehicles and bicycles is discussed and an optional route between Sandstone Quarry and the Visitor Center is identified as a potential solution.

3.8 Migratory Birds

The MBTA (16 U.S.C. 703 et. seq.) protects migratory birds and their nests; a list of MBTA-protected birds are found in 50 CFR 10.13. The list of birds protected under this regulation is extensive and the Project site has potential to support many of these species, including BLM sensitive species, and their nests. Typically, the breeding season, which generally occurs from February 15 through August 31, is when these species are most sensitive to disturbance. The following sensitive bird species could potentially be impacted by the proposed action:

Western burrowing owl (*Athene cuniculari hypuqaea*)

The Western burrowing owl is a diurnal bird of prey specialized for grassland and shrub-steppe habitats. Burrowing owl habitat in the Mojave Desert typically consists of open, dry, treeless areas on desert floors. Burrowing owls most frequently use mammal burrows created by other animals such as ground squirrels (*Spermophilus spp.*), coyotes (*Canis latrans*), or desert tortoises (*Gopherus agassizii*). The burrows are used for nesting, roosting, cover, and caching prey. In recent decades, the range and species count have been declining primarily because of agricultural, industrial, and urban development that reduce burrow availability.

3.9 Recreation

The RRCNCA RMP establishes management direction for lands within the Project area. The Project falls within the RRCNCA's Core and Visitor Center Areas. The Core Area is the primary area for recreational use in the RRCNCA, and covers approximately 60,000 acres. Recreational activities within the Project area include picnicking, camping, hiking, cycling, rock climbing, sightseeing, horseback riding, wildlife viewing, and photography.

The RRCNCA reports over 1 million visits every year to its Visitor Center. The area serves local residents, as well as visitors who come to the RRCNCA in conjunction with stays in Las Vegas. The Red Rock Canyon Scenic Loop Drive is a BLM National Scenic Backcountry Byway and traverses approximately 13 miles of the RRCNCA with trailheads, scenic overlooks, and picnic facilities along its route. Approximately 20 trails can be accessed directly from the Red Rock Canyon Scenic Loop Drive and the adjacent parking areas. The most visited areas in RRCNCA are the first three parking areas (Calico 1, Calico 2, and Sandstone Quarry) adjacent to Scenic Loop Drive after the Fee Station Kiosk. These three areas provide a wide variety of recreational amenities; everything from easy, family-oriented hiking trails to challenging trails for more seasoned hikers. In addition, many of the area rock climbing routes are located in the Calico Hills and can be directly accessed via trails connected to the Sandstone Quarry parking area.

The La Madre Mountain Wilderness borders Scenic Loop Drive to the North and East and the Rainbow Mountain Wilderness borders Scenic Loop Drive to the west; the wilderness areas are part of RRCNCA. The

two adjacent wilderness areas can be accessed via the five trailheads (that is, Oak Creek Canyon, Ice Box Canyon, Pine Creek Canyon, Sandstone Quarry, and Lost Creek) adjacent to Scenic Loop Drive.

Moenkopi Road extends south from SR 159 and connects visitors to the Red Rock Campground, which is the only developed campground in RRCNCA. Red Rock Campground comprises 72 individual campsites, including 14 walk-in, five recreational vehicle and three handicap accessible sites.

The RMP restricts motorized vehicles to existing roadways and prohibits them from off-highway (cross-country) use in the vicinity of Scenic Loop Drive.

3.10 Socio-Economics

RRCNCA is situated on the western edge of Clark County, in the southeastern corner of the state of Nevada. Clark County, by far the most populous of Nevada's 17 counties, is comprised of approximately two million residents (U.S. Census Bureau, 2014), representing over 72 percent of the state's total population. Clark County has experienced a rapid rate of population growth, growing by over 52 percent between 2000 and 2014 (U.S. Census Bureau, 2014). State forecasting models project the Clark County population to reach 2,343,060 residents by 2032 (Nevada State Demographer's Office [NVSDO], 2014).

Cities in Clark County include Las Vegas, North Las Vegas, Henderson, Boulder City, and Mesquite. The City of Las Vegas, a year-round resort destination for entertainment and recreation, is Clark County's principal population center, and continues to be one of the fastest growing metropolitan areas in the nation. On a larger scale, the Las Vegas-Henderson-Paradise Metropolitan Area (LVMPA) is comprised of Las Vegas, Henderson, North Las Vegas, Paradise, and Boulder City. The LVMPA accounts for over 95 percent of the entire population in Clark County, over 72 percent of Nevada's 2014 population, and over 81 percent of the state's growth (U.S. Census Bureau, 2014).

The largest employment sectors in Clark County are accommodation/food services and retail trade, followed by health care (NVSDO, 2014). In 2014 alone, Clark County collected \$9.6 billion in gaming revenue. Improved transportation corridors on both the California and Utah/Arizona sides have helped provide greater accessibility to the LVMPA, and continue to bolster the area's economy by bringing visitors into the region who seek entertainment and recreational opportunities. Las Vegas tourism reached approximately 41 million visitors in 2014, an increase of nearly five million visitors from just four year prior (Las Vegas Convention & Visitors Authority [LVCVA], 2014).

Aside from the tourism generated by the recreational opportunities in the RRCNCA, there are no other employment or population centers in the Project area.

3.11 Soils

Soils in the Project area have developed on alluvial and colluvial fans of coarse material derived from limestone, sandstone, and granitic materials that have been eroded from the surrounding mountains. Soils that have formed in this area are generally gravelly loams or gravelly sandy loams. Younger soils have formed in the active drainages and there are little or no diagnostic soil horizons (entisols). Older soils on higher ground on ridges between the drainages may contain soils with some developed pedogenic features (aridisols). The limestone and sandstone parent materials have high calcium carbonate content. The dispersal of carbonate material by wind erosion has resulted in carbonate accumulation in almost all soils. Under the arid conditions little downward movement of the soluble constituents has occurred. Wind and water erosion is low to moderate, but over time fine particles have been removed from the surface leaving a 1 to 3 inch layer of thick coarse gravel loam or gravelly sandy loam on the surface. Weathering has also left rock fragments on the surface. The organic matter content of the soil surface layer is very low, typically less than 0.5 percent. The soils are very fragile and susceptible to ground disturbance from animals, humans, and motorized vehicles (BLM, 2012).

Biological Soil Crusts (BSC) are known to occur throughout the Mohave Desert Region (BLM, 2001). During the biological survey performed for the Project, areas of BSC were observed in the Project area. The dominant crust component of the BSC in the Project area was identified as squamulose lichens, exhibiting both flat and pinnacled morphology.

3.12 Threatened, Endangered or Candidate Animal Species

Threatened and endangered species are placed on a federal list by the U.S. Fish and Wildlife Service (USFWS) and receive protection under the Endangered Species Act of 1973, as amended. The only federally protected species known to occur in the vicinity of the Project area is the threatened Mojave Desert tortoise (*Gopherus agassizii*). The proposed Project is not within desert tortoise critical habitat.

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

3.13 Wetlands/Riparian Zones

The geology, hydrology and topography of the Spring Range gives rise to an abundance of local springs. These water sources in turn give rise to riparian areas. More than any other single factor, it is the presence of these riparian areas that accounts for the biodiversity found in RRCNCA, and the RRCNCA Resource Management Plan (2005a) discourages recreating within 0.25 miles of a wetland or riparian area.

Within 0.25 miles of the project, two riparian areas were identified during the field survey and aerial review. The Willow Spring riparian area is located directly northeast of the Willow Spring parking area. An unnamed riparian area was identified during the field review located within the Pine Creek Wash approximately 0.8 miles northwest of the wash's intersection with Scenic Loop Drive and approximately 0.25 miles of Scenic Loop Drive.

In addition to the riparian springs discussed above, two Waters of the U.S. (WUS) were found within the Project area, both along the return route. One is located about 0.25 miles northwest of the Visitor Center and the other about 0.5 miles south of Sandstone Wash crossing. Both would receive water flow from Sandstone Quarry and flow southeast into Red Rock Wash. These natural drainages lack riparian and wetland vegetation and the drainages are composed of primarily pebbles with some cobble substrate. The vegetation is sparse within the active floodplain, with white bursage (*Ambrosia dumosa*) and rubber rabbit brush (*Chrysothamnus nauseosus*) the dominant shrubs along the banks of the wash.

3.14 Vegetation

3.14.1 General Vegetation

The Project area is located within the blackbrush and creosote-bursage plant communities. According to Gap Analysis Program (GAP) Land Cover Data provided by the U.S. Geological Survey (USGS), the Project area is dominated by blackbrush, primarily Mojave Mid-Elevation mixed desert scrub. Areas characterized by Sonora-Mojave creosote-bursage desert scrub and desert wash are also present within the Project area (USGS, 2011). Field visits conducted in 2015 identified vegetation consistent with the GAP Land Cover Data. Desert wash was identified as the dominant vegetation type in the drainages throughout the Project area.

3.14.1.1 Blackbrush

Blackbrush is a slow growing and long-lived (up to 400 years) densely branched shrub that gets its name from its dark stems and branches that appear even darker when the shrub is dormant. Blackbrush scrub typically occurs between 1900 and 5200 feet in elevation at the transition between creosote scrub and higher elevation sagebrush scrub. Invasive non-native annual grasses and increased fire frequency are the most significant threat to this community.

3.14.1.2 Creosote-bursage scrub

Creosote-bursage scrub is the most abundant vegetation type in the Southern Nevada District. Creosote and white bursage are generally the most conspicuous plant species present. This vegetation community occurs below 4000 feet and is the primary habitat for the threatened desert tortoise. Within the Project area, this vegetation category is composed entirely of the Sonora-Mojave creosote-bursage desert scrub ecosystem. This vegetation consists of large open expanses of vegetation, including dispersed cactus and yucca that gradually integrates with saltbush scrub near valley bottoms and blackbrush at higher elevations. Predominant threats to this ecosystem include direct and indirect impacts resulting from anthropogenic activity, invasion by non-native annual grasses, and increased fire frequency.

3.14.1.3 Desert Wash

Desert wash is reflective of riparian vegetation associated with washes throughout the Project area. Most of these areas are dry the entire year and represent trans-zonal plant communities, in which plant communities are shifting from one vegetation association to another. This community is described primarily by shrubs occurring along drainages. Species composition is influenced primarily by water availability and storage.

3.14.2 BLM Special Status Plants

BLM Sensitive Plant Species are species that require special management consideration to avoid potential future listing under the Endangered Species Act and that have been identified in accordance with procedures set forth in BLM Manual 6840. The following sensitive plant species are known to potentially occur within the proposed Project area: Yellow two-tone beardtongue (*Penstemon bicolor ssp. bicolor*), and the Blue Diamond cholla (*Cylindropuntia whipplei var. multigeniculata*).

3.14.2.1 Yellow Two Toned Penstemon (*Penstemon bicolor ssp bicolor*)

The yellow two-tone beardtongue is a BLM special status species restricted to western Clark County, Nevada, including the Las Vegas Valley, RRCNCA, and the McCullough Mountains (Glennie, 2003). The yellow two-tone beardtongue, and the closely related rosy two-tone beardtongue (*Penstemon bicolor ssp. Roseus*), are short-lived perennial herbs that reproduce from seed. All known sites are surrounded by Sonora-Mojave Creosote-White Bursage Desert Scrub and Mojave Mid-Elevation Mixed Desert Scrub. Both sub-species are generally restricted to naturally and artificially disturbed, often calcareous, moisture accumulating sites such as washes, roadsides, rocky slopes, crevices, and talus between 1800 and 5480 feet elevation (Smith, 2005). As an important survival strategy, yellow two-tone beardtongue can persist in the soil seed bank for many years before germinating; therefore, a single survey may not accurately determine the species presence or absence. The historic distribution of the yellow two-tone beardtongue includes 43 recorded occurrences (Glennie, 2003). Since 2003, 11 of the recorded occurrences within the BLM Las Vegas Valley disposal boundary have been developed. Presently, the known distribution includes 32 recorded occurrences. Rare plant surveys completed in 2003, 2012, 2014, and 2015 identified yellow-two toned beardtongue populations along the Scenic Loop Drive and parking areas, as well as the return route alignment.

3.14.2.2 Blue Diamond Cholla (*Cylindropuntia multigeniculata*)

The Blue Diamond cholla is a BLM special status plant species endemic to Clark County, Nevada. The Blue Diamond cholla is a cactus restricted to dry gypsiferous limestone areas mostly on cooler or more protected exposures (ledges of canyon walls, northern-sloping surfaces), and more rarely on exposed ridges from 3450 to 4350 feet elevation. All plant populations occur within Sonora-Mojave Creosote bush-White Bursage Desert Scrub and Mojave Mid-Elevation Mixed Desert Scrub communities. Presently, there are four known population complexes (Baker, 2005): Gass Peak in the Las Vegas Range, La Madre Mountain and Blue Diamond Hill in RRCNCA, and in the McCullough Mountains of Sloan Canyon National Conservation Area (Baker, 2005). All known populations of the Blue Diamond cholla are located outside of the construction footprints for the proposed action.

3.15 Visual Resources

The RMP, adopted May 20, 2005, assigned a Visual Resources Management (VRM) Classification of primarily Class II, with some areas of Class III, for the areas containing the Scenic Loop Drive and the Visitor Center. The most critical variable affecting the sensitivity of the visual resources in this area is the NCA status of the area along with high levels of visibility of the natural landforms. The Spring Mountains in the vicinity of the proposed action illustrate banding from different geologic eras, showing reds, yellows, and grays within the mountainous landforms. They serve as the backdrop for western-looking views for motorists on the Scenic Loop Drive. The mountains in the background are jagged and pronounced and create a dominant landform. By contrast, the landform inside of the Scenic Loop Road conveys smooth undulations.

Vegetation in this area is indicative of low-growing blackbrush, desert shrub, desert wash, and chaparral vegetative communities. These vegetative communities produce muted green, gray, and brown color patterns. Very few bodies of water or human-made structures occur along the Scenic Loop Drive. The Scenic Loop Drive is a one-way road for vehicles, and views for motorists are typically limited to a distance of less than 0.25 mile because of the winding and curving nature of the roadway, the rolling topography, and the screening provided by the desert vegetation.

3.16 Wilderness/Wilderness Study Areas

The United States Congress established the National Wilderness Preservation System to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States. Wilderness designation is intended to preserve and protect certain lands in their natural state. The Wilderness Act of 1964 defines wilderness characteristics, the uses of wilderness, and the activities prohibited within wilderness. Only Congress, with Presidential approval, may designate areas as Wilderness. Federal lands must have certain characteristics to be considered for wilderness preservation:

- The area must be in a generally natural condition.
- The area must have outstanding opportunities for solitude or a primitive and unconfined type of recreation.
- The area must be at least 5000 acres or large enough to preserve and use as wilderness.
- The area may also contain ecological, geological, or other features of scientific, scenic, or historical value.

On BLM lands, a Wilderness Study Area (WSA) is a roadless area that has been inventoried (but not designated by Congress) and found to have wilderness characteristics. BLM manages WSAs under the NLCS to protect their value as wilderness until Congress decides whether or not to designate them as wilderness.

Wilderness areas are managed for the use and enjoyment of the American people in a manner that will leave them unimpaired for future use and enjoyment as wilderness, for their protection, for the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.

Two Wilderness Areas are located within the RRCNCA adjacent to Scenic Loop Drive: La Madre Mountain Wilderness and Rainbow Mountain Wilderness. Both areas are managed jointly by the BLM and U.S. Forest Service. Developed trailheads located along the RRCNCA Scenic Loop Drive and SR 159 provide trail access into or up to the boundary of the Wilderness Areas. No WSAs are located in the vicinity of the Project area.

The La Madre Mountain Wilderness (approximately 47,270 acres) is characterized by a rugged complex of canyons, ridges and mountain peaks which provide much of the landscape from Scenic Loop Drive. The southeastern boundary of La Madre Mountain Wilderness runs north of Calico Basin and can be accessed from several locations along Scenic Loop Drive, including Sandstone Quarry, White Rock, Willow Springs, and Lost Creek.

The Rainbow Mountain Wilderness (approximately 24,980 acres) is identified by its vertical red and buff sandstone cliffs and narrow, twisting and heavily vegetated canyons. The eastern boundary of Rainbow Wilderness is easily accessed from Scenic Loop Drive at the Ice Box Canyon and Pine Creek Canyon trailheads.

3.17 Wild Horses and Burros

The RRCNCA includes portions of the Red Rock Herd Management Area (HMA). The Red Rock HMA encompasses approximately 160,000 acres of BLM public land and approximately 25,000 acres of USFS public land in southern Clark County. The wild horses and burros generally rely on some portion of either BLM or USFS public lands to provide their required habitat throughout the year. The 2015 wild horse and burro population estimate (adults only) for the Red Rock HMA is 110-122 wild horses and 66-99 wild burros. The wild burros primarily live north of State Route 160 and the wild horses are generally south of State Route 160.

4.0 Environmental Effects

The following section provides an analysis of the environmental effects that may occur by implementing either the proposed action or the no action alternative. The resources identified in Section 3 as being present and potentially impacted by the Project are analyzed. It also outlines mitigation measures that will be implemented in order to reduce negative impacts to the environment or local resources.

4.1 BLM Natural Areas

4.1.1 Proposed Action

The Proposed Action would address concerns related to the Pine Creek Parking Area and Trailhead. According to the RMP, the Pine Creek Trailhead has likely received the most damage from users as a result of under-design in capacity. At best, the parking area is 1/3 of the size that is needed, which has resulted in substantial vegetation loss as vehicles park wherever space is available and in undesignated areas along Scenic Loop Drive. Expansion of the area was planned in 1991, but never completed. The Proposed Action would address these issues, creating approximately 57 additional parking spaces.

The Proposed Action would not directly impact the North Fork Pine Creek Natural Area; no improvements would be constructed within the area. Currently, there are no formal trails into the natural area and recreation within this area is prohibited. BLM management direction would be followed to address the development of unauthorized social trails.

4.1.2 No Action

The no-action alternative would not involve improvements to the Pine Creek Parking Area. As a result, visitors would continue to disturb the immediate area by parking in roadside vegetated areas and create unauthorized social trails into the North Fork Pine Creek Natural Area.

4.2 Fish and Wildlife Excluding Federally Listed Species

4.2.1 Proposed Action

4.2.1.1 Wildlife

Wildlife species would be disturbed or displaced as approximately 36.77 acres of habitat are disturbed within the Project area. The primary direct impacts of the proposed action on wildlife would be killing or maiming of ground-dwelling animals, displacement of individuals, the permanent loss and fragmentation of habitat, increased noise, and increased potential for harassment of wildlife. Indirect impacts could include the introduction and spread of weeds and increased erosion potential. Wildlife species in the general area are common and widely distributed throughout the area and the loss of some individuals or their habitat should have a negligible impact on populations of the species throughout the region. Impacts to BLM sensitive species are not anticipated to lead to further decline of the species range-wide.

4.2.1.2 BLM Sensitive Species

Potential impacts to Chuckwalla, desert glossy snake, desert sidewinder, Mojave shovel-nosed snake and Banded Gila Monster from the proposed action would be similar to those discussed above for general wildlife.

4.2.2 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed and no Project-related impacts to wildlife or BLM sensitive species would occur. Sensitive species would continue to be protected under the RRCNCA RMP.

4.3 Floodplains

4.3.1 Proposed Action

The Scenic Loop Drive pavement rehabilitation element of the proposed action intersects FEMA-regulated 100-year Zone A floodplains at Sandstone Wash, Red Rock Wash, and Pine Creek Wash. The traffic control and signage elements of the proposed action intersect Zone A floodplains as they cross SR 159 west of the RRCNCA entrance. Although the return route does not encounter FEMA-designated floodplains, the design includes eight areas of a riprap-culvert combination to convey flows across the new roadway. In addition to the culverts, a 200-foot low-water crossing is included to convey one of the larger channels of Sandstone Quarry Wash.

The proposed action would not increase the surface of the roadway or create any new obstructions to the wash flows within designated floodplains. As a result, the Project is not anticipated to have any effect on floodplains.

4.3.2 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed and no Project-related impacts to floodplains would occur.

4.4 Fuels/Fire Management

4.4.1 Proposed Action

The Proposed Action would help to prevent the spread, size, and intensity of future wildfires from burning sensitive species habitat and vegetation within the RRCNCA. The new return route could act as a fuel break that would slow or stop wildfires and would also provide ingress, egress, and quicker response times during wildfire emergencies, increasing both visitor and firefighter safety.

The risk of fire could increase during construction as a result of the presence of heavy equipment, additional vehicles, and employee activities. Compliance with BLM fire restrictions and fire prevention measures will mitigate any risks introduced by the construction of the Proposed Action.

4.4.2 No Action

Although the no-action alternative would not increase the risk of fire within RRCNCA, it would not provide the benefits of quicker response times and fire break provided by construction of the return route.

4.5 Hydrologic Conditions (including Water Quality)

4.5.1 Proposed Action

Although the return route, parking improvements areas, and improvements to White Rock Road and Oak Creek Road would increase the amount of impervious surface in RRCNCA by approximately 11.48 acres, the Project would not result in a substantial change to the existing hydrologic conditions in the Project area.

Specifically, the return route would be designed with drainage improvements to maintain drainage without concentrating flows and creating turbulent conditions downstream. In addition, improvements at the parking areas would not change the existing hydrologic conditions in the Project area, as the minor amount of new impervious surface would not impact the amount of stormwater runoff to area washes and drainages. Erosion-control BMPs implemented throughout construction will minimize any sedimentation of storm water.

In the absence of any drinking water natural resources within RRCNCA, the Project would have no effect on drinking water quality.

4.5.2 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed and no Project-related impacts to existing hydrologic conditions would occur.

4.6 Invasive Species/Noxious Weeds

4.6.1 Proposed Action

Vegetation removal and soil disturbance during construction could create conditions for the establishment of invasive plant species. If invasive weeds are able to infest disturbed areas, it would not only preclude native plant and habitat recovery, but it would also place the area at a much higher risk of a wildfire. Disturbance would be greatest along the proposed return route and in parking expansion areas where undisturbed land would be cleared to accommodate new roadway and parking. Areas where surface disturbance would occur as a result of construction activities would be reclaimed and seeded with BLM-approved, weed-free seed mix once Project construction is complete.

Vehicles and construction equipment traveling from areas that contain invasive species could disperse invasive plant seeds, resulting in their establishment in previously undisturbed areas that may not have contained invasive species, as well as increasing the distribution or abundance of existing populations in previously disturbed areas. The transportation of materials into areas disturbed by construction (e.g., erosion control materials, borrow materials, mulch, and gravel, as well as native seed mixtures and/or saplings used during re-vegetation efforts) may also contribute to the spread of invasive plant species. In the absence of measures to prevent and control newly established infestations resulting from construction, invasive plant species can persist in disturbed and reclaimed areas, and those that are present in the construction area may spread into adjacent areas. However, the Project includes measures to reduce the potential for introduction or spread of invasive plant species. These measures are described in Section 4.20, Mitigation Measures, as well as in the Weed Management Plan.

4.6.2 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed and no Project-related impacts to invasive plant species or noxious weeds would occur. Invasive plant species and noxious weeds would likely continue to be introduced and spread as a result of natural dispersal or from various land-disturbing activities, such as roadway maintenance and construction, recreation, and development. Increases in the numbers or extent of invasive plant species would be restricted by monitoring and control measures implemented by the BLM.

4.7 Lands/Access

4.7.1 Proposed Action

The Proposed Action includes the expansion of parking areas and the construction of a return route on a new alignment in previously undisturbed area. As discussed in Section 3.7, NLCS policy is that new facilities can only be developed on National Conservation Lands under certain circumstances. One of these is that the facilities further the purposes for which an area was designated. The return route would connect Sandstone Quarry to the Visitor Center, improving access to many of the unique features and recreational amenities for which the RRCNCA was designated. The return route would lessen traffic on Scenic Loop Drive as vehicles returning to the Visitor Center from Sandstone Quarry could use the 2.4-mile return route rather than travelling the remaining 10 miles of Scenic Loop Drive; for the same reasons, the return route would also expedite the delivery of emergency services.

The Proposed Action would be consistent with the RRCNCA RMP (parking area expansions and the return route are both identified as options for addressing concerns presented in the RRCNCA) as well as NLCS policy

and guidance. Overall, the Proposed Action would improve the visitor experience (by reducing congestion on Scenic Loop Drive, providing a return route, and constructing additional parking areas), improve vehicular and pedestrian circulation and safety (through signing, striping, and decreasing parking in undesignated areas), and decrease impacts to natural resources (by reducing parking in undesignated areas).

4.7.2 No Action

The no-action alternative would not involve the construction of new facilities and would, therefore, comply with NLCS policy and federal legislation. Concerns related to parking areas, traffic, and safety identified in the RMP would not be addressed. As visitation to the RRCNCA grows, the need for the improvements included in the Project would increase and negative effects on visitor safety and experience would intensify.

4.8 Migratory Birds

4.8.1 Proposed Action

Migratory birds, including the BLM sensitive species Western burrowing owl (*Athene cunicularia*), may be present on the Project site. Depending on the time of year for construction, there is the potential to disturb nesting birds within or immediately adjacent to the proposed action. Specifically, the direct impacts of the proposed action on Western burrowing owl would be loss of nesting habitat and forage, mortality and harassment of individual animals, and decrease in habitat value of adjacent remaining “wildland” areas. The proponent must comply with the MBTA and avoid potential impacts to protected birds within the Project area. In addition, mitigation measures outlined in the next section will be implemented throughout the life of the Project.

4.8.2 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed and concerns related to habitat damage due to overflow parking would not be addressed.

4.9 Recreation

4.9.1 Proposed Action

The Project would have a positive, beneficial effect on recreation within the RRCNCA. The BLM has considered the elements included in the proposed action for more than 20 years and the RRCNCA RMP has identified many of these improvements as priorities for managing visitation in the RRCNCA. Twelve parking areas would be improved and would provide additional parking spaces at key access points along Scenic Loop Drive, improving access to trails, wilderness areas, and other amenities. These improvements would decrease parking in undesignated areas which would reduce congestion on Scenic Loop Drive, improve vehicular and pedestrian circulation and safety, and decrease impacts to natural resources. Vehicle and bicycle movements would also be improved through the addition of signage along Scenic Loop Drive and striping along SR 159.

The return route would connect Sandstone Quarry to the Visitor Center, allowing visitors to access recreational amenities along the first three miles of Scenic Loop Drive and return to the Visitor Center using the 2.4-mile return route rather than travelling the remaining 10 miles of Scenic Loop Drive. It would also reduce traffic on Scenic Loop Drive after Sandstone Quarry, benefiting visitors destined for amenities in the western side of RRCNCA.

As previously noted, motorized vehicles are restricted to existing roadways and prohibited from off-highway (cross country) use in the vicinity of Scenic Loop Drive. Although the return route would be constructed in an area where off-highway use is prohibited, it would remain in conformance with the RMP. Following

construction, off-highway (cross-country) use would continue to be prohibited in lands adjacent to the Scenic Loop Drive, including the return route.

The proposed action would address concerns related to the Pine Creek Parking Area. According to the RMP, the parking area is 1/3 of the size that is needed, at best, which has resulted in substantial vegetation loss as vehicles park wherever space is available and in undesignated areas along Scenic Loop Drive. Expansion of the area was planned in 1991, but never completed. The Proposed Action would address these issues, creating approximately 57 additional parking spaces.

Pavement Rehabilitation would improve safety and access to areas within RRCNCA, especially during rain events.

Construction-related disturbances (for example, noise, dust, and large equipment) could affect visitor's experience and temporarily decrease the recreational value of the associated recreational elements (picnic areas, trail access, and scenic viewing). Parking would decrease temporarily at each parking area during expansion, resulting in some out-of-direction travel and visitor frustration during construction. Visitors would likely try to park in unauthorized spaces along Scenic Loop Drive if alternative locations are not available and clearly identified. Hikers may also be diverted to other trails, increasing visitation in these areas, and in some cases walking through protected areas. This could result in temporary impacts to vegetation and create traffic and safety issues along Scenic Loop Drive. Construction during off-peak periods, traffic control, proper signage for alternative access locations, area closures, and the sequencing construction so that key sites are not constructed at the same time or are constructed after the return route could alleviate these temporary effects.

4.9.2 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed. The no-action alternative would result in fewer disturbances to the visitor's experience in the short-term. However, as visitation to the RRCNCA grows, the need for the improvements included in the Project would increase. The no action alternative would have a negative impact on visitor safety and experience in the long-term as visitors could continue to experience a high rate of vehicle-bicyclist-pedestrian conflicts and overflowing parking areas with poor circulation. Cyclists would be negatively impacted as the conditions of the road surface continue to deteriorate.

4.10 Socio-Economics

Long-term effects to socio-economics in the RRCNCA are anticipated to be beneficial for RRCNCA businesses and its visitors. The addition of the return route is anticipated to reduce the traffic on Scenic Loop Drive after Sandstone Quarry, thereby providing congestion relief for visitors wishing to access the amenities in the western side of RRCNCA. Cyclists, in particular, would reap the benefit of an improved roadway surface and clear ingress/egress markings on Scenic Loop Drive and the adjacent parking areas. The tour guides and other private businesses that operate in RRCNCA (such as horse riding, bus tours, and guided rock climbs) would be better accommodated with expanded parking areas. The signage and traffic control improvements on SR 159 leading up to the RRCNCA entrance would better facilitate vehicle and bicycle movement into the RRCNCA. The fee station kiosk parking area signage and circulation improvements would help to eliminate visitors entering RRCNCA without paying.

Parking Area expansions would improve access and better accommodate existing users (who often park in unauthorized locations along Scenic Loop Drive as a result of underdesigned parking areas). Visitation overall would not be expected to increase as a result of the proposed action. Additional impacts specific to recreation resources and visitation are detailed in Section 4.10, Recreation.

Throughout construction of the proposed action, the potential exists for minor traffic delays at or near the construction areas. Therefore, construction of the Project potentially could create short-term adverse impacts to visitors' experiences, or to recreation and touring events operated by private businesses within RRCNCA. Potential impacts would most likely occur during active construction, especially when construction vehicles may need to access the existing road. Construction during off-peak periods, traffic control, proper signage for alternative access locations, area closures, construction sequencing so that key sites are not constructed at the same time, and measures to minimize construction visibility and reduce the time construction vehicles spend on the existing roadway, would alleviate these temporary effects.

4.10.1 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed. Without construction of the return route, traffic on Scenic Loop Drive after Sandstone Quarry would not be reduced and would not provide congestion relief for visitors wishing to access the amenities in the western side of RRCNCA. The roadway surface and signage would not be improved, thereby affecting the visitor experience. In addition, parking capacity would continue to be inadequate resulting in resource damage as visitors park in unauthorized locations.

4.11 Soils

4.11.1 Proposed Action

The Project would not affect the types of soil found in the project area (gravelly loam) but would result in a total of approximately 36.77 acres of soil disturbance (26.60 acres of permanent and 10.17 acres of temporary soil disturbance). The majority of the impacts originate from the construction of the new return route and Parking Areas Improvements. The return route would result in approximately 24.88 acres of disturbance. This represents 18.29 acres of permanent impacts and 6.59 acres of temporary impacts. The Parking Areas Improvements would result in a total of approximately 8.67 acres of new soil disturbance, resulting from 6.55 acres of permanent impacts and 2.12 acres of temporary impacts. The remaining disturbance is a result of improvements on White Rock Road and Oak Creek Road. Because the work would be completed within the existing roadway prism, no permanent or temporary impacts are anticipated as a result of the paving rehabilitation on Moenkopi Road and Rocky Gap road.

In accordance with 40 CFR §122.26(b)(14), because the Project's construction area is greater than 1.0 acre, a Nevada Construction Storm Water Permit is required to be obtained before construction. Permit acquisition includes the development of a Storm Water Pollution Prevention Plan (SWPPP) as stated in the mitigation measures section of this EA. Impacts to soils during construction will be minimized through the BMP implementation outlined in the SWPPP.

During the biological survey performed for the Project, squamulose lichens BSC were observed in the Project area. BSC are sensitive to human disturbances to varying degrees, with construction equipment traffic representing a higher degree of disturbance than foot traffic (BLM, 2001). Where BSC is affected by the movement of construction equipment, disturbance minimization will be accomplished through BMPs.

4.11.2 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed. Soil erosion would continue to be a concern as visitors park in unauthorized locations along Scenic Loop Drive.

4.12 Threatened, Endangered or Candidate Animal Species

4.12.1 Proposed Action

The proposed Project must comply with Section 7 of the Endangered Species Act of 1973 as amended (16 U.S.C. 1531 et seq.) for consultation with the USFWS on effects to federally listed species. The proposed action has a may affect, likely to adversely affect determination for the federally threatened desert tortoise (*Gopherus agassizii*) and no effect for its designated critical habitat, as the Project is outside of this range. The proposed Project would have no effect on any other federally protected species or designated critical habitat because of the absence of the species and/or habitat.

Data from the Southern Nevada District Office and NDOW document live tortoise and burrows within the Project area. Protocol surveys will be completed before construction activities.

Potential impacts to tortoise from the proposed action would be similar to those described in the Fish and Wildlife section including loss of habitat. If not noticed and avoided during construction, operation, or maintenance activities, desert tortoises could be either injured or killed (by crushing) or harassed (by being moved out of harm's way). Other impacts include loss of connectivity.

Formal consultation is required with USFWS because of ground disturbance in tortoise habitat, which entails an append to the RRCNCA Programmatic biological opinion (File No. 1-5-04-F-526). Section 7 Consultation for this Project is covered under the appended RRCNCA Programmatic biological opinion contingent on compliance with the terms and conditions.

4.12.2 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed and concerns related to habitat damage due to overflow parking would not be addressed.

4.13 Wetlands/Riparian Zones

The proposed action includes improvements and expansion of two parking areas within 0.25 miles of the Willow Springs riparian area. The parking improvement would accommodate visitors already using the area and would not bring additional visitors to the area. In addition, although the pavement rehabilitation along Scenic Loop Drive would occur within 0.25 miles of the unnamed spring identified during the April 2015 field review; it does not include any new ground disturbance outside the existing roadway and therefore would not bring visitors closer to the riparian area. As a result, the Project is not anticipated to result in any impact on wetland or riparian areas.

It is anticipated that a Nationwide Permit will be required from the U.S. Army Corps of Engineers for permanent impacts within the washes along the return route.

4.13.1 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed. No temporary or permanent impacts to wetland/riparian resources would occur.

4.14 Vegetation

4.14.1 Proposed Action

Surface disturbance related to the construction of the project would result in the temporary and permanent removal of vegetation within the Project area. Disturbance caused by clearing, grubbing, grading, and trenching would result in the loss of up to approximately 36.77 acres of creosote-bursage scrub, desert wash, and Mojave mixed scrub vegetation types. Total disturbance would consist of approximately

26.60 acres of permanent impact and 10.17 acres of temporary impacts. This estimate incorporates maximum levels of disturbance for the proposed improvements. The vegetation that would be impacted by the Project is represented throughout the Project area and impacts would be minor when considered in this larger context.

Although the Project would directly impact vegetation through ground disturbance, the Project would also benefit vegetation by providing adequate parking in the most heavily utilized areas along Scenic Loop Drive, thereby reducing the occurrence of parking in unauthorized, vegetated areas. New signage on Scenic Loop Drive would further direct visitors away from the roadside vegetated areas and into the expanded parking areas.

Areas where surface disturbance would occur as a result of construction activities would be reclaimed and seeded with BLM-approved, weed-free seed mix once Project construction is complete. While impacts to vegetation in these areas would be temporary, it would require several years before new growth would be similar to the existing vegetation.

All cactus and yucca in the Project footprint would be salvaged and replanted in the temporary disturbance areas as outlined in the mitigation measures section.

4.14.2 No Action

Under the no-action alternative, impacts to vegetation would continue to occur as a result of roadside parking in unauthorized, vegetated areas.

4.15 BLM Special Status Plants

4.15.1 Proposed Action

4.15.1.1 Yellow Two-Toned Penstemon

The proposed action would directly and indirectly impact yellow two-tone beardtongue habitat in RRCNCA. A survey conducted in April 2015 identified 10 individual plants in seven locations in or adjacent to the Project area. The proposed action would directly and indirectly impact occupied habitat. Construction of the Project would result in crushing, the removal of plants, and disturbance of soil containing seed of the species. The loss of individuals causes decreased seed production and recruitment, which in turn leads to reduced populations. The removal of plants and the soil seed bank combined could lead to extinction of the local population. Typically, top soil salvage is used to minimize Project impacts; however, because of the rocky nature of both washes, topsoil salvage is not practical and may not be effective. As an impact minimization measure, seed collection is only effective when the plant is present and producing seed. Because only one plant is present this year, collecting the seed from affected individuals is not an effective conservation measure. Attempting to restore the population, by growing and replacing plants, would not preserve the genetic diversity and would not satisfactorily replace the lost soil seed bank. Given the Project schedule and potential impacts associated with the Project, the BLM would implement offsite conservation measures. These measures are described in the Mitigation section of this document.

4.15.1.2 Blue Diamond Cholla

All known populations of the Blue Diamond cholla are located outside of the proposed action areas; direct impacts to this sensitive plant species are not expected.

4.15.2 No Action

Under the no-action alternative, impacts to vegetation would continue to occur as a result of roadside parking in unauthorized, vegetated areas.

4.16 Visual Resources

4.16.1 Proposed Action

The degree to which the proposed action conforms to the VRM classification of the land on which it would be located is based on the thresholds indicated for each VRM Class. VRM Class II and III Objectives allow for weak and moderate degrees of contrast, respectively, resulting from the proposed action. The BLM considers a weak degree of contrast to occur when the proposed action can be seen but does not attract attention. A moderate degree of contrast attracts attention and begins to dominate the characteristic landscape. Based on a pre-screening analysis, it was determined the visual changes brought about by a large number of the project's components would range from minor to less than substantial, and would conform to the visual quality objectives of the VRM classes that apply to the areas in which they are located. The remaining elements were evaluated in detail to determine the potential for visual impacts.

Of the five project features evaluated in detail, one, the new return road from Sandstone to the Visitor Center, was found to conform to the visual resource management objectives for the area in which it is located. The other four features, the expansions of the parking areas at the Calico 1, Sandstone Quarry, Lost Creek, and Willow Springs, were all found to create levels of contrast that would not be consistent with the visual quality objectives for the VRM classes assigned to the lands on which they would be located. As a result, mitigation measures were developed to reduce the visual impact of the Project and comply with VRM Class III objectives.

Low profile signs designed using the Look and Feel Modernization Initiative for NLCS units would replace the signage on Scenic Loop Drive. Traffic and regulatory signs in the Look and Feel Modernization Initiative are described as "not being modified", but are designed to reduce the visual contrast of traffic and regulatory signs without compromising safety. These mitigation measures include lowering the height of the signs as low as practical and painting both sides with non-reflective colors that blend with the environment.

Retaining walls included in the proposed action are located along the the High Point Overlook and Calico 1 parking areas. The retaining walls are located in a VRM Class III area, and because of the configuration of Scenic Loop Drive leading to the parking area is from the east, the visibility of the walls will be limited. Mitigation measures, including minimizing vegetation disturbance and painting the walls to match the surrounding soils, have been included in to further reduce any potential visual impacts at the High Point Overlook parking area.

With the inclusion of these mitigation measures, the proposed action would conform to VRM Class II and III Objectives and no significant visual impacts would occur. General mitigation measures are outlined in the mitigation measures section of this EA. (See Appendix B for detailed Visual Analysis.)

4.16.2 No Action

Under the no-action alternative, additional temporary visual impacts would continue to occur along Scenic Loop Drive, due to parking along the side of the road—in some cases up to 0.75 miles from the Calico, Ice Box Canyon, and Pine Creek Canyon parking areas.

4.17 Wilderness/Wilderness Study Areas

4.17.1 Proposed Action

The Proposed Action includes the development and expansion of several parking areas that provide indirect access (trailhead access) to both La Madre Mountain and Rainbow Mountain Wilderness Areas. Parking area

improvements throughout RRCNCA are not expected to increase visitation to these areas, but rather better accommodate those visitors whose destination is already wilderness. Parking area improvements would reduce parking in undesignated areas, benefitting RRCNCA.

The impacts of the Proposed Action on the La Madre Mountain and Rainbow Mountain Wilderness Areas are also described in terms of wilderness characteristics. The Proposed Action does not involve any work or require the conversion of any land within Wilderness Areas that would impact natural conditions, ecological systems, or geologic, scientific, scenic, or historical values. The Proposed Action does not directly or indirectly result in any impacts to the natural processes and the wilderness would continue to be affected primarily by the forces of nature. The Proposed Action would not result in any additional structures, installations, and/or developments within Wilderness Areas. The Proposed Action would not impact opportunities for solitude. Group visitation, equestrian operations, and the number of climbers would continue to be limited by area through current policy related to access permits.

4.17.2 No Action

The no-action alternative would not result in impacts to Wilderness Areas. Visitors who currently access the La Madre Mountain and Rainbow Mountain Wilderness Areas from Scenic Loop Drive would have increasing difficulty finding adequate parking. As a result, parking in undesignated areas along Scenic Loop Drive would continue.

4.18 Wild Horses and Burros

4.18.1 Proposed Action

The Proposed Action has the potential to directly and indirectly impact the wild horses and burros. With increased disturbance there is the potential for more essential habitat loss, increased interactions with the wild horses and burros, and the potential to alter their normal foraging and watering behaviors. The Project has the potential to disturb approximately 36.77 acres of wild horse and burro habitat, which is a small portion of the total habitat available for wild burro use in the Red Rock HMA.

4.18.2 No Action

Under the no-action alternative, none of the elements included in the Project would be constructed. No temporary or permanent impacts to wild horses or burros would occur.

4.19 Cumulative Effects

Cumulative impacts are defined in the BLM National Environmental Policy Act (NEPA) Handbook (1998) as impacts on the environment that result from the incremental impact of the Project when added to other past, present, and reasonably foreseeable future actions. The Project area for cumulative impacts extends beyond the immediate Project-specific area to include the broader geographic limits of the RRCNCA. Past, present, and reasonably foreseeable future actions within this Project area that have impacted or may impact the affected resources are presented in Table 5.

Table 5. Past, Present, and Reasonably Foreseeable Future Planning and Projects

Factor	Action	Description	Area Affected
Past Planning	RRCNCA RMP (2005)	RMP describes the appropriate uses and development of the conservation area as it provides management guidance and identifies land use decisions to be implemented for management.	198,000 acres of public lands in the RRCNCA in Clark County.
Past Project	Red Rock Scenic Drive Trail System (1995)	A 13-mile one-way paved road and 46 miles of paved and unpaved trails.	Located within the core area, the Red Rock Scenic Loop Drive is for visitors to drive, bike, or hike. The remaining miles of trail system provide access to other areas within the core area and beyond. The Red Rock Scenic Loop Drive Trail System is used for casual recreation use as well as for permitted activities. The system of trails continues to be maintained today.
Past Project	Cottonwood Valley Trail System (1996)	Approximately 60 miles of trails in the Cottonwood Valley area.	Located adjacent to the core area, the Cottonwood Valley Trail System provides a network of access to areas south of the core area. It is used for casual recreation use as well as for permitted activities. The system of trails continues to be maintained today.
Past Project	Graffiti Removal from the Lost Creek Archaeological Site	Removal of graffiti from rock art panels.	Rock art panels located in the Lost Creek archeological site in the core area of RRCNCA were vandalized in 2010. It is a popular destination for visitors. Removal of graffiti restored the cultural site and discouraged further vandalism from occurring.
Past Project	Visitor Center (April 2010)	Construction of new Visitor Center, Amphitheater, and outdoor interpretive space. Old Visitor Center converted to BLM office facility.	Located within the core area, the newly constructed Visitor Center provides additional indoor and outdoor space for viewing and educational interpretation for enhanced visitor experience. The additional BLM office space created by the conversion of the former Visitor Center allows for more staff work space enabling for enhanced onsite support for RRCNCA. It is anticipated that visitation may increase as a result of the new infrastructure and additional staff support.

Table 5. Past, Present, and Reasonably Foreseeable Future Planning and Projects

Factor	Action	Description	Area Affected
Past Project	SR-159 Corridor Trail Feasibility Study and Programmatic Environmental Assessment (PEA) (2010)	<p>The PEA analyzed a network of trails intended to enhance connections from municipalities and the county into Red Rock Canyon.</p> <p>Inter-connectivity to trails in other municipalities and federal lands. The Zone 2 Trail is consistent with the planned systems trails that would make connections to non-motorized trails outside the RRCNCA. In addition, the Zone 2 Trail would connect to widely used existing on-road bicycle undesignated routes.</p>	<p>Planning for this project included consultation with trail planners from Clark County to accomplish these means. This proposed trail alignment is intended to connect nodes within RRCNCA, including both ends of the Scenic Drive. In the next phase of design, the proposed trail segments will add connections to the campground, Spring Mountain Ranch State Park, and Bonnie Springs.</p>
Past Project	Wastewater system upgrade to Red Rock Visitor Center	Red Rock Visitor Center upgrade of septic system.	Red Rock Visitor Center is located within the core area. Improvements to the wastewater system would accommodate the increased use and address human health and safety.
Past Project	Underground Distribution Lines	15-kilovolt electrical lines to fire station and campground	The new electrical lines extend along SR 159 and Moenkopi Road.
Current Planning	Transportation Feasibility Study	Analysis of current core area transportation infrastructure (Scenic Drive, trails trailheads, and parking) to find solutions to current transportation concerns and potential future issues because of increased visitor use.	The core area of the RRCNCA including the Scenic Drive, adjacent facilities, and transportation infrastructure.
Current Planning	RRCNCA RMP Amendment — Bolting in Wilderness	Analysis of the current bolting restrictions in RRCNCA wilderness to find solutions for safe climbing.	La Madre Mountain and Rainbow Mountain Wilderness Areas, approximately 27,879 acres and 20,311 acres of which (respectively) are located within RRCNCA.
Current Project	Special Recreation Permits for the Cottonwood Valley Trail System	EA analyzing a number of Special Recreation Permits for issuance over a given period of time within the Cottonwood Valley Trail System of RRCNCA. This would be done by identifying and clarifying areas approved for multiple recreation uses to meet current and future Special Recreation Permit annual needs for an approximate 5-year period (2012–2017).	Located adjacent to the core area, the Cottonwood Valley Trail System provides a network of access to areas south of the core area with various casual recreation use and permitted activities occurring there regularly.

Table 5. Past, Present, and Reasonably Foreseeable Future Planning and Projects

Factor	Action	Description	Area Affected
Past Project	Upgrades to Red Rock Fire Station	Facility improvements include: <ul style="list-style-type: none"> ▪ Upgrade of septic system ▪ Installation of a well ▪ Installation of communication system 	Red Rock Fire Station is located in the core area and improvements to the facility would accommodate use and address health and safety for onsite staff members who provide for protection of resources.
Past Project	Upgrades to existing Red Rock Campground	Campground improvements include installation of: <ul style="list-style-type: none"> ▪ Campsite parking stalls and parking lot ▪ Well ▪ Shade structures ▪ Solar panels for electricity to the site ▪ Concrete pads for picnic tables 	Campground is located in the core area and improvements to the facility would result in improved visitor experience and potential increase in use.
Past Project	Red Rock Hazardous Fuels Reduction Project	Treatment using herbicide, mowing, blading, or combination of these methods to remove invasive/noxious weeds and to create fuel breaks.	Fuels reduction treatments in and around the core area of RRCNCA would treat invasive/noxious weeds adjacent to roads, trails, and in previously burned areas to create fuel breaks and limit potential spread fire in the event of a wildland fire. Native plant species would be avoided.
Current Project	Geotechnical Investigation for BLM-FHWA RRCNCA Scenic Loop Drive Improvement Project	Borings and seismic survey to provide geotechnical analysis and recommendations for inclusion into the Red Rock Canyon Low Water Crossing and Pavement Improvement Project.	Along Scenic Loop Drive within the paved surface of the existing roadway and shoulder; would not result in any new disturbance. Drilling at the low water crossing location would result in a minimal amount of new temporary disturbance, which would be reclaimed immediately following completion of each boring. Seismic testing would not result in additional disturbance.
Current Project	Red Rock Visitor Center Well and Water Line Replacement Project	Replacement of the tank and water line that provide water to the Visitor Center.	Red Rock Visitor Center is located within the core area. Improvements to the well and water line would improve functionality and service.
Current Project	SR 159 Antenna Nodes	Seven antenna nodes attached to non-lighted, low profile steel poles needed to provide cell coverage where there is currently a gap in service. Each node is a non-lighted steel pole	Along SR 159.

Table 5. Past, Present, and Reasonably Foreseeable Future Planning and Projects

Factor	Action	Description	Area Affected
		approximately 40 feet in height to the top of the antenna.	
Current Project	RRCNCA Low Water Crossing and Roads Improvements Project	Bridges to replace the low water crossings at Sandstone Wash and Red Rock Wash, and parking lot improvements at the Visitor Center.	Located within the core area. The project is currently under construction and will facilitate the safe movement of vehicles, bicyclists, and pedestrians at the low water crossings. Visitor Center circulation will be improved.
Future Project	State Route 159 Multi-Use Trail — Zone 2	The 3.1-mile Zone 2 Trail roughly parallels SR-159 on the western side and extends from the Red Rock Visitor Center to the Scenic Drive Exit Lot.	Located within the core area, the Zone 2 Trail is one segment of the five segment SR-159 Corridor Trail intended to connect to trails in other municipalities and federal lands. With the EA completed in early 2012, the Zone 2 project is shelf-ready and pending funding for construction. This hiking/biking/equestrian riding trail would provide access into RRCNCA for casual recreation users as well as for permitted activities. It is anticipated that visitation may increase as a result of the completion of the trail.
Future Planning	Transportation and Travel Management Plan	Analyzing, defining, and designating current and future roads, trails, signage, and information systems within the RRCNCA.	198,000 acres of public lands in the RRCNCA in Clark County.

4.19.1 BLM Natural Areas

4.19.1.1 Proposed Action

Past, present, and reasonably foreseeable future activities include the development of roads, parking areas, facilities, and infrastructure that have improved access and accommodated growing visitation to the RRCNCA. Increasing visitation has likely contributed to the development of unauthorized hiking paths within the natural area (to access popular climbing locations) and impacts to vegetation and habitat in the RRCNCA (as a result of parking in undesignated areas).

Currently there are no formal trails into the natural area and recreation within this area is prohibited. The proposed improvements to the Pine Creek Parking Area are identified in the RRCNCA RMP and have been recognized as necessary to address parking and safety problems that have only increased over the last 20 years, resulting in visitor frustration and parking in undesignated area and associated impacts to the environment. BLM management direction would be followed to address impacts associated with the development of unauthorized, social trails. When combined with other past, present, and reasonably foreseeable future actions, and with the implementation of mitigation measures, the Project is unlikely to contribute meaningfully to cumulatively effects to the North Fork Pine Creek Natural Area.

4.19.2 Fish and Wildlife Excluding Federally Listed Species

4.19.2.1 Proposed Action

Past, present, and reasonably foreseeable future projects are located within or adjacent to the core area of RRCNCA where BLM Sensitive Species are present (chuckwalla, burrowing owl, banded Gila monster, Mojave shovel-nosed snake, desert glossy snake, and Mojave Desert sidewinder). These and other wildlife species can be displaced, injured, or killed when lands are disturbed during construction periods and post-construction visitor use.

Current and planned facility and infrastructure improvements at the Visitor Center, Red Rock Fire Station, and Red Rock Campground would upgrade amenities and systems to meet growing visitor use. As the projects are completed, an increase in visitor use may occur, which could increase the potential for visitor-wildlife interactions and may lead to an increase in animal displacement, harassment, or mortality. However, the projects listed in Table 5 have been developed to concentrate visitor use in designated areas and reduce impacts overall to wildlife, vegetation, and habitat.

The construction of the proposed action is expected to result in impacts to wildlife. Although the Project would disturb habitat and wildlife species during construction, it would not increase visitor usage but instead would better accommodate existing usage thereby preventing additional resource damage. Over the long-term, the proposed improvements in combination with other past, present, and reasonably foreseeable future projects would encourage visitors to remain in developed areas within the RRCNCA, benefitting wildlife and resulting in a beneficial cumulative effect on wildlife in the RRNCA.

4.19.3 Floodplains

4.19.3.1 Proposed Action

The proposed action encounters regulated 100-year floodplains at Sandstone Wash, Red Rock Wash, and Pine Creek Wash. The proposed action would not increase base flood elevations by more than one foot in any of these locations. The parking areas and return route would not cross any floodplains. When combined with past, present, and reasonably foreseeable future actions, the proposed action is not expected to result in cumulative impacts to floodplains.

4.19.4 Fuels/Fire Management

4.19.4.1 Proposed Action

As with the past, present, and reasonably foreseeable actions, fire risk would increase temporarily during the construction of the Project. These risks would be reduced through the implementation of BMPs during construction and compliance with BLM fire restrictions and fire prevention measures. Improvements included in the proposed action (primarily the return route) would contribute positively to the management of fuels and fires in the RRCNCA. The new return route could act as a fuel break that would slow or stop wildfires and would also provide ingress, egress, and quicker response times during wildlife emergencies, increasing both visitor and firefighter safety. Therefore, when combined with other past, present, and reasonably foreseeable future actions, the proposed action is ultimately expected to have a positive cumulative effect on Fuels/Fire management.

4.19.5 Hydrologic Conditions (including Water Quality)

4.19.5.1 Proposed Action

Although the proposed action may result in minor adverse effects when combined with past, present, and reasonably foreseeable actions, neither the construction period nor final operation of the Project would result in substantial changes to existing hydrologic conditions. The net reduction in impervious surface area that would be created by the Project would result in a minor reduction in the amount of stormwater runoff

that would be directed into the washes. Erosion control BMPs implemented throughout construction would minimize any sedimentation of stormwater or other changes to the existing water quality. As a result, when combined with past, present, and reasonably foreseeable future actions, the proposed action would result in long-term beneficial effects.

4.19.6 Invasive Species/Noxious Weeds

4.19.6.1 Proposed Action

Designated trails, trailheads, roads, parking areas, facilities, and infrastructure within the RRCNCA have been developed to provide access and recreational opportunities for visitors. Current and planned facility and infrastructure improvements at the Visitor Center, Red Rock Fire Station, and Red Rock Campground would upgrade amenities and systems to meet growing visitor use. The existing, improved, or new trails, trailheads, roads, and parking areas would encourage recreation use on the trails and built areas. Trail construction would enable a greater range of access and connectivity to other trails and areas within the RRCNCA and may help to disperse recreation use in the core area and throughout RRCNCA, which could facilitate the spread of invasive species and noxious weeds. The Red Rock Hazardous Fuels Reduction project as well as routine invasive weed treatment projects would likely reduce the extent of wildfire and the spread of invasive non-native species that could establish after wildlife events.

Vegetation removal, soil disturbance, and the transport of materials during the construction of the proposed action could create optimal conditions for the establishment of invasive plant species. The increased visitor use associated with other past, present, and reasonably foreseeable future projects could result in adverse cumulative effects on the spread of invasive species and noxious weeds. However, the proposed action is not expected to substantially contribute to these cumulative effects because of the environmental commitments and mitigation measures to reduce the introduction or spread of invasive species and noxious weeds.

4.19.7 Lands/Access

4.19.7.1 Proposed Action

Past, present, and reasonably foreseeable future activities include the development of roads, parking areas, facilities, and infrastructure that have improved access and visitor enjoyment of RRCNCA. As a part of the NLCS, past, present, and reasonably foreseeable future activities have been and would continue to be developed in a manner that conserves, protects, and restores NLCS values, consistent with NLCS policy.

The proposed action would address problems identified within the RRCNCA RMP (e.g., inadequate parking, parking in undesignated areas, vehicle/bicycle conflicts) and would improve the visitor experience to many of the unique features and recreational amenities for which the RRCNCA was designated. Additionally, the project would benefit search and rescue and emergency service activities occurring in the vicinity of Calico Hills and Sandstone Quarry by providing a more direct route to the area's exit. Impacts to wildlife habitat would be minor in comparison to the available habitat within RRCNCA. As a result, the proposed action, when combined with other past, present, and reasonably foreseeable future actions is not expected to result in adverse cumulative effects to National Conservation Lands.

4.19.8 Migratory Birds

4.19.8.1 Proposed Action

Past, present, and reasonably foreseeable future activities include development and improvements to roads, trails, and infrastructure that may have affected or have the potential to affect migratory birds (primarily through impacts to habitat, displacement, or mortality). However, impacts have been and would continue to be minimized with the implementation of BMPs during design and construction. In addition, most of the

projects included in Table 5 are designed to encourage visitors to use designated areas and avoid vegetation and habitat, which may result in long-term benefits to migratory birds.

The construction of the proposed action is not expected to result in adverse effects to migratory birds. The proposed improvements would encourage visitors to remain in developed areas within the RRCNCA; potential impacts during construction would be avoided through the implementation of the provisions set forth in the MBTA.

Overall, the proposed action, combined with past, present, and reasonably foreseeable future actions, would result long-term beneficial cumulative effects to migratory birds by encouraging visitors to remain in developed areas and avoid vegetation and habitat.

4.19.9 Recreation

4.19.9.1 Proposed Action

Past, present, and future designated trails, trailheads, roads, parking areas, facilities, and infrastructure within the RRCNCA have been developed to provide access and recreational opportunities for visitors and cumulatively have improved the recreational experience and opportunities in the RRCNCA.

The 2005 RRCNCA RMP provides management guidance and land use decisions for recreation and resource protection. As growth in the Las Vegas Valley continues, visitation to the RRCNCA will increase. The RRCNCA Transportation Feasibility Study and subsequent Travel and Transportation Management Plan will address current and future visitation conditions and provide plans to concentrate travel and transportation use to designated areas, helping to improve recreational opportunities throughout RRCNCA.

The proposed action is expected to have a positive, beneficial effect on recreation within the RRCNCA. When combined with past, present, and reasonably foreseeable future actions, long-term beneficial cumulative effects to recreation are anticipated.

4.19.10 Socio-Economics

4.19.10.1 Proposed Action

Past, present, and reasonably foreseeable future activities include the development of roads, parking areas, facilities, and infrastructure that have improved access and accommodated growing visitation to the RRCNCA. The proposed project would build on these actions by improving safety and access throughout the project area, and improving the visitor experience in general.

By constructing the return route, the proposed action would reduce the traffic on Scenic Loop Drive after Sandstone Quarry, thereby providing congestion relief for visitors wishing to access the amenities in the west side of RRCNCA. Cyclists, in particular, would reap the benefit of an improved roadway surface and clear ingress/egress markings on Scenic Loop Drive and the adjacent parking areas. Tour guides and other private businesses which operate in RRCNCA (e.g., horse riding, bus tours, guided rock climbs, etc.) would be better accommodated with expanded and improved parking areas. The signage and traffic control improvements on SR 159 leading up to the RRCNCA entrance would better facilitate vehicle and bicycle movement into the RRCNCA. The fee station kiosk parking area signage and circulation improvements would help to eliminate visitors entering RRCNCA without paying. Any potential negative impact from the project would be mitigated through the use of a traffic control plan. When combined with other past, present, and reasonably foreseeable future actions, and with the implementation of mitigation measures, the proposed action is likely to contribute beneficially to the cumulatively socio-economic effects within RRCNCA.

4.19.11 Soils

4.19.11.1 Proposed Action

Facility and infrastructure improvements included in Table 5 are not expected to result in cumulative impacts to soils. Minimal soil disturbance would be created and any residual effects would be minimized through the implementation of BMPs and mitigation measures. In addition, the Project would result in a minor reduction in impervious surface.

The proposed action would cause soil disturbance and increase impervious surfaces by approximately 11.48 acres. Given the reduction in impervious surface, acreage of new soil disturbance in relation to the size of each wash, and the infrequency of heavy precipitation events, soil impacts from stormwater runoff are expected to be minimal. The Proposed Action when combined with other past, present, and reasonably foreseeable future projects would not result in adverse cumulative effects to soils in the RRCNCA because soil disturbance and impervious surface area increases would be minimal.

4.19.12 Threatened, Endangered or Candidate Animal Species

4.19.12.1 Proposed Action

Past, present, and reasonably foreseeable future projects are located within or adjacent to the Core area of RRCNCA where desert tortoises are present. Current and planned facility and infrastructure improvements at the Visitor Center, Red Rock Fire Station, and Red Rock Campground would upgrade amenities and systems to meet growing visitor use. As the projects are completed, an increase in visitor use may occur, which could increase the potential for take of desert tortoise and/or sensitive species through mortality, degradation of habitat, spread of weeds, and increase in the risks of wildfires, vandalism, trash dumping, and poaching. However, the projects listed in Table 5 have been developed to concentrate visitor use in designated areas and reduce impacts overall to wildlife, vegetation, and habitat.

The construction of the proposed action would disturb desert tortoise habitat. Because of the short-term duration of Project activities, proposed minimization measures, and low number of tortoises in the action area, the Project is expected to have a minimal impact on desert tortoises and their habitat. In addition, the proposed improvements would encourage visitors to remain in developed areas within the RRCNCA and avoid vegetation and habitat.

Overall, the proposed action, combined with past, present, and reasonably foreseeable future actions, would be expected to result in long-term beneficial cumulative effects to T&E animal species because the actions would concentrate visitor use in designated areas and would reduce impacts to wildlife, vegetation, and habitat overall.

4.19.13 Vegetation

4.19.13.1 Proposed Action

Past, present, and reasonably foreseeable future projects are located within or adjacent to the Core area of RRCNCA. Because the Project would require the clearing and grubbing of vegetation—most notably along the new bridge alignment at Sandstone Wash, the Project would contribute to cumulative impacts to BLM managed native plant communities. To minimize impacts, the Project will utilize a salvage plan for yucca and cacti, and a restoration plan for vegetation that cannot be salvaged. Construction BMPs will be utilized to further avoid impacts to vegetation. Given the vastness of the 198,000 acres comprising RRCNCA, even when combined with past, present, and reasonably foreseeable actions, the Project would not be expected to significantly impact vegetation within the Project area or within the larger area of RRCNCA.

4.19.14 BLM Special Status Plants

4.19.14.1 Proposed Action

Past, present, and reasonably foreseeable future projects are located within or adjacent to the Core area of RRCNCA where BLM Sensitive Plant Species are present. BLM Sensitive Plant Species known to occur in the Project area (yellow two-tone beardtongue and Blue Diamond cholla) have been reduced through development and historic actions. The historic distribution of the yellow two-tone beardtongue includes 43 recorded occurrences (Glenné, 2003). Presently, the known distribution includes 32 recorded occurrences.

As current and planned projects are completed and growth in the Las Vegas Valley continues, increase in visitor use may occur, which could increase the potential for impacts to vegetation and BLM sensitive species. However, designated trails, trailheads, roads, parking areas, facilities, and infrastructure within the RRCNCA have been developed to concentrate visitor use to designated areas to reduce impacts to vegetation and BLM Sensitive Plant Species.

The proposed action would incrementally contribute to cumulative effects to BLM Sensitive Plant species through direct and indirect impacts to yellow two-tone beardtongue plants and habitat in RRCNCA. The BLM would implement offsite conservation measures consistent with BLM MS 1794- Regional Mitigation Manual to mitigate the effects of the proposed action on these BLM sensitive plant species.

4.19.15 Visual Resources

4.19.15.1 Proposed Action

Past, present, and reasonably foreseeable future activities include development and improvements to roads, trails, and infrastructure that may have affected or have the potential to affect visual resources. However, any roads, trails, parking lots, or transportation infrastructure would be constructed following VRM Class II and III guidelines that would keep a low natural profile and maintain the natural beauty of the RRCNCA.

With the implantation of mitigation measures, the project would not have a significant visual impact. As a result, the proposed action combined with other past, present, and reasonably foreseeable future actions is not expected to result in adverse cumulative effects to visual resources because the actions would conform to VRM II and III guidelines.

4.19.16 Wetlands/Riparian Zones

4.19.16.1 Proposed Action

The construction of past, present, and reasonably foreseeable infrastructure projects, increases the potential for impacts to wetlands, springs, and riparian areas within RRCNCA. Protection and restoration of springs/riparian areas is a key goal in the RMP (2005a). No wetland areas were identified within the Project area, and the two identified riparian springs would not be impacted due to both the type of improvements and the distance to the springs. As a result, the proposed action, when combined with other past, present, and reasonably foreseeable future actions is not expected to result in adverse cumulative effects to wetlands and riparian areas.

4.19.17 Wilderness/Wilderness Study Areas

4.19.17.1 Proposed Action

Past, present, and reasonably foreseeable future activities include the development of trails, trailheads, roads, parking areas, facilities, and infrastructure that have improved access to the RRCNCA as well as to the La Madre Mountain and Rainbow Mountain Wilderness Areas. The potential for increased visitation is high considering the area's scenic attractions, very close proximity to Las Vegas which is expected to increase in

population, and increasing visitor participation in outdoor recreation activities. Managing visitation and recreational uses has been and will continue to be important to achieving a balance between preservation and user enjoyment.

Improvements included the proposed action include the development and expansion of several parking areas that provide indirect access (trailhead access) to both La Madre Mountain and Rainbow Mountain Wilderness Areas. The improvements throughout RRCNCA would not be expected to increase visitation to these areas, but rather better accommodate those visitors whose destination is already wilderness. The improvements included in the proposed action have been identified in the RRCNCA RMP and have been anticipated for more than 20 years. As a result, the proposed action, when combined with other past, present, and reasonably foreseeable future actions is not expected to result in adverse cumulative effects to Wilderness areas. There are no Wilderness Study Areas in the vicinity of the project area.

4.19.18 Wild Horses and Burros

4.19.18.1 Proposed Action

Past, present, and reasonably foreseeable future activities include the development of trails, trailheads, roads, parking areas, facilities, and infrastructure within the RRCNCA as well as to the La Madre Mountain and Rainbow Mountain Wilderness Areas. With increased disturbance there is the potential for more essential habitat loss, increased interactions with the wild horses and burros, and the potential to alter their normal foraging and watering behaviors. The Proposed Action would affect only a small portion of the total habitat available for wild burro use in the RRNCA. The proposed action, when combined with other past, present, and reasonably foreseeable future actions is expected to result in minor adverse cumulative effects to wild horse and burro habitat.

4.20 Mitigation Measures

4.20.1 Invasive Species/Noxious Weeds

- A Weed Management Plan will be implemented by the contractor to control the spread of noxious weeds throughout construction and reclamation. The Weed Plan must be approved by the BLM Weed Management Specialist before construction. Additional measures to control the spread of noxious weeds are listed below.
- The contractor will limit the size of any vegetation and/or ground disturbance to the absolute minimum necessary to perform the activity safely and as designed. The contractor will avoid creating soil conditions that promote weed germination and establishment.
- The contractor will coordinate Project activities with the BLM weed coordinator (702-515-5295) regarding any proposed herbicide treatment. If herbicide treatment is needed, the contractor will prepare, submit, obtain, and maintain a pesticide use proposal for the proposed action.
- The contractor will begin Project operations in weed-free areas whenever feasible before operating in weed-infested areas.
- The contractor will locate pits and staging areas for the use of equipment storage, machine and vehicle parking, or any other area needed for the temporary placement of people, machinery, and supplies. These staging areas will be selected from locations that are relatively weed-free. The contractor will avoid or minimize all types of travel through weed-infested areas or restrict major activities to periods of time when the spread of seed or plant parts are least likely.

- BLM or the contractor will determine equipment cleaning sites. These sites will be coordinated with the BLM. Project-related equipment and machinery (this especially includes the nooks and crannies of undercarriages) will be cleaned of all mud, dirt, and plant parts before moving into relatively weed-free areas and when leaving weed infested sites. Seeds and plant parts need to be collected, bagged, and deposited in landfills through the waste disposal system when practical. (This is not meant to apply to service vehicles that will stay on roadways avoiding weed infested sites.)
- Project workers need to inspect, remove, and dispose of weed seed and plant parts found on their clothing and equipment. Disposal methods vary depending on the Project.
- The proponent will be responsible for controlling all undesirable invading plant species (including listed noxious weeds and other invasive plants identified as undesirable by federal, state, or local authorities) within the boundaries of their authorization area and BLM-authorized ancillary facilities (such as access and utility corridors), including all operating and reclaimed areas, until re-vegetation activities have been deemed successful and responsibility released by the authorized officer. Control standards and measures proposed must conform to applicable state and federal regulations.
- The proponent will use weed-free seed for reclamation; other organic products for erosion control, stabilization, or re-vegetation (such as straw bales, organic mulch) must be certified weed-free.
- The proponent is responsible for ensuring that all Project-related vehicles and equipment arriving at the site (including drill rigs, dozers, support vehicles, pickups, and passenger vehicles, including those of the operator, any contractor, or subcontractor and invited visitors) do not transport noxious weeds onto the Project site. The proponent will ensure that all such vehicles and equipment that will be traveling off constructed and maintained roads or parking areas within the Project area have been power washed, including the undercarriage, since their last off-road use and before off-road use on the Project. When beginning off-road use on the Project, such vehicles and equipment will not harbor soil, mud or plant parts from another locale. Depending on the site setting such as remoteness, or other site condition, the operator may be required to have an onsite wash area identified and readily available. If a noxious weed infestation is known or later discovered on the Project site, Project-related vehicles or equipment that have traveled through such an infestation will be power washed, including the undercarriage, before leaving the site, at an established, identified wash area. Wash water and sediment will be contained in an adjacent settling basin. Should any vegetation emerge in the wash area or settling basin, it will be promptly identified and appropriately controlled if found to be an undesirable invasive plant.

4.20.2 Migratory Birds

- To prevent undue harm, habitat-altering projects or portions of projects should be scheduled outside bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between February 15th and August 31st.
- If a project that may alter any breeding habitat has to occur during the breeding season, then a qualified biologist must survey the area for nests before commencement of construction activities. This will include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests (containing eggs or young) are found, an appropriately sized buffer area must be avoided until the young birds fledge. As the above dates are a general guideline, if active nests are observed outside this range, they are to be avoided as described above.

4.20.3 Recreation

- Implementation of BLM-approved traffic control measures, such as construction cones and construction lights, will be used to minimize traffic delays.

- All areas within the RRCNCA that are currently open to the public will remain open to the public. The BLM and/or the contractor will advise visitors of construction activities. Construction updates and advisements will be available at the field office or Visitor Center.
- The Scenic Loop Drive and Visitor Center will remain open during visitor hours and access to the Red Rock Canyon Campground will be maintained.
- Construction activities and coordination with special recreation permits will be ongoing.

4.20.4 Soils

- A SWPPP will be developed before construction and implemented throughout the life of the Project.
- Impacts to soils will be minimized through implementation of BMPs as identified in the Nevada Department of Environmental Protection BMP Guide.

4.20.5 T&E Animal Species

- *Speed limit:* The speed limit is 35 miles-per-hour on the Red Rock Scenic Loop road. Within Clark County, the speed limit is 25 miles-per-hour on unposted County roads; this speed will be established for all activities at all times unless otherwise designated.
- *Vehicles:* All Project/event-related individuals will check underneath stationary vehicles before moving them.
- *Vehicle traffic:* Traffic will be restricted to the Scenic Loop Drive, unless otherwise authorized by BLM and the USFWS.
- *Litter-control:* This will be implemented and enforced by the contractor or BLM. Trash containers will remain covered, must be raven-proof, and emptied frequently enough to prevent overflow of materials. Trash, litter, Project debris, etc. will be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.
- *Tortoise mortality/injury:* BLM wildlife staff (702-515-5000) and the USFWS (702-515-5230) must be notified of any desert tortoise death or injury as a result of the Project implementation by close of business on the following work day. In addition, the USFWS's Division of Law Enforcement will be notified in accordance with the reporting requirements of this biological opinion.
- *Tortoise activity:* The period of greatest tortoise activity is generally defined as March 1–October 31. However, unseasonably warm weather and/or precipitation outside this period may result in tortoise activity, particularly by hatchlings and juvenile tortoises, and thus warrant adherence to requirements established for periods of greater activity. Similarly, BLM may determine that additional measures are appropriate for projects planned for the end or beginning of either period if conditions are suitable for desert tortoises to be active.
- *Education program:* The BLM or their designee shall (as defined below) present a tortoise education program to all foremen, workers, permittees, and other employees or participants involved on projects covered under this opinion. The program will consist of either a presentation or fact sheet as determined by Project-level consultation between BLM and the USFWS. The program or fact sheet will include information on the life history of the desert tortoise, legal protection for desert tortoises, penalties for violations of federal and state laws, general tortoise activity patterns, reporting requirements, measures to protect tortoises, terms and conditions of the biological opinion, and personal measures employees can take to promote the conservation of desert tortoises. The definition of "take" will also be explained. Workers and Project associates will be encouraged to carpool to and from the Project sites. Specific and detailed instructions will be provided on the proper techniques to

capture and move tortoises that appear onsite if appropriate, in accordance with USFWS-approved protocol. Currently, the USFWS-approved protocol is Desert Tortoise Council 1994, revised 1999.

- *Biologist approval:* Biologists to be used to implement the terms and conditions of the biological opinion, or permit issued by BLM, must be approved by the USFWS. Any biologist and/or firm not previously approved must submit a statement of qualifications in the USFWS-developed format and be approved by USFWS before authorized to represent BLM in meeting compliance with the terms and conditions of the biological opinion. Other personnel may assist with implementing conservation measures, but must be under direct field supervision by the authorized biologist.
- *Biologist qualifications:* In accordance with Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise (USFWS, 1992), an authorized desert tortoise biologist should possess a bachelor's degree in biology, ecology, wildlife biology, herpetology, or closely related fields as determined by BLM and the USFWS. The biologist must have demonstrated prior field experience using accepted resource agency techniques to survey for desert tortoises and tortoise sign, which should include a minimum of 60 days of field experience. All tortoise biologists will comply with the USFWS-approved handling protocol (USFWS, 1999). The biologist and/or monitor must be familiar with the terms and conditions of the biological opinion that resulted from Project-level consultation between BLM and the USFWS.
- *Tortoise in harm's way:* If a tortoise is found within the Project/activity site in harm's way, all potentially harmful activity will cease until the tortoise moves or is moved out of harm's way by an authorized biologist. If a desert tortoise is in imminent danger, the tortoise will be moved out of harm's way and on to adjacent BLM land, using techniques described in the tortoise education program.
- *Moving tortoises:* Tortoises that are moved offsite and released into undisturbed habitat on public land must be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibernaculum in which it was found, or in an artificially constructed burrow in accordance with the tortoise handling protocol. Tortoises encountered will be treated in a manner consistent with the appropriate measures in this biological opinion.
- *Permits:* All appropriate state and federal permits, including Nevada Division of Wildlife and USFWS permits for handling desert tortoises or their parts, must be acquired by the tortoise biologists or other personnel before Project initiation and before handling any desert tortoise or their parts, or conducting any activity requiring a permit.
- *Project oversight:* A BLM representative(s) will be designated, who will be responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and re-initiation requirements contained in this biological opinion. The designated representative will provide coordination among the permittee, contractor, BLM, and the USFWS.
- *Desert tortoise burrows:* Burrows will be avoided whenever possible; if not, burrows will be cleared in accordance with the measures set forth in this biological opinion.
- *Heat stress:* Desert tortoises encountered experiencing heat stress will be placed in a tub, by an authorized tortoise biologist, with 1 inch of 76 to 90 degree Fahrenheit (°F) water for at least 20 minutes or until heat stress symptoms are no longer evident.
- *Temperature restrictions:* Desert tortoises will be treated in a manner to ensure that they do not overheat, exhibit signs of overheating (such as gasping, 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. No desert tortoise will be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason

when the ambient air temperature is above 95°F (35 degrees Celsius [°C]). Ambient air temperature will be measured in the shade, protected from wind, at a height of 2 inches (5 centimeters) above the ground surface. No desert tortoise will be captured if the ambient air temperature is anticipated to exceed 95°F (35°C) before handling and relocation can be completed. If the ambient air temperature exceeds 95°F (35°C) during handling or processing, desert tortoises will be kept shaded in an environment that does not exceed 95°F (35°C), and the animals will not be released until ambient air temperature declines to below 95°F (35°C).

- *Reporting:* The contractor, permittee, or Project lead if an internal action, must submit a document to BLM wildlife biologist within 30 days of completion of the Project showing the number of acres disturbed, remuneration fees paid, and number of tortoises observed or taken, which includes capture and displacement, killed, injured, or harassed by other means, during implementation of programmatic actions.
- *Project boundaries:* Limits of disturbance will be clearly indicated on the design plans. All activities will be confined to designated areas.

4.20.5.1 For Actions Involving New Ground Disturbance

- *Blading of vegetation:* Will occur only to the extent necessary and will be limited to areas designated for that purpose by BLM or tortoise biologist.
- *Fees:* Before issuance of authorization, and before any surface-disturbing activity associated with the proposed Project, the BLM will pay a remuneration fee of \$843 for each acre of surface disturbance, if paid before March 1, 2016. This rate will be indexed annually for inflation based on the Bureau of Labor Statistics Consumer Price index for All Urban Consumers (CPI-U). Information on the CPI-U can be found at <http://stats.bls.gov/news.release/cpi.nr0.htm>. An exception is made if the disturbance for the Project is less than 0.25 acre of disturbance or for activities that result in a long-term benefit for the species (for example, trail realignment to minimize habitat impacts). A total of approximately 36.77 acres of disturbance are within tortoise habitat; therefore, fees are required.
- *Notification:* The Project applicant/BLM lead will notify BLM wildlife staff at least 10 days before initiation of the Project. Notification will be made to BLM's wildlife staff representative responsible for NEPA review of the Project at 702-515-5000.
- *Clearance:* All Project areas, staging areas, etc. will be cleared of tortoises by an authorized tortoise biologist no more than 3 days before the start of ground disturbance using 100 percent coverage survey techniques. Burrows found outside the area to be disturbed will be flagged and avoided. Clearance will involve excavating nests; relocating eggs; flagging avoidable burrows; collapsing unavoidable, or unoccupied burrows; and relocating tortoises in accordance with the USFWS-approved protocol for handling desert tortoises (USFWS, 1999).

4.20.5.2 Additional Mitigation Measures

- Trenches or deep holes will be backfilled or covered at the end of each day during hours of inactivity to prevent animals from inadvertently falling in.
- Either a tortoise monitor and/or temporary fencing will be used to mitigate potential impacts. The exact method will be determined during final design. A tortoise monitor will be onsite for Project construction during the period of greatest tortoise activity (generally March 1 through October 31). An authorized tortoise biologist will be on call at all times. If tortoise fencing will be utilized, it should be installed on both sides of the construction area for the New Return Route to prohibit the movement of tortoise across work areas.

4.20.6 Vegetation

- Cactus and yucca are considered government property under the forestry program. If cactus and yucca are unable to be avoided, they would be salvaged and replanted in the temporary use areas following completion of construction.
- Unless otherwise directed by the BLM botanist, all replanted cactus and yucca would be watered and otherwise maintained for a period of 1 year.
- To ensure successful salvage and transplant, all cactus and yucca would be salvaged using a contractor (or other approved by the BLM botanist) with at least 3 years of experience salvaging and maintaining plant materials in the Mojave or Sonoran deserts.
- A BLM-approved restoration plan approved by the BLM Botanist and consistent with guidelines for the RRCNCA will be put in place before construction.
- All areas of disturbance will be restored immediately after completion of the Project.

4.20.7 BLM Special Status Plant Species

- The BLM will implement off site conservation measures consistent with BLM MS 1794 Regional Mitigation Manual. Offsite mitigation will include seed collection of both affected and adjacent populations and long-term conservation storage by adding the species to the National Collection of Endangered Plants. Offsite conservation will benefit the species and public by conserving genetic diversity. The loss of genetic diversity is one of the biggest threats to rare plant populations. Seed from the species will be available for future conservation efforts by BLM and other federal agencies. In addition, offsite conservation will help address genetic erosion created by hybridization with *Penstemon palmeri*; the introduction of *Penstemon palmeri* now threatens many of the population occurrences in the RRCNCA.

4.20.8 Visual Resources

- For the new return route, ensure that any areas of disturbance along the roadway are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation
- For the expansions of the parking areas at Calico 1, Sandstone Quarry, Lost Creek, and Willow Springs, ensure that any areas of disturbance along the edges of the parking lot are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation.
- For the expansions of the parking areas at Calico 1, Sandstone Quarry, Lost Creek, and Willow Springs, the areas in the plans and in the simulation shown as striped that indicate that parking will not be taking place there should be left unpaved, and if already vegetated, the existing vegetation should be left in place. If there is currently no vegetation in these areas, it should be replanted.
- For the expansion of the High Point Overlook parking area, retaining walls will be constructed in a manner that minimizes the disturbance of surrounding vegetation
- For the expansion of the High Point Overlook parking area, retaining walls should be tinted/painted with a color that matches the surrounding soils
- For the signage that will be installed along Scenic Loop Drive, low profile signs designed using the Look and Feel Modernization Initiative for NLCS units will replace most signage on the loop and also at the Visitor Center.

4.20.9 Wetlands/Riparian Zones

- A Nationwide Permit will be required from the U.S. Army Corps of Engineers for permanent impacts within the washes.

5.0 Agency Consultations

Table 6. List of Persons, Organizations, and Agencies Consulted

Name	Purpose and Authorities for Consultation or Coordination	Findings and Conclusions
USFWS	Formal Section 7 consultation was completed concerning potential impacts to Mojave Desert tortoise.	The proposed action is not likely to jeopardize the continued existence of the threatened Mojave Desert tortoise. The Project must comply with mitigation measures included in this EA.

6.0 List of Preparers

Table 7. List of Preparers

Name	Title	Responsible for the Following Section(s) of this document
BLM Staff		
Catrina Williams	Acting Field Manager	Oversight/Supervision
Robbie McAboy	Assistant Field Manager	Oversight/Supervision
Josh Traverse	Supervisory Outdoor Recreation Planner	Oversight/Supervision
Lisa Christianson	Air Resource Specialist	Air Resources/ Greenhouse Gas Emissions/ Wastes (hazardous or solid)
Carla Wise	Wildlife Biologist	Areas of Critical Environmental Concern/ Fish and Wildlife Excluding Federally Listed Species/ Migratory Birds/ Threatened, Endangered or Candidate Animal Species
Mathew Hamilton	Wilderness Specialist	BLM Natural Areas/ Wilderness/WSA/ Lands with Wilderness Characteristics
Mark Boatwright	Archeologist	Cultural Resources/ Native American Religious Concerns/ Paleontology
Susan Farkas	Planning and Environmental Coordinator	Environmental Justice/ Socio-economics
Boris Poff	Hydrologist	Floodplains/ Hydrologic Conditions/ Soils/ Water Resources/Quality (drinking/surface/ground)/ Wetlands/Riparian Zones
Mark Spencer	Field Manager	Project oversight
Lauren Brown	Weeds Management Specialist	Invasive Species/Noxious Weeds/
Sean McEldery	Fuels Program Manager	Fuels/Fire Management
Lori Dee Dukes	Geologist	Geology / Mineral Resources/Energy Production
Kerri-Anne Thorpe	Realty Specialist	Lands/Access
Fred Edwards	Botanist	Livestock Grazing/ Rangeland Health Standards/ Threatened, Endangered or Candidate Plant Species/ Vegetation Excluding Federally Listed Species/ Woodland / Forestry
Kathy August	Recreation Specialist	Recreation
Brenda Warner	Visual Resource Specialist	Visual Resources
Krystal Johnson	Wild Horse and Burro Specialist	Wild Horses and Burros/ Farmlands
Kirsten Cannon	Public Affairs	Public Involvement
FHWA-CFLHD Staff		
Matt Ambroziak, P.E.	Project Manager	Project Delivery

Table 7. List of Preparers

Name	Title	Responsible for the Following Section(s) of this document
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Bill Lang, P.E	Project Manager	Project Delivery
Brett Weiland	Senior Environmental Planner	Environmental Lead
Jessica Birnbaum	Biologist	Natural Resources/Threatened and Endangered Species
Candice Hein, P.E.	Project Engineer	Roadway Design
Doug Stewart, P.E.	Project Engineer	Drainage Design
John Rohner, P.E.	Project Engineer	Structure Design

7.0 References

- Baker, M.A. 2005. *Current knowledge and conservation of *Cylindropuntia multigeniculata* (Cactaceae), the Blue Diamond cholla*. Status Report Prepared for U.S. Fish and Wildlife Service, Nevada State Office, Reno, Nevada.
- Bureau of Land Management (BLM). 1998. National Environmental Policy Act (NEPA) Handbook.
- . 2001. Biological Soil Crusts: Ecology and Management. Technical Reference 1730-2.
- . 2005a. Red Rock Canyon National Conservation Area (RRCNCA) Resource Management Plan.
- . 2005b. RRCNCA Resource Management Plan and Record of Decision.
- . 2006. Las Vegas Field Office Weed Plan.
- . 2011. *National Landscape Conservation System 15-Year Strategy 2010-2025: The Geography of Hope*.
- . 2012. Final Environmental Assessment Red Rock Hazardous Fuels Reduction Project. DOI-BLM-NV-S000-2011-0002-EA
- Clark County. 2000. *Final Clark County Multiple Species Habitat Conservation Plan and Environmental Impact Statement for Issuance of a Permit to Allow Incidental Take of 79 Species in Clark County, Nevada*. September.
- Glennie, G. 2003. Reproductive biology, hybridization isolating mechanisms, and conservation implications of two rare subspecies of *Penstemon bicolor* (Brandeg.) Clokey and Keck; *ssp. bicolor* and *ssp. roseus* Clokey and Keck (Scrophulariaceae s.1.) in Clark County, Nevada. Logan, Utah: M.S. thesis, Utah State University. UMI Dissertation Information Service, order number 1416601, document number 437210, Ann Arbor, Michigan.
- Hann, W.J. and D.L. Bunnell. 2001. "Fire and land management planning and implementation across multiple scales." *International Journal of Wildland Fire*.
- Las Vegas Convention & Visitors Authority (LVCVA). 2014. Visitation Statistics. <http://www.lvcva.com/stats-and-facts/visitor-statistics/>. Accessed April 27, 2015.
- National Invasive Species Council (NISC). 2008. Executive Order 13112.
- Nevada Department of Wildlife (NDOW). 2012. *Nevada Wildlife Action Plan*. September 6.
- Nevada State Demographer's Office (NVSDO). 2014. Nevada Population Estimates. <http://nvdemography.org/data-and-publications/estimates/>. Accessed April 27, 2014.
- RRCNCA Programmatic Biological Opinion. 2014. Prepared for the BLM. File No. 1-5-04-F-526.
- Smith, F.J. 2005. Current knowledge and conservation status of *Penstemon bicolor* (Brandege) Clokey & Keck (Plantaginaceae), the two-tone beardtongue. Status Report Prepared for Nevada Power Company, Las Vegas, Nevada and U.S. Fish and Wildlife Service, Nevada State Office, Reno, Nevada.
- U.S. Census Bureau. 2014. Clark County QuickFacts. Retrieved from U.S. Census Bureau

database (State & County QuickFacts): <http://quickfacts.census.gov/qfd/states/32/32003.html>. Accessed April 27, 2015.

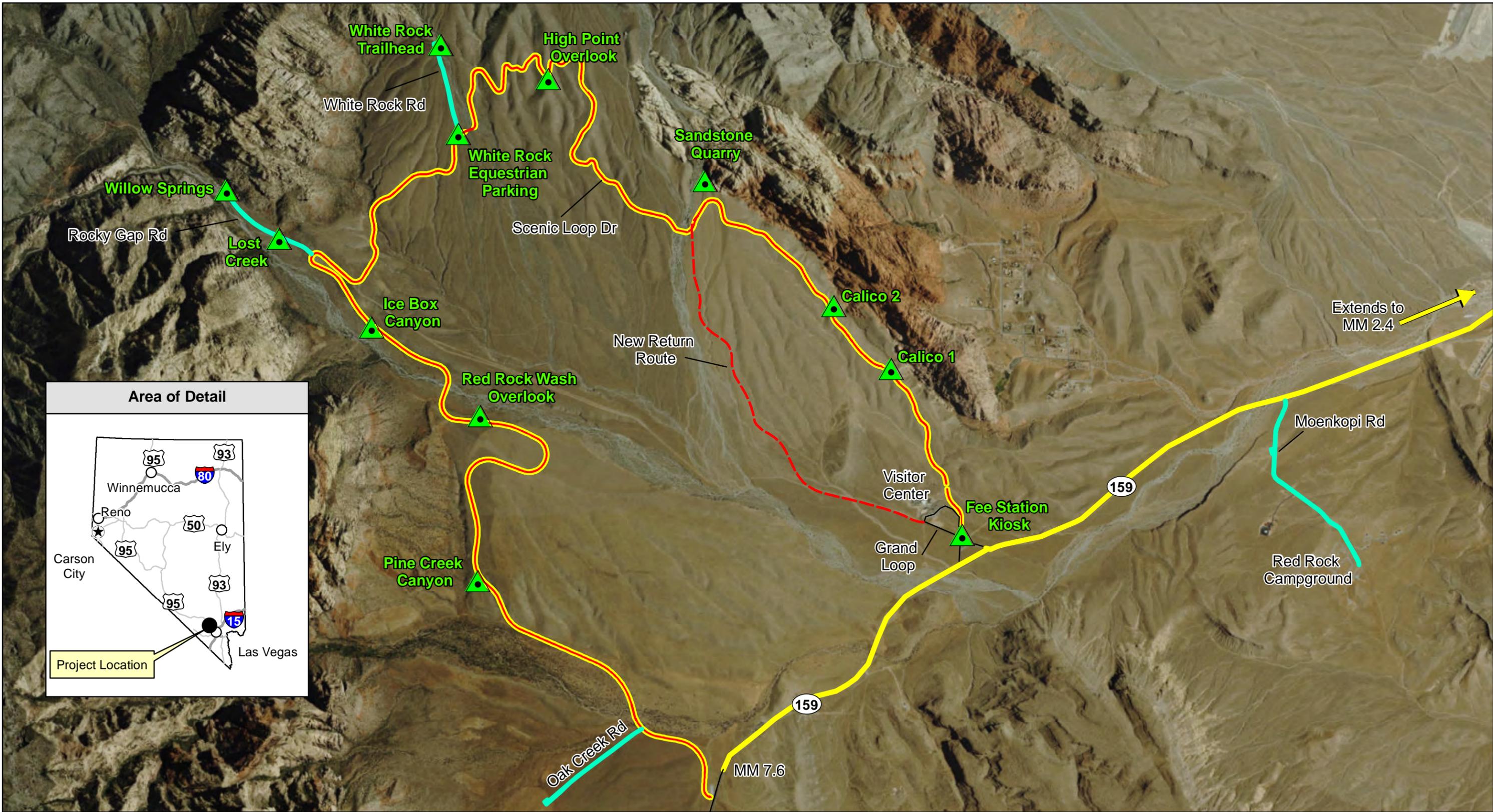
U.S. Fish and Wildlife Service (USFWS). 1992. Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise.

—. Revised 1999. U.S. Fish and Wildlife Service, Desert Tortoise Council 1994, revised 1999.

U.S. Geological Survey (USGS). 2011. Gap Analysis Program (GAP).

Appendix A

Figures



- - - New Return Route
 - Improvements to Secondary Roads
 - ▲ Parking Improvement Areas
 - Scenic Loop Drive Pavement Rehabilitation
 - Traffic Control and Signage
- Data Date: May, 2015

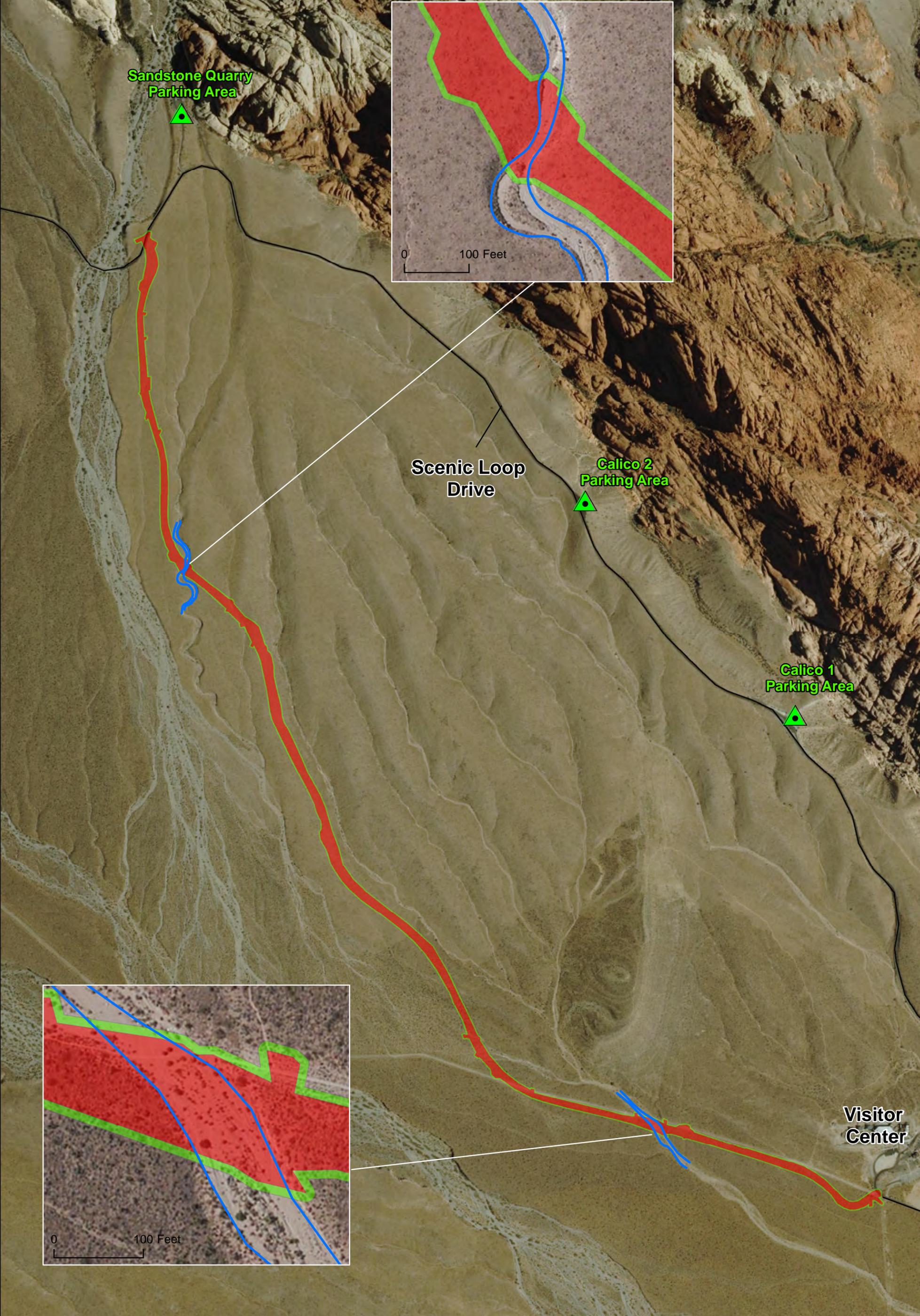
N

0 1 Miles

IMAGE SOURCE: ESRI WORLD TOPOGRAPHIC MAP
DATA SOURCE: NEVADA BLM 4/1/2015

**Figure 1
Project Location**

BLM-FHWA Red Rock Canyon
Red Rock Canyon National Conservation Area
Scenic Loop Drive and Parking Areas Improvements Project
Clark County, Nevada

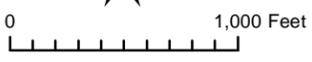


- New Permanent Disturbance
- New Temporary Disturbance
- Water of the U.S. OHWM
- Parking Area Improvements

Data Date: May, 2015



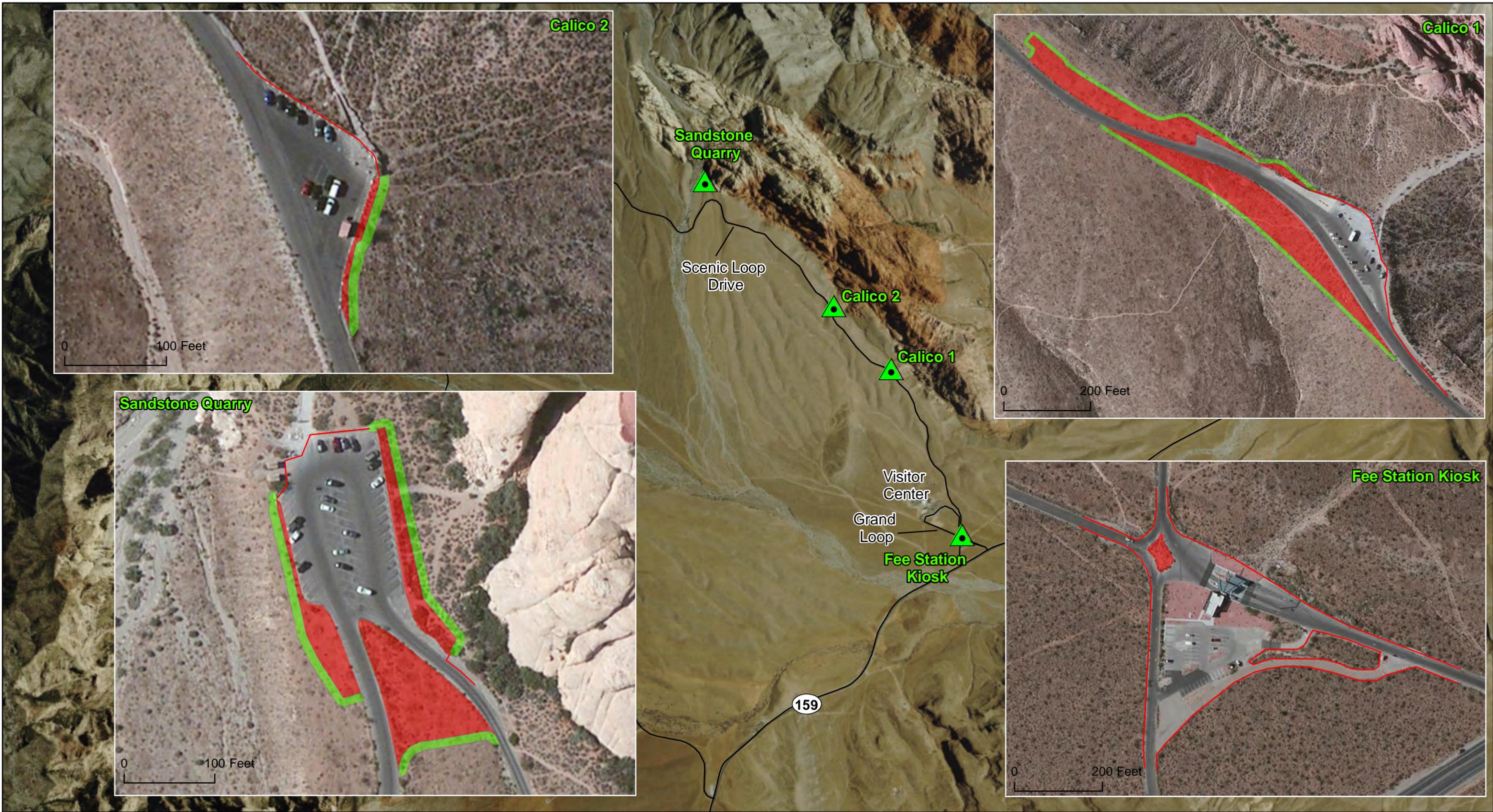
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0 1,000 Feet

IMAGE SOURCE: ESRI WORLD TOPOGRAPHIC MAP
DATA SOURCE: NEVADA BLM 4/1/2015

Figure 2
New Return Route
 BLM-FHWA Red Rock Canyon
 Red Rock Canyon National Conservation Area
 Scenic Loop Drive and Parking Areas Improvements Project
 DOI-BLM-NV-S020-2015-0002-EA
 Clark County, Nevada



- New Permanent Disturbance
- New Temporary Disturbance
- ▲ Parking Improvement Areas
- Limits of Disturbance

Data Date: May, 2015

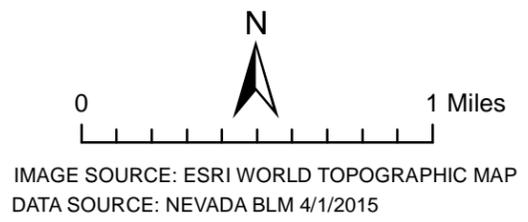


Figure 3a
Parking Improvement Areas
 BLM-FHWA Red Rock Canyon
 Red Rock Canyon National Conservation Area
 Scenic Loop Drive and Parking Areas Improvements Project
 DOI-BLM-NV-S020-2015-0002-EA
 Clark County, Nevada



- New Permanent Disturbance
- New Temporary Disturbance
- ▲ Parking Improvement Areas
- Limits of Disturbance

Data Date: May, 2015

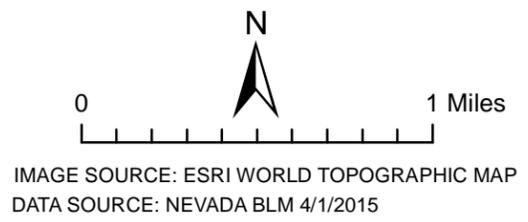


Figure 3b
Parking Improvement Areas
 BLM-FHWA Red Rock Canyon
 Red Rock Canyon National Conservation Area
 Scenic Loop Drive and Parking Areas Improvements Project
 DOI-BLM-NV-S020-2015-0002-EA
 Clark County, Nevada



- New Permanent Disturbance
- New Temporary Disturbance
- Parking Improvement Areas
- Limits of Disturbance

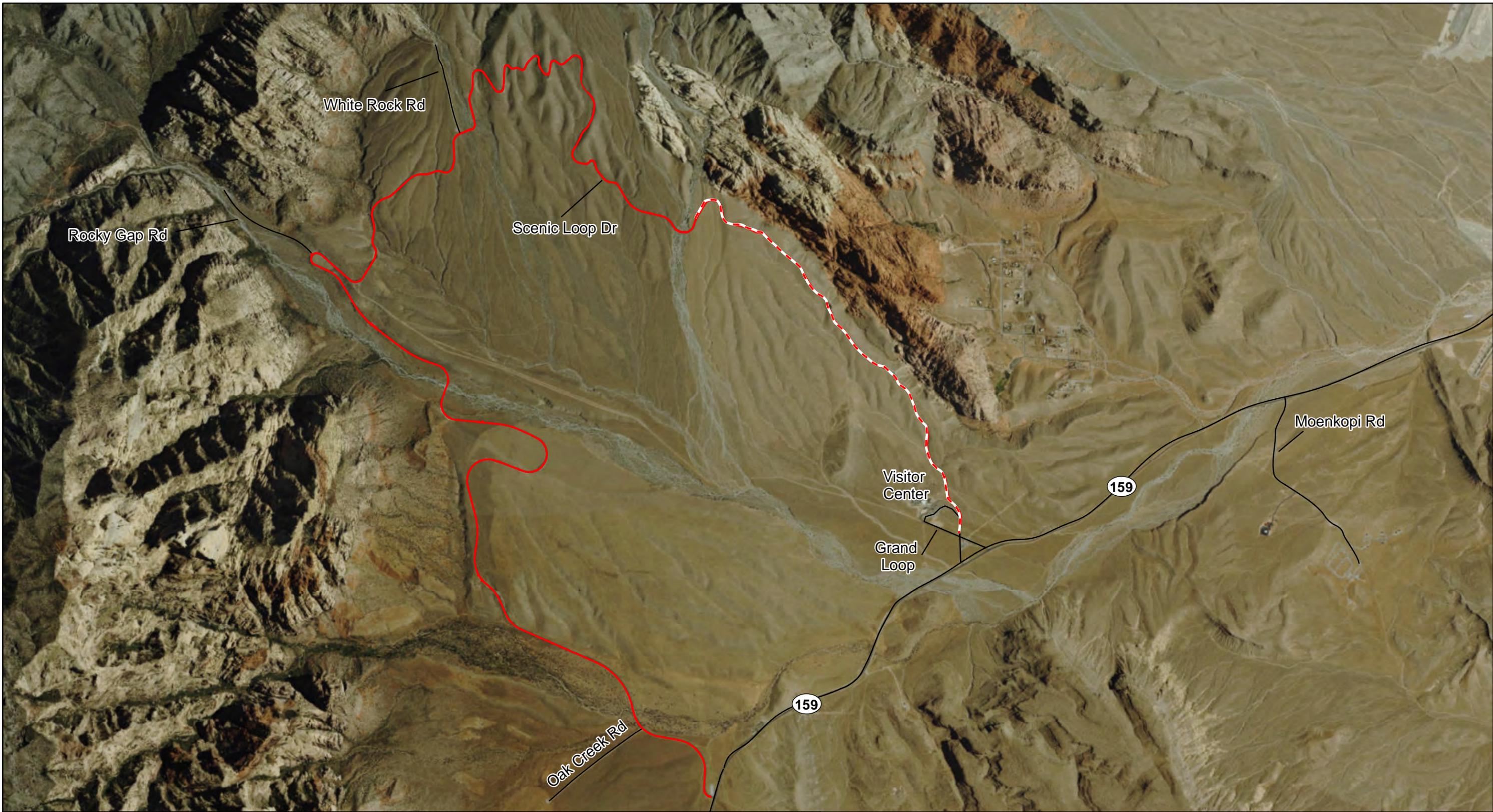
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0 1 Miles

IMAGE SOURCE: ESRI WORLD TOPOGRAPHIC MAP
DATA SOURCE: NEVADA BLM 4/1/2015

Figure 3c
Parking Improvement Areas
 BLM-FHWA Red Rock Canyon
 Red Rock Canyon National Conservation Area
 Scenic Loop Drive and Parking Areas Improvements Project
 DOI-BLM-NV-S020-2015-0002-EA
 Clark County, Nevada



- Segment 1 (full rehabilitation)
- Segment 2 (partial rehabilitation)

Data Date: May, 2015

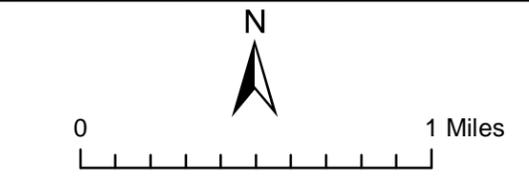


IMAGE SOURCE: ESRI WORLD TOPOGRAPHIC MAP
 DATA SOURCE: NEVADA BLM 4/1/2015

Figure 4
Scenic Loop Drive Pavement Rehabilitation

BLM-FHWA Red Rock Canyon
 Red Rock Canyon National Conservation Area
 Scenic Loop Drive and Parking Areas Improvements Project
 DOI-BLM-NV-S020-2015-0002-EA
 Clark County, Nevada

* The Sandstone Quarry Wash and Red Rock Wash low water crossings are currently under construction as new bridges. These improvements were previously cleared in BLM Environmental Assessment DOI-BLM-NV-S020-2014-0007-EA in August of 2014. The bridge sections of pavement would be excluded from the Scenic Loop Drive improvements included in this project.



- New Permanent Disturbance
- Rehabilitation (no permanent or temporary impacts)
- New Temporary Disturbance

Data Date: May, 2015

N

0 1 Miles

IMAGE SOURCE: ESRI WORLD TOPOGRAPHIC MAP
 DATA SOURCE: NEVADA BLM 4/1/2015

Figure 5
Improvements to Secondary Roads
 BLM-FHWA Red Rock Canyon
 Red Rock Canyon National Conservation Area
 Scenic Loop Drive and Parking Areas Improvements Project
 DOI-BLM-NV-S020-2015-0002-EA
 Clark County, Nevada

Appendix B
Supporting Documentation
