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Environmental Assessment No: DOI-BLM-AZ-G020-2014-0031-EA

FHWA-CFLHD Project Number: AZ FTBL 900(1)

Environmental Assessment
For
Las Cienegas National Conservation Area
Road Improvements and Low-water Crossings

September 2014

Gila District
Tim Shannon, District Manager
Tucson Field Office
Vi Hillman, Field Manager
3201 East Universal Way
Tucson, Arizona 85756



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Table of Contents

1.0	Introduction.....	1
1.1	Identifying Information.....	1
1.1.1	Title, Environmental Assessment (EA) Number, and Type of Project	1
1.1.2	Location of Project.....	1
1.1.3	Name and Location of Preparing Office.....	3
1.2	Background	3
1.3	Purpose and Need for Action.....	4
1.4	Decision to Be Made	4
1.5	Scoping and Issues	4
1.5.1	Internal and External Scoping.....	4
1.5.2	Issues.....	4
2.0	Alternatives	6
2.1	No Action Alternative	6
2.2	Proposed Action.....	6
2.2.1	Road Improvements	7
2.2.2	Low-Water Crossings	13
2.2.3	Drainage Improvements	14
2.3	Project Design Features and Best Management Practices	15
2.4	Alternatives Considered but not Analyzed in Detail.....	19
2.5	Conformance	20
3.0	Affected Environment and Environmental Consequences	21
3.1	Cumulative Effects	26
3.2	Threatened, Endangered, and Special Status Species	29
3.2.1	Affected Environment.....	29
3.2.2	Environmental Consequences	31
3.3	Fish and Wildlife Excluding Federally Listed Species	34
3.3.1	Affected Environment.....	34
3.3.2	Environmental Consequences	38

3.3.3	Cumulative Effects	42
3.4	Hydrologic Conditions and Water Quality	42
3.4.1	Affected Environment.....	42
3.4.2	Environmental Consequences	43
3.4.3	Cumulative Effects	44
3.5	Vegetation, Noxious Weeds, Invasive Species.....	45
3.5.1	Affected Environment.....	45
3.5.2	Environmental Consequences	45
3.5.3	Cumulative Effects	46
3.6	Recreation and Access	46
3.6.1	Affected Environment.....	47
3.6.2	Environmental Consequences	47
3.6.3	Cumulative Effects	49
3.7	Soils	50
3.7.1	Affected Environment.....	50
3.7.2	Environmental Consequences	50
3.7.3	Cumulative Effects	51
3.8	Wetlands and Riparian Areas.....	51
3.8.1	Affected Environment.....	51
3.8.2	Environmental Consequences	52
3.8.3	Cumulative Effects	53
3.9	Visual Resources	55
3.9.1	Affected Environment.....	55
3.9.2	Environmental Consequences	56
3.9.3	Cumulative Effects	56
3.10	Mitigation Measures.....	56
3.10.1	Invasive Species/Noxious Weeds.....	57
3.10.2	Migratory Birds and Federally Listed Species	57
3.10.3	Recreation.....	57

3.10.4	Soils.....	57
4.0	Agency Consultations	58
5.0	List of Preparers	59
6.0	References	60

List of Tables

Table 1.	Project Area Location Public Land Survey System (PLSS) ¹	3
Table 2.	Low-Water Crossing Locations and Size	13
Table 3.	Affected Resources Form	21
Table 4.	Present and Reasonably Foreseeable Future Actions.....	27
Table 5.	List of Species and Critical Habitat Covered by Past ESA Section 7 Actions.....	31
Table 6.	Effects Determinations for Proposed or Federally listed species and (proposed or designated) Critical Habitat.	32
Table 7.	BLM Sensitive Species Further Evaluated	35
Table 8.	List of Persons, Organizations, and Agencies Consulted.....	Error! Bookmark not defined.

List of Figures

Figure 1.	Project Area Location Map.....	2
Figure 2.	Proposed Project Elements Map.....	8
Figure 3.	Low Water Crossing	14
Figure 4.	Potential Realignment Along LC6900 (Main Road South)	20
Figure 5.	Recreation Sites Near the Project Area.....	48
Figure 6.	Potentially Jurisdictional Waters of the US.....	54

Appendices

Appendix A:	Biological Evaluation
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Acronyms

DR	Decision Record
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
FEMA	Federal Emergency Management Act
FHWA-CFLHD	Federal Highway Administration - Central Federal Lands Highway Division
FONSI	Finding of No Significant Impact
LCNCA	Las Cienegas National Conservation Area
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NWI	National Wetlands Inventory
PVC	Polyvinyl Chloride
PLSS	Public Land Survey System
RMP	Resource Management Plan
SHPO	State Historical Preservation Office
AZPDES	Arizona Pollutant Discharge Elimination System
SWPPP	Storm Water Pollution Prevention Plan
USACE	US Army Corps of Engineers
BLM	US Bureau of Land Management
USFWS	US Fish & Wildlife Service
VRM	Visual Resource Management

1.0 Introduction

This Environmental Assessment (EA) evaluates the US Bureau of Land Management (BLM) and the Federal Highway Administration - Central Federal Lands Highway Division (FHWA-CFLHD) proposal for the roadway safety improvements within Las Cienegas National Conservation Area (LCNCA). If approved, LCNCA Road Improvements and Low-water Crossings Project will be built as a phased construction project.

The BLM, in partnership with FHWA-CFLHD are proposing roadway safety and drainage improvements within LCNCA. This EA discloses the environmental impacts and mitigation for the construction, operation, and maintenance of the Proposed Action. The No Action Alternative is included to provide a baseline comparison of impacts as required by the National Environmental Policy Act (NEPA). The Tucson Field Office Manager will first determine whether an environmental impact statement (EIS) is required based on the significance of environmental effects (40 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 (EA) Number, and Type of Project

Las Cienegas Road Improvement and Low-Water Crossings Project

BLM Project Number: DOI-BLM-AZ-G020-2014-0031-EA

CFLHD Project Number: AZ FTBL 900(1)

Environmental Assessment Prepared: September 8, 2014

1.1.2 Location of Project

The proposed project is located in LCNCA; seven miles northeast of Sonoita, Arizona (see Figure 1). The project area consists of 3.04 miles of LC6900 (HWY 83 Entrance Road), 0.2 miles of LC6900E, 1.7 miles of LC6901 (passes by the Airstrip Group Site), and 8.1 miles of LC6900 (Main Road South) (see **Figure 1**).

Figure 1. Project Area Location Map

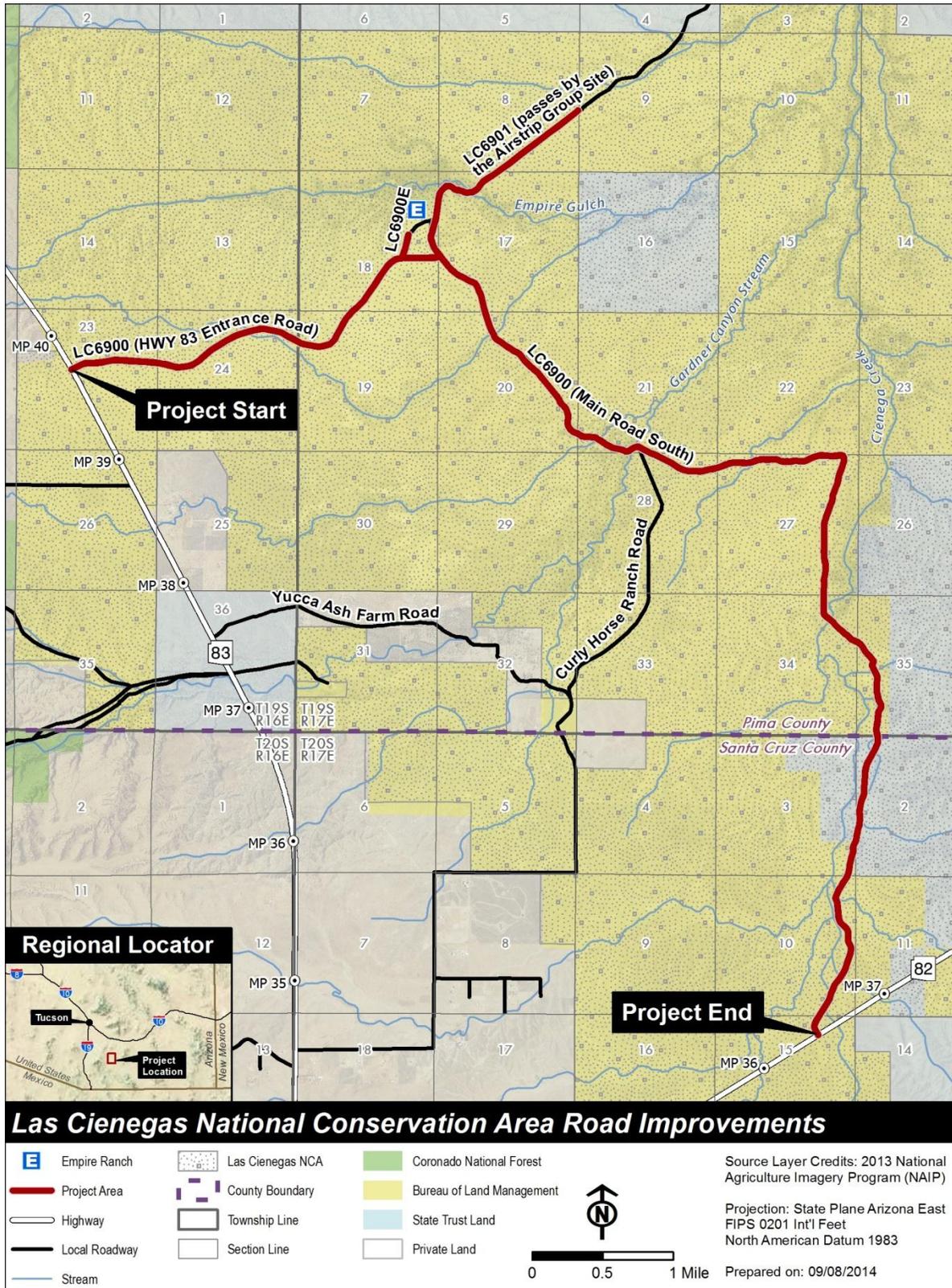


Table 1. Project Area Location Public Land Survey System (PLSS)¹

Project Segment	Section	Township	Range
LC6900 (HWY 83 Entrance Road)	23, 24, 25,	19S	16E
	18, 19	19S	17E
LC6900E	18	19S	17E
LC6901 (passes by the Airstrip Group Site)	8	19S	17E
LC6900 (Main Road South)	17, 20, 21, 23, 27, 34, 35	19S	17E
	2, 3, 10, 15	20S	17E

¹ Gila-Salt River Principal Meridian

1.1.3 Name and Location of Preparing Office

US Bureau of Land Management
Tucson Field Office
3201 E Universal Way
Tucson, AZ 85756

1.2 Background

This site-specific EA, as required by NEPA, provides the analytical framework for the BLM to evaluate impacts on public land resources and make an informed and documented decision. If the proposed project is approved, the Decision Maker may choose to require additional mitigation measures.

The BLM, Tucson Field Office is responsible for managing LCNCA. LCNCA was designated as a National Conservation Area for its grasslands and woodlands which connect several mountain ranges and include lush riparian corridors. Cienega Creek, a perennial riparian corridor, provides habitat for a diverse plant and animal community. LCNCA is approximately 45,000 acres and is located in southeastern Arizona on the border of Pima County and Santa Cruz County, approximately 45 miles from Tucson, Arizona. The roads within the project area provide year-round recreational access within LCNCA and access for US Border Patrol and BLM law enforcement. The roads within the project area also directly connect to Arizona State Route 82 and 83 which provide access to the Coronado National Forest, located west, south, and east of LCNCA. LCNCA recreational activities include wildlife viewing, bird watching, primitive camping, picnicking, hiking, mountain biking, horseback riding, historic sites, hunting, photography, and scenic drives (BLM, 2014).

The LCNCA is also home to unique and rare vegetative communities including five of the rarest habitat types in the American Southwest: cienegas (marshlands), cottonwood-willow riparian forests, sacaton grasslands, mesquite bosques, and semi-desert grasslands (BLM, 2014). The historic Empire Ranch remains a working cattle ranch and now operates under a BLM rangeland management style unique to the area.

1.3 Purpose and Need for Action

The purpose of LCNCA road improvement project is to improve safety for vehicles, bicyclists, equestrians, and pedestrians, reduce operations and maintenance costs, and improve drainage.

The need for the action is that the roads cross several large washes and during large storms the existing roads become impassable and water in the washes cause erosion of the road and roadside ditches. The existing gravel roads require costly annual maintenance including gravel replacement, culvert cleaning, and ditch repair. Some of the existing culverts are damaged or clogged, and no longer function properly. Existing features within and adjacent to the roads present safety concerns for traffic, including narrow cattle guards, unmarked culverts, and overgrown vegetation. Additionally, signs within the project area do not meet the required reflectivity standards, which cause additional safety issues.

1.4 Decision to Be Made

The decision to be made is whether to approve, not approve, or approve with modifications the proposed LCNCA road improvement project as described in this document.

1.5 Scoping and Issues

1.5.1 Internal and External Scoping

A series of meetings were held between the BLM and FHWA-CFLHD to determine the scope of environmental documentation and analysis required for this project.

The BLM provided an overview of the proposed project on Friday, May 2, 2014 at the BLM Tucson Field Office's biannual Biological Planning meeting. The following stakeholders were present at the Biological Planning meeting: Cienega Watershed Partnership, Arizona Antelope Foundation, Sky Island Alliance, Arizona Game and Fish Department, Coronado National Forest, The Nature Conservancy, US Fish & Wildlife Service (USFWS), Huachuca Hiking Club, FROG project, and Borderlands Restoration. The BLM also provided an overview of the Road Improvement Project at the Sonoita Valley Planning Partnership meeting on Saturday, August 23, 2014.

1.5.2 Issues

Threatened, Endangered or Special Status Species

- What would be the effect of the Proposed Action and No Action alternative on Chiricahua Leopard Frog and its designated critical habitat?
- What would be the effect of the alternatives on the Gila topminnow, Gila chub, and Desert pupfish?
- What would be the effect of the alternatives on the Huachuca water-umbel habitat?
- What would be the effect of the alternatives on the lesser long nosed-bat?

- What would be the effect of the alternatives on the Northern Mexican garter snake and its critical habitat?
- What would be the effect of the alternatives on Jaguar critical habitat?
- What would be the effect of the alternatives on ocelot?
- What would be the effect of the alternatives on Southwestern willow flycatcher and Yellow-billed cuckoo critical habitat?
- What would be the effect of the alternatives on Huachuca golden aster habitat?

Fish and Wildlife

- What would be the effect of the alternatives on habitat for the longfin dace and Sonoran mud turtle?
- What would be the effect of the alternatives on ground dwelling animals?
- What would be the effect of the alternatives on nesting habitat and behavior for migratory birds?

Hydrologic Conditions and Water Quality

- What would be the effect of the alternatives on the hydrologic conditions in the Cienega Watershed?
- What would be the effect of the alternatives on water quality in Cienega Creek?

Vegetation, Noxious Weeds, Invasive Species

- What would be the effect of the alternatives on the spread of noxious weeds and invasive species on the NCA?
- What would be the effect of the alternatives on vegetative communities on the NCA?

Recreation and Access

- What would be the effect of the alternatives on visitor experience at the NCA?

Soils

- What would be the effect of the alternatives on soil loss?

Wetlands and Riparian Areas

- What would be the effect of the alternatives on wetlands areas in the project area?

Visual Resources

- What would be the effect of the alternatives on the visual resource at Las Cienegas NCA?

2.0 Alternatives

The BLM, in partnership with FHWA-CFLHD, are proposing roadway improvements and low-water crossings in LCNCA along LC6900 (HWY 83 Entrance Road), LC6900E, LC6901 (passes by the Airstrip Group Site), and LC6900 (Main Road South), see **Figure 1**.

2.1 No Action Alternative

Under the No Action Alternative, the proposed improvements would not occur and existing maintenance practices would continue resulting in increased maintenance costs, continued safety concerns, and poor drainage within the project area.

2.2 Proposed Action

The proposed project includes resurfacing, reconditioning and rehabilitation of the roadway surfaces, as well as drainage improvements, along 13.3 miles of roadway. Elements of the project include the following:

- Resurface the four road corridors and select vehicle pullouts with aggregate gravel.
- Pave 3.04 miles of LC6900 (HWY 83 Entrance Road) and .2 miles of LC6900E (to the cattleguard).
- Replace existing aggregate gravel on 1.7 miles of LC6901 (passes by the Airstrip Group Site) and 8.1 miles of LC6900 (Main Road South).
- Install and replace 69 signs, install 12 cattle guards and construct one new pullout on LC6900 (Main Road South).
- Perform drainage improvements including installing riprap, installing, cleaning and replacing select culverts, and vegetation removal from ditches, as needed.
- Install seven low-water crossings.

Further details regarding components of the Proposed Action are included in the following subsections.

The estimated total impacts for the Proposed Action are approximately 32 acres; of which approximately 31.98 acres are permanent and 0.02 acres are temporary. Permanent impacts would include the placement of riprap, grading and resurfacing of the roads. Temporary impacts would occur due to construction-related activities including vegetation and soil disturbance and an increase in construction-related noise, dust and temporary changes in the immediate visual environment.

Construction is anticipated to begin in December 1, 2014 and be completed by March 15, 2015. Construction activities would only occur during the day.

2.2.1 Road Improvements

Road Resurfacing

The existing roadway surface varies throughout the project area. LC6900 (HWY 83 Entrance Road) and LC6900E are approximately 22 feet wide, while LC6901 (passes by the Airstrip Group Site) and LC6900 (Main Road South) are approximately 14 feet wide.

All four roads and select vehicle pullouts within the project area would be resurfaced using aggregate gravel. Approximately four inches of gravel would be added on top of all roads and select pullouts, except for LC6901 (passes by the Airstrip Group Site), which will have approximately eight inches of gravel surfacing. Certain areas within the project area (including roadway surface and ditches) may require grading and some excavation (reconditioning) prior to the placement of gravel. One new vehicle pullout would be created on LC6900 (Main Road South). The single lane roads would be graded to be at a cross slope and the water would drain off one side of the road depending on the direction of the cross slope.

In addition to the gravel resurfacing, 3.04 miles of Road LC6900 (HWY 83 Entrance Road) and .2 miles of LC6900E would be paved with asphalt and sealed using a chip seal in an effort to color the roadway surface similar to the adjacent soils. No centerline or edge striping would be installed on any road within the project area. The double lane road would be crowned in the middle and water would drain off to either side.

The resurfacing and paving would be completed within the existing roadway prism and previously disturbed areas. The roadway prism includes the road surface and the adjacent ditch/shoulder. Roads within the project area would not be widened.

Cattle Guards

In addition to road resurfacing, the existing 12-foot wide cattle guards on Road LC6900 (HWY 83 Entrance Road), LC6901 (passes by the Airstrip Group Site), and LC6900 (Main Road South) would be replaced with 15-foot wide cattle guards. A total of 12 cattle guards would be replaced; one along LC6900 (HWY 83 Entrance Road), three along LC6901 (passes by the Airstrip Group Site) and eight along LC6900 (Main Road South) (see **Figure 2**). One fence gate would be installed and tied into the existing barbed wire fences adjacent to the cattle guards.

The installation of the cattle guard on LC6900 (HWY 83 Entrance Road) would be completed within the existing roadway surface; however, the cattle guards installed on LC6901 (passes by the Airstrip Group Site) and LC6900 (Main Road South) would require disturbance outside the roadway surface to address the changes in the grades, but within the roadway prism (approximately 1 foot on each side of the road). Revegetation may need to occur after construction depending on the amount of disturbance within the roadway prism.

Signs

Most signs adjacent to the roadway would be replaced to provide for better retro-reflectivity of the sign and some new signs would be installed within the project area to alert the driver to approaching hazards and roadway conditions. New signs would be installed at culvert locations, proposed low-water crossings, and cattle guards. Replacement of existing signs and the installation of new signs would be completed outside the roadway surface, but within the existing roadway prism.

Construction

During construction, equipment and material staging would be located in LCNCA maintenance yard accessed from the LC6900E (see **Figure 2**). Staging would also be permitted at vehicle pullout and turnaround locations within the project area. Typical heavy equipment used in road construction would be used; such as, grader, front-end loader, backhoe, dump trucks, cement trucks, vibrating compactor, water truck, and paving machine.

Figure 2. Proposed Project Elements Map

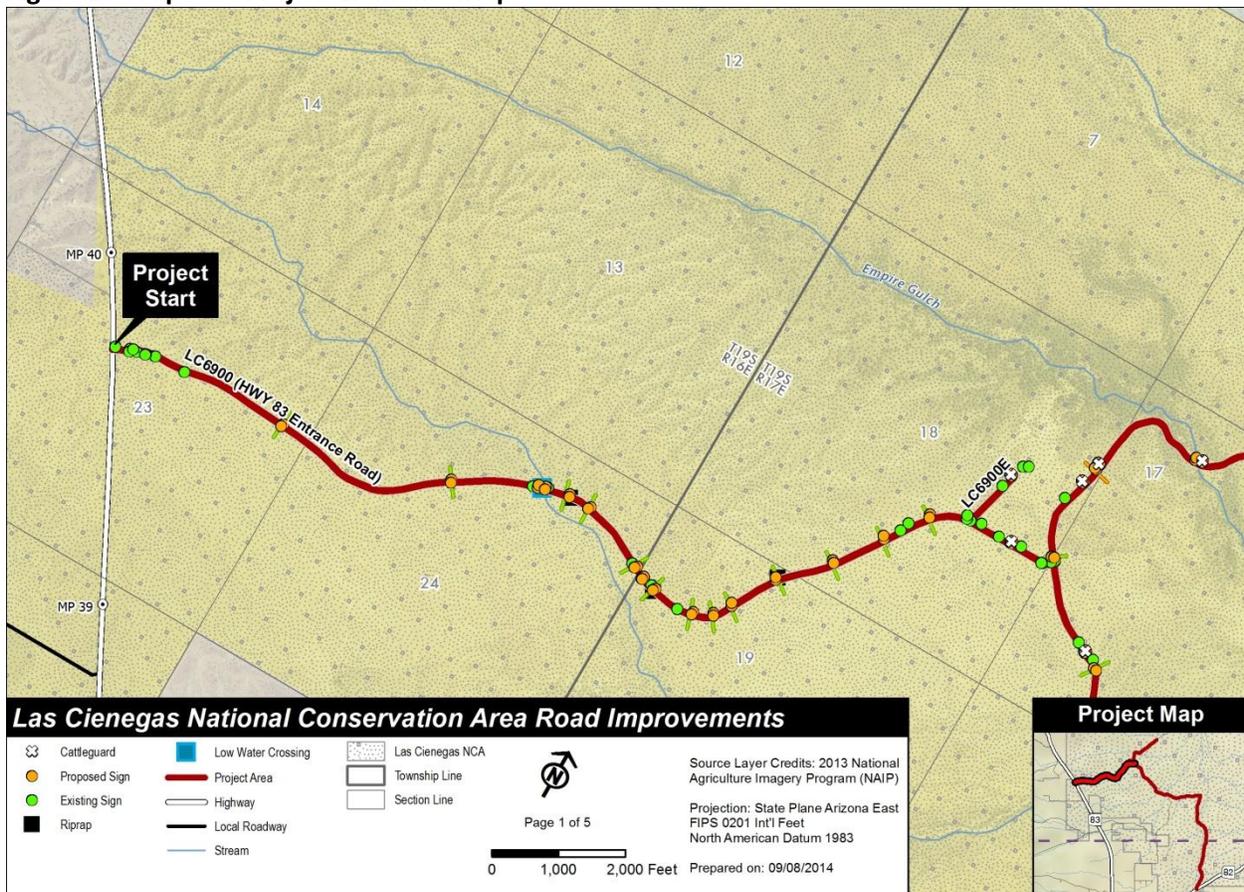


Figure 2. Proposed Project Elements Map

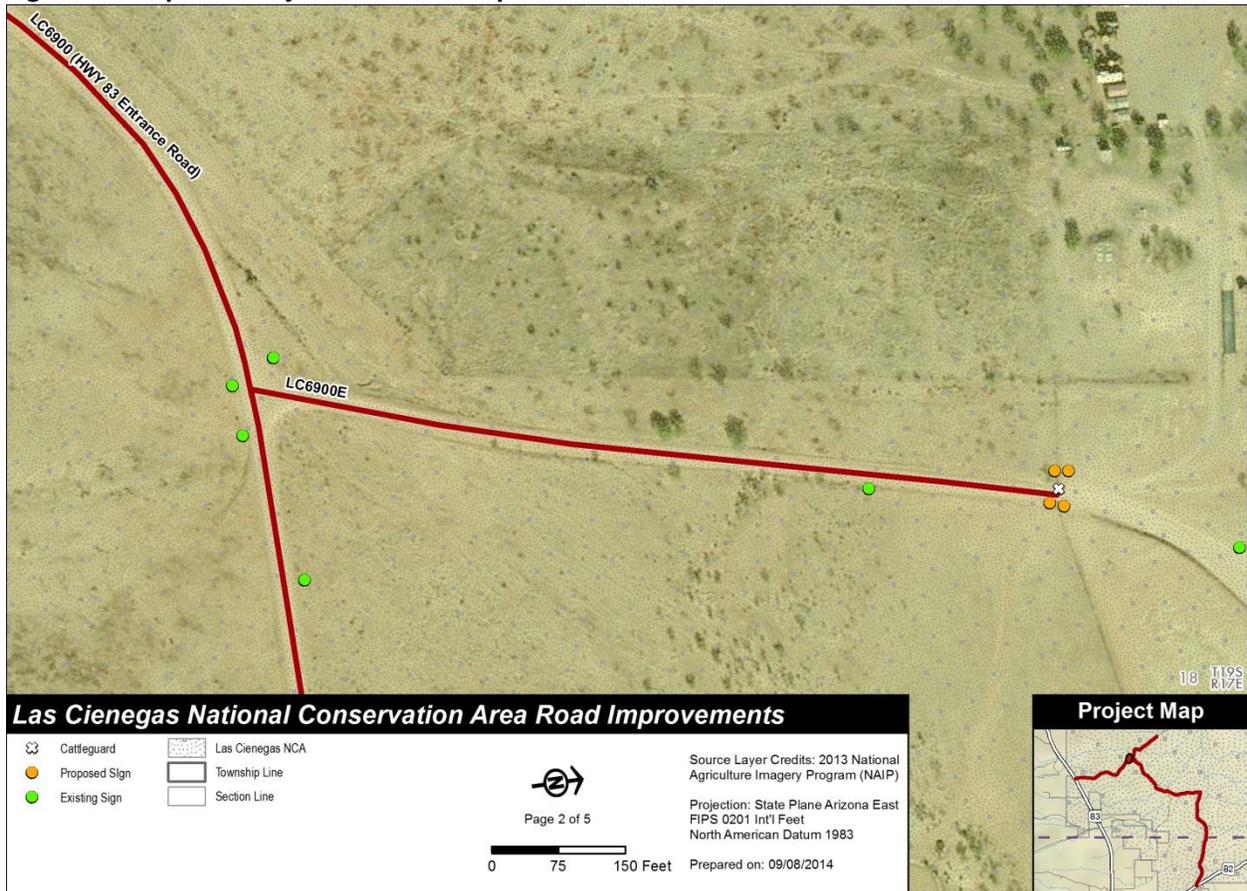


Figure 2. Proposed Project Elements Map

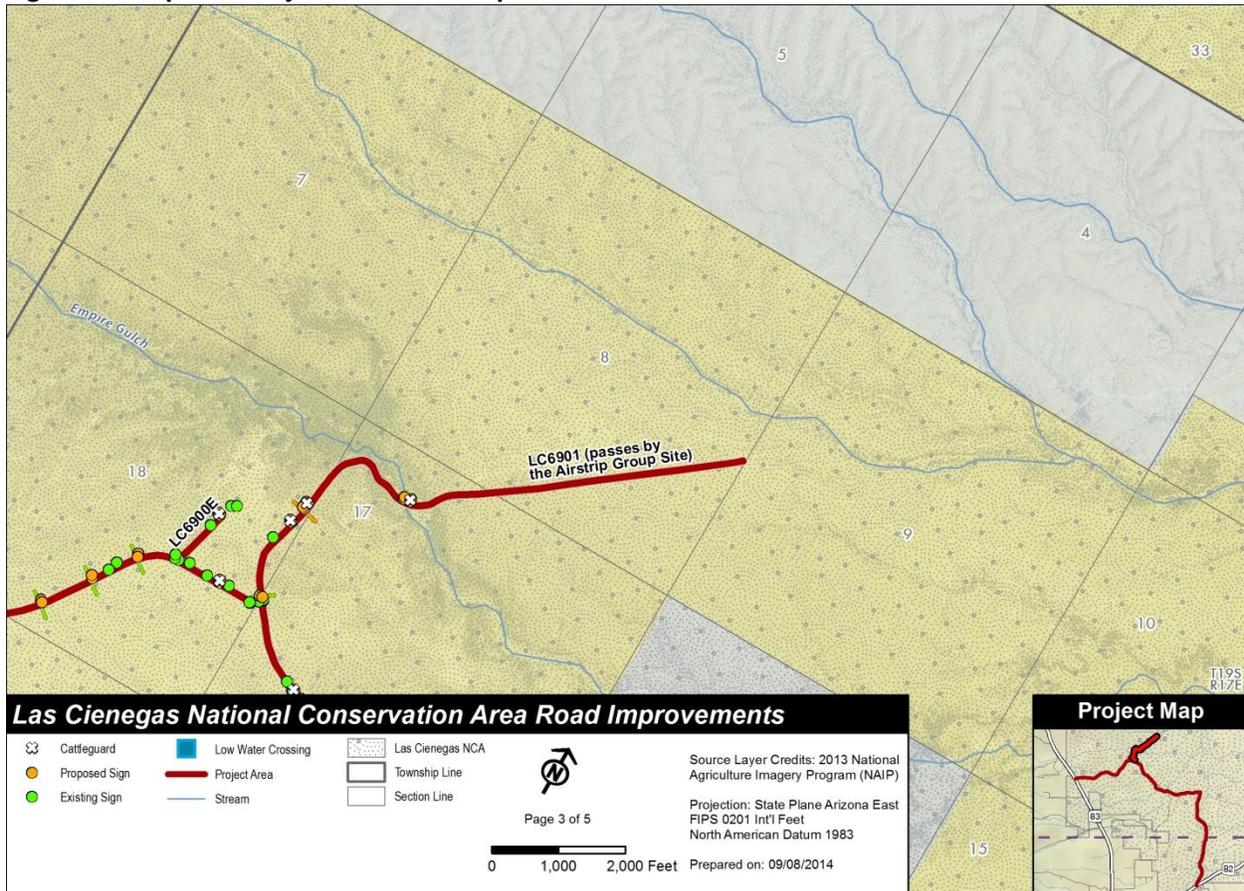


Figure 2. Proposed Project Elements Map

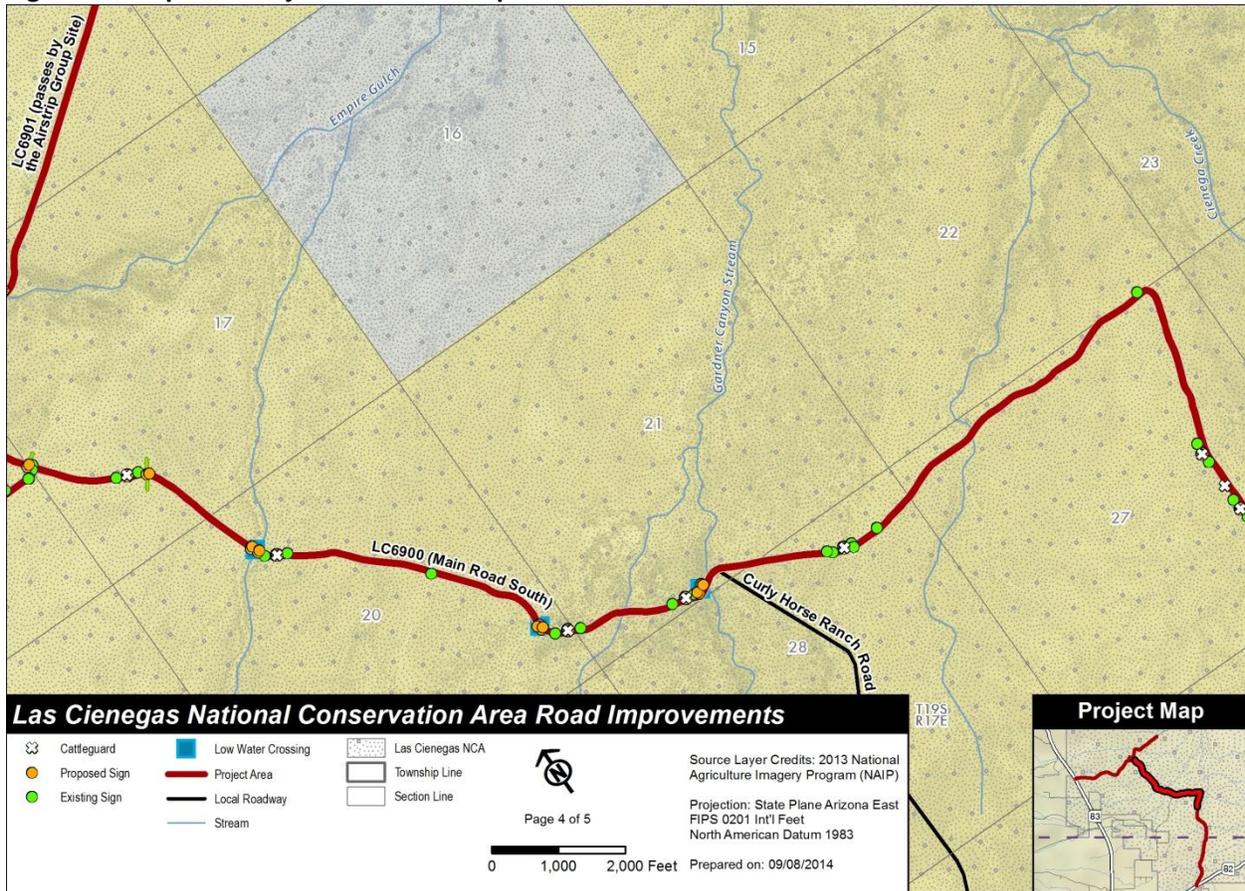
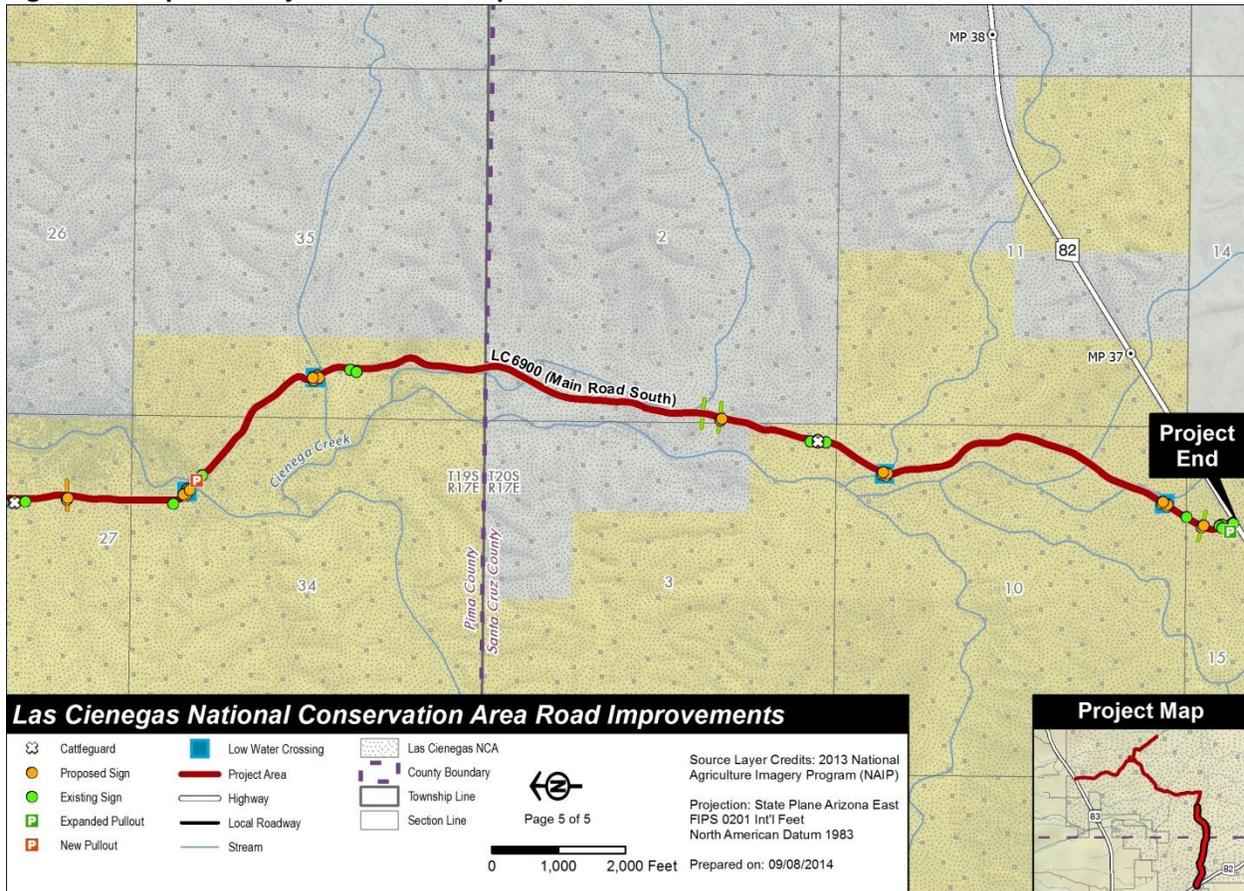


Figure 2. Proposed Project Elements Map



During construction of the road improvements, traffic would be restricted to a single lane along all roads except for LC6900 (Main Road South). LC6900 (Main Road South) would be closed for two closures, lasting up to three weeks each, for the installation of the cattle guards. The BLM and FHWA-CFLHD would coordinate the closure periods with the contracting officer and local cattle ranchers by providing two months advance notice of the closures. In addition, a communication strategy would be developed by BLM to notify all affected entities of construction dates and road closures. These entities include but are not limited to Special Recreation Permit holders, Empire-Cienega lessee, hunters, the local fire department, US Customs & Border Patrol, Arizona Game & Fish Department, and the utility companies.

2.2.2 Low-Water Crossings

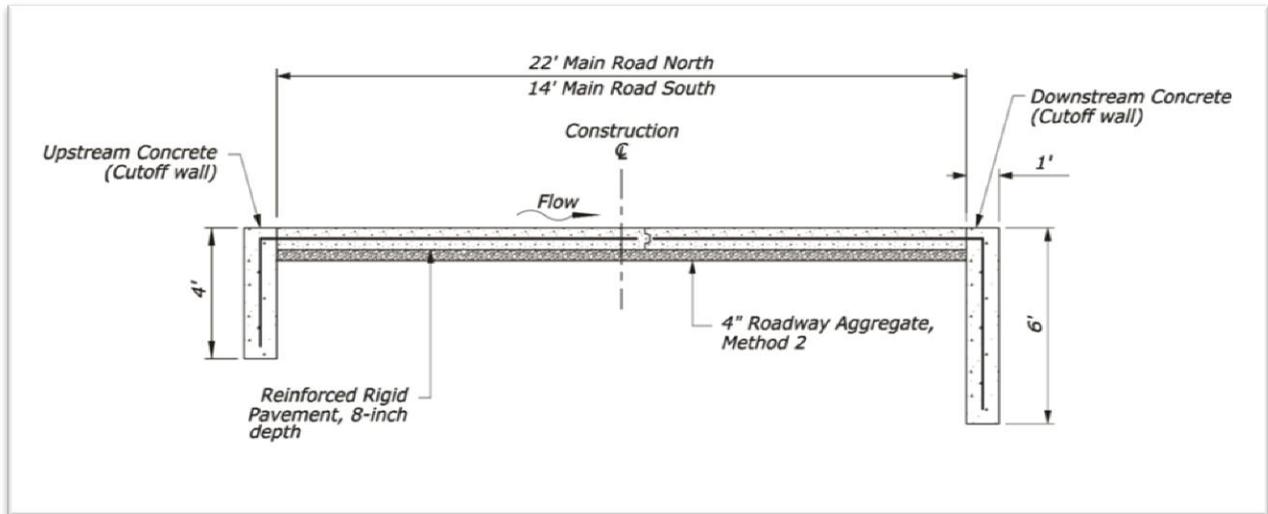
One low-water crossing would be installed along LC6900 (HWY 83 Entrance Road) and six low-water crossings would be installed along LC6900 (Main Road South) where the roads traverse large washes and erosion and drainage issues exist. The low water crossings would consist of eight-inch thick, reinforced, concrete slabs, located within two, one-foot wide concrete cutoff walls (one wall installed on each side of the road) (see **Table 2** and **Figure 2** and **Figure 3**). The concrete slabs would vary in size depending on the width of the road and the length of road within the drainage (see **Table 2**). The concrete slabs on LC6900 (HWY 83 Entrance Road) would be approximately 22 feet wide and 110 feet long. While the concrete slabs on LC6900 (Main Road South) would be 14 feet wide and vary between 60 and 140 feet long.

Cutoff walls would be installed along the sides of the concrete slabs. The concrete cutoff walls would be one-foot wide and match the length of the concrete slabs. The walls would be buried to prevent erosion (undermining) of the slabs with the top of the cutoff walls level with the concrete slabs. The upstream cutoff walls would be four feet in depth and the downstream cutoff walls would be six feet in depth. With the walls, the low-water crossings would be 24 feet wide on LC6900 (HWY 83 Entrance Road) and 16 feet wide on LC6900 (Main Road South).

Table 2. Low-Water Crossing Locations and Size

Location	Low-water Crossing Location	Width (feet)	Length (feet)
T19S, R16E, Section 24	LC6900 (HWY 83 Entrance Road)	24	110
T19S, R17E, Section 20	LC6900 (Main Road South)	16	140
T19S, R17E, Section 20	LC6900 (Main Road South)	16	70
T19S, R17E, Section 34	LC6900 (Main Road South)	16	105
T19S, R17E, Section 35	LC6900 (Main Road South)	16	60
T20S, R17E, Section 10	LC6900 (Main Road South)	16	60
T20S, R17E, Section 10	LC6900 (Main Road South)	16	80

Figure 3. Low-water Crossing



Construction

The construction and installation of the low-water crossings would be completed within the existing roadway prism. Revegetation may need to occur after construction depending on the amount of disturbance within the roadway prism. As mentioned above, construction equipment and material staging would be in LCNCA maintenance yard located off of LC6900E (see **Figure 2**). Staging would also be permitted at vehicle pullout and turnaround locations within the project area.

During construction of the low-water crossings, road closures along LC6900 (HWY 83 Entrance Road) and LC6900 (Main Road South) would occur to allow the concrete to cure. Temporary road closures on LC6900 (HWY 83 Entrance Road) would occur between 6:00 a.m. on Monday through 12:00 p.m. on Friday, with no weekend closures. LC6900 (Main Road South) would be closed for two closures, lasting each up to three weeks, for the installation of low-water crossings. The BLM and FHWA-CFLHD would coordinate the closure periods with the contracting officer and local cattle ranchers by providing two months advance notice of the closures. A communication strategy would be developed by BLM to notify all affected entities of construction dates and road closures. These entities include but are not limited to Special Recreation Permit holders, Empire-Cienega lessee, hunters, the local fire department, US Customs & Border Patrol, Arizona Game & Fish Department, and the utility companies.

2.2.3 Drainage Improvements

Additional drainage improvements would be performed on LC6900 (HWY 83 Entrance Road), LC6900 (Main Road South) and LC6901 (passes by the Airstrip Group Site). These improvements would include installing riprap; removing, cleaning and replacing culverts; installing one encasement water pipe; and cleaning and vegetation removal from roadside ditches (see **Figure 2**). Riprap would be installed at three locations adjacent to LC6900 (HWY 83 Entrance Road) and at one location on LC6900 (Main Road South). Along LC6900 (HWY 83 Entrance Road), three culverts would be cleaned in place and riprap and geotextile fabric would be installed at three locations to mitigate erosion that is occurring on site. Along

LC6901 (passes by the Airstrip Group Site) one culvert would be removed and replaced with a 24-inch pipe culvert. Along LC6900 (Main Road South), two 24-inch pipe culverts would be installed, one existing culvert would be repaired, and one culvert would be removed, cleaned and then re-laid. One 6-inch encasement water pipe would be installed, to replace the existing 2.5-inch polyvinyl chloride (PVC) water pipe. Alongside all roads, the ditches would be graded and vegetation in the ditches would be removed; however many of the ditches have been cleared of vegetation recently. In the southern third of the project area, the road crosses some drainages where the ditches contain some weeds, however most ditches are un-vegetated.

Construction

Disturbance from construction and installation of the proposed drainage improvements would result in temporary and permanent impacts outside of the existing roadway prism. Temporary impacts would result during culvert removal, cleaning, and installation, and encasement pipe installation. Permanent impacts would result during the installation of riprap and during ditch cleaning as a result of vegetation removal. During construction of the drainage improvements, one lane of traffic would remain open along all roads.

2.3 Project Design Features and Best Management Practices

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

Air Resources

- The Proposed Action would comply with the Pima County Department of Environmental Quality regulations for construction, and all necessary permits will be acquired, prior to work. Fugitive dust from soil disturbing activities would be minor and would 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 regulation and will meet all state required emissions standards for the construction industry.
- Best Management Practices (BMPs) to mitigate fugitive emissions and dust from the project site and equipment would be implemented and enforced during work and non-work hours, including weekends.

Cultural Resources

- In the event of a cultural, historical, archaeological, or paleontological discovery, the BLM archaeologist would be notified immediately and the area where the discovery is located would be avoided until the BLM responds.
- An additional cultural and paleontological resource survey may be required in the event that the project location is changed or additional surface disturbing operations are added to the project

after the initial survey. Any such survey would have to be completed prior to commencement of operations.

- If in connection with operations under this authorization, any human remains, funerary objects, sacred objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; Stat. 3048; U.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The permittee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

Fuels/Fire Management

- Compliance with BLM fire restrictions during construction and implementation of the proposed project will mitigate any risks introduced by the Proposed Action.

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 on site for disposal or sale by the BLM.
- If mineral materials are to be stockpiled on site for a future disposal or sale, specific BLM use authorization in the form of a contract, free use permit, or material site ROW will be necessary before the stockpiled mineral materials can be removed from the ROW.

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 and/or quantity.
- In the event of a release of a hazardous substance, regardless of the quantity released, as a result of project operations, 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).
- Submit a Spill Prevention, Control, and Countermeasure (SPCC) plan for oil and oil products on sites that meet the requirements of 40 CFR Part 112 at least two days before beginning work.
- Locate machinery servicing and refueling areas away from streambeds and washes to reduce the possibility and minimize the impacts of accidental spills or discharges.

Hydrologic Resources

- An Arizona National Pollutant Discharge Elimination System (AZNPDES) permit is required under Section 402 of the Clean Water Act (CWA) for construction related storm water discharges. As part of the AZNPDES, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared and implemented, which would minimize the transport of sediment by requiring the use of storm water and erosion control BMPs.

Livestock Grazing/ Rangeland Health Standards

- The contractor will return all disturbed areas to pre-construction conditions following construction. Disturbed areas will be revegetated and re-contoured following construction, if needed. Revegetation efforts will use native species and materials as specified by the BLM. All disturbed areas will be rehabilitated to reduce soil exposure. Weed control methods will be implemented to minimize the introduction of noxious weeds.

Migratory Birds

- All proposed work will comply with the Migratory Bird Treaty Act (MBTA) and avoid potential impacts to protected birds within the project area. To prevent undue harm, construction is scheduled during winter months (December 1, 2014 through March 15, 2014).
- If an element that may alter any breeding habitat has to occur during the breeding season, then a qualified biologist must survey the area for nests prior to 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.

Vegetation, Noxious Weeds, Invasive Species

- The contractor will return all disturbed areas to pre-construction conditions following construction. Disturbed areas will be revegetated and re-contoured following construction. Revegetation efforts will use native species and materials as specified by the BLM. All disturbed areas will be rehabilitated to reduce soil exposure. Weed control methods will be implemented to minimize the introduction of noxious weeds
- Construction equipment would be confined to pre-disturbed areas (i.e., road, staging areas, and pullouts).
- All vehicles and equipment entering the project area must be clean of noxious weeds and free from oil leaks and are subject to inspection. All construction equipment shall be washed to thoroughly remove all dirt, plant, and other foreign material prior to entering the project (SCR 107.10).
- Fill materials and road surfacing materials that originate from areas with known invasive vegetation problems will not be used.

Recreation and Access

- BLM and FHWA-CFLHD would provide notification of the closure periods to the contracting officer, allotment lessees, special recreation permit holders, US Border Patrol and AGFD by providing two months advance notice of the closures. Notice of the road closure would also be posted on the BLM Tucson Field Office website and on kiosks and bulletin boards throughout

the NCA. Weekly updates of the construction progress will be posted on bulletin boards installed within the project area.

Soils

- An AZNPDES permit is required under Section 402 of the CWA for construction related storm water discharges. As part of the AZNPDES, a SWPPP would be prepared and implemented, which would minimize the transport of sediment by requiring the use of storm water and erosion control BMPs.
- A final surfacing technical memorandum will be completed prior to construction. Based on the existing soils, this memorandum will provide recommendations to the contracting officer on the type and amount of aggregate and chip seal to use during resurfacing, as well as the type of concrete to use for the low water crossings to prevent damage that may result from existing soil conditions.
- The contractor will return all disturbed areas to pre-construction conditions following construction. Disturbed areas will be revegetated and re-contoured following construction. Revegetation efforts will use native species and materials as specified by the BLM. All disturbed areas will be rehabilitated to reduce soil exposure. Weed control methods will be implemented to minimize the introduction of noxious weeds.
- Construction equipment would be confined to pre-disturbed areas (i.e., road, staging areas, and pullouts).

Threatened, Endangered (T&E) or Candidate Plant and Animal Species

- The existing Section 7 consultations include the effects of land management and pond maintenance which do disturb fish and wildlife. The impacts of resurfacing appear to have similar to those considered in previous consultations (BO #2241-2002-F-0162 *Effects of the Proposed Las Cienegas National Conservation Area Resource Management Plan in Pima and Santa Cruz Counties, Arizona*, and #22410-2002-F-0162-R001 – *LCNCA RMP BO and Programmatic Wildlife Pond and T&E Reintroduction BO*).
- Construction activities will be conducted outside of the southwestern willow flycatcher, yellow-billed cuckoo and migratory bird breeding seasons and will be completed by March 15. If construction cannot be finished by March 15th, then the contract will contact CFL and CFL, in consultation with BLM, will determine a path forward (may include curtailing project until next winter). During construction, garbage or trash produced from construction activities would be removed promptly and properly to avoid creating attractive wildlife nuisances.
- BLM has reviewed the sequence of work for this project developed by Federal Highways in consultation with BLM. The BLM has determined that this sequence is compatible with species occupation and activity levels within the project area that will prevent any effects from occurring.
- Vehicles and equipment entering the project area would be kept clean of noxious weeds and free from oil leaks and are subject to inspection. Construction equipment would be washed thoroughly to remove dirt, plant, and other foreign material prior to entering the project area.

Particular attention would be shown to the under carriage and surfaces where soil containing exotic seeds may exist. These efforts are critical to prevent the introduction and establishment of non-native plant species into the project area.

- Storm water BMPs and good housekeeping procedures will be implemented for the project. Spill control measures will be kept on-site to protect against any accidental releases of chemicals or petroleum-based products used for equipment operation. FHWA would require inspection of each piece of equipment before entering the project. Equipment found operating on the project that has not been inspected, or has oil leaks would be shut down and subject to citation.
- Provide certified weed free permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction.

Wetlands

- Proposed road improvements located adjacent to wetland (near Empire Gulch and LC6901 (passes by the Airstrip Group Site)) area would be completed within the roadway prism and no impacts to wetlands would occur.
- Coordination with the USACE will be conducted and a Section 404 Nationwide Permit and the Arizona Department of Environmental Quality Section 401 Water Quality Certification will be obtained. The project will comply with the terms and conditions of the 404 Nationwide Permit and Section 401 Water Quality Certification. For any unavoidable impacts, FHWA-CFLHD will consult with the appropriate federal and state regulatory agencies including the Corps and the Arizona Department of Environmental Quality and obtain the necessary permits prior to commencing work within the jurisdictional WUS.

Utilities

- Protect utilities from construction operations. Cooperate with utility owners to expedite the relocation or adjustment of their utilities to minimize interruption of service, duplication of work, and delays.

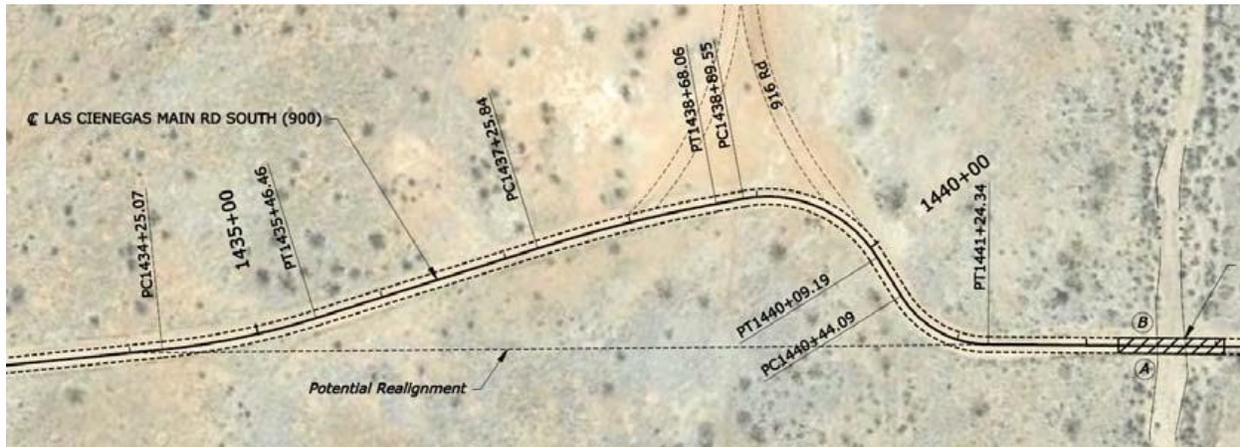
Visual

- The aggregate surface material, paving chip seal and concrete color would be matched with the surrounding soil colors (light tan and light browns). Samples of surface will be obtained and submitted to the contracting officer before ordering any materials for use on the project site.

2.4 Alternatives Considered but not Analyzed in Detail

An alternative to realign LC6900 (Main Road South) to straighten a winding segment was considered but dismissed since the realignment would cause disturbance outside of the existing roadway prism and the existing curves already meet BLM road design requirements (see **Figure 4**).

Figure 4. Potential Realignment along LC6900 (Main Road South)



Source: Jacobs, 2013

Additional low-water crossings and drainage improvement elements were considered along all roads within the project area; however, due to the amount of disturbance outside the roadway prism and potential impacts to wetlands and riparian areas these elements were dismissed from further analysis.

Several surfacing materials, including colored asphalt and concrete, were considered but eliminated due to excessive installation and maintenance costs as well as deteriorating the existing visual environment.

2.5 Conformance

The EA is in conformance with the BLM LCNCA Resource Management Plan (RMP) (BLM, 2003) approved July 25, 2003. LCNCA RMP discusses road maintenance guidance and levels (page 50). Roads within the project area are considered a maintenance level 3. Maintenance level 3 roads are permitted maintenance, as needed to preserve the functionality of the road and provide a reasonable level of riding comfort for visitors (BLM, 2003).

3.0 Affected Environment and Environmental Consequences

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

Table 3 summarizes the environmental resources that have been reviewed, whether they would be affected by the project, and rationale for that determination. Resources that are either not present, or are present but would not be affected, will not be discussed further in this EA. Resources that are present and may be affected are analyzed in further detail in this section of this document. Mitigation measures are detailed to mitigate adverse impacts to resources in Section 3.8.

Table 3. 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 National Ambient Air Quality Standards (NAAQS), with respect to criteria pollutants, in order to protect the public health and the environment. The project area is not located in a non-attainment area. Fugitive emissions and dust from construction activities are temporary in nature and will not create any lasting impacts to the environment. The Proposed Action would comply with the Pima County Department of Environmental Quality regulations for construction, and all necessary permits will be acquired, prior to work. Project design features built into the project design would reduce the risk of any negative impacts to air quality.
Areas of Critical Environmental Concern		X		The project area is located within the Empire-Cienega Area of Critical Environmental Concern (ACEC) (Map 8 from the RMP) but the proposed project does not impact or change the relevance and importance criteria for which it was nominated for as an ACEC.

Table 3. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
BLM Natural Areas	X			The project area is not located within a BLM Natural Area.
Cultural Resources/ Native American Religious Concerns	X			Based on a review of previous surveys, existing cultural clearances, and a field inspection (Class III survey) of the project area, no historic properties were identified within the Area of Potential Effect. No historic or cultural resources would be affected.
Environmental Justice	X			No minority or low-income communities are present in or near the project area.
Farmlands (Prime or Unique)	X			There are no prime or unique farmlands in LCNCA.
Fish and Wildlife Excluding Federally Listed Species			X	The project has the potential to impact wildlife species, including six BLM sensitive species. Impacts are assessed in this EA.
Floodplains		X		The project area is located within Federal Emergency Management Act (FEMA) Flood Insurance Rate Map (FIRM) No. 04019C4050L, 04019C4025L, and 04019C4075L. The project would occur within existing 100-year floodplains (Zone A) but would not result in a significant encroachment or change to the base flood elevation.
Fuels/Fire Management		X		Compliance with BLM fire restrictions during construction and implementation of the proposed project will mitigate any risks introduced by the Proposed Action. BMPs built into the project design will reduce the risk of any negative impacts to fuels and fire management (see Section 2.3 for BMPs).

Table 3. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
Geology / Mineral Resources/Energy Production		X		No mining claims are present in the project area. No drilling is required for the proposed project; however, some excavation may be needed. BMPs built into the project design will reduce the risk of any negative impacts to geologic resources (see Section 2.3).
Hydrologic Conditions and Water Quality			X	The project would impact the hydrologic conditions of the local hydrographic basin. The project may alter surface water runoff patterns and may cause erosion. Impacts are assessed in this EA.
Vegetation/Invasive Species/Noxious Weeds			X	Soil disturbance and vegetation removal during construction of the project has the potential to impact vegetation and spread and/or introduce nonnative species. Impacts are assessed in this EA.
Lands & Realty		X		The proposed project will result in minor vegetation and soil disturbance outside of the roadway prism. BLM is in the process of acquiring an easement from the Arizona State Land Department to authorize use of approximately 1 mile of the LC6900 road that crosses State Land. No change in the ownership of land would occur.
Livestock Grazing/Rangeland Health Standards		X		Two grazing allotments are located within LCNCA and the project area. Minor vegetation and soil disturbance would occur outside the road prism. Temporarily disturbed areas would be reseeded with an approved BLM seed mix. The ranching operation of the Empire-Cienega lessee may be temporarily affected by the construction road closures. The proposed project would also improve the existing cattle guards. Overall, livestock grazing, grazing allotments, and rangeland health would not be impacted by the proposed project.

Table 3. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
Migratory Birds			X	Several species of migratory birds have the potential to occur in the project area, including the Arizona Botteri's sparrow (<i>Peucaea botterii arizonae</i>), the Arizona grasshopper sparrow (<i>Ammodramus savannarum ammolegus</i>) and the gray hawk (<i>Buteo plagiatus</i>). The construction of the proposed project would be conducted and completed prior to most migratory bird nesting season (March through August). However, the project has the potential to impact migratory birds. Impacts are assessed in this EA under Section 3.3, Fish and Wildlife Excluding Federally Listed Species.
Paleontology	X			Based on literature review and relevant maps, no paleontological resources would be affected by the project. In the event of a cultural, historical, archaeological, or paleontological discovery, the BLM archaeologist would be notified immediately and the area where the discovery is located would be avoided until the BLM responds.
Recreation and Access			X	The project has the potential to impact recreation and access within the project area. Impacts are assessed in this EA.
Socio-Economics		X		The project may provide short-term economic and employment benefits during construction, however this impact would not be measurable.
Soils			X	Soil disturbance due to construction related activities would occur outside the roadway prism. Impacts are assessed in this EA.

Table 3. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
Threatened, Endangered (T&E) or Candidate Plant and Animal Species			X	<p>The following federally-listed threatened, endangered, or proposed species have the potential to occur within the project area:</p> <ul style="list-style-type: none"> • Chiricahua leopard frog (<i>Lithobates chiricahuensis</i>) and designated critical habitat. • Gila topminnow • Gila chub • Desert pupfish • Huachuca water-umbel (<i>Lilaeopsis schaffneriana</i> ssp. <i>recurva</i>) • Lesser long-nosed bat (<i>Leptonycteris curasoae yerbabuena</i>) • Jaguar (<i>Panthera onca</i>) and designated critical habitat. • Northern Mexican garter snake (<i>Thamnophis eques megalops</i>) and proposed designated critical habitat. • Ocelot (<i>Leopardus pardalis</i>) • Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>) and designated critical habitat. • Yellow-billed cuckoo (<i>Coccyzus americanus</i>) and designated critical habitat. <p>Construction of the proposed project would occur December through March 15, when species would not be as active. Additionally, the project would have minimal impacts outside of the roadway prism. The proposed project would therefore, have no effect on the federally listed species. Distance from critical habitat and construction work confined to the roadway and margin will protect proposed or designated habitat from effects.</p>

Table 3. Affected Resources Form

Resource	Not Present	Present/Not Affected	Present May be Affected	Rationale for Determination
Wastes (hazardous or solid)	X			No hazardous waste concerns have been identified in the project area; however, the project description includes steps that would be taken if any release or discovery of hazardous waste would occur during the proposed activity.
Wetlands/Riparian Zones			X	Wetlands and riparian areas are located within the project area and may be impacted as a result of the proposed project. Impacts are assessed in this EA.
Wild and Scenic Rivers	X			No wild and scenic rivers are located in the project area.
Wilderness/Wilderness Study Areas	X			No Wilderness Study Areas are located in the project area.
Visual Resources			X	The project occurs in Visual Resource Management (VRM) Class II. The existing visual environment may be impacted as a result of the proposed project. Impacts are assessed in this EA.
Wild Horses and Burros	X			No Wild Horse and Burro Herd Management Areas are located in the project area.
Wilderness Characteristics	X			There are no lands with wilderness characteristics in the project area.

3.1 Cumulative Effects

Cumulative impacts are defined in the BLM 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 project area to include the broader geographic limits of the Cienega Watershed (cumulative impact area). The Santa Rita Mountains to the west, the Rincon Mountains to the north, the Whetstone Mountains to the east and the Coronado National Forest to the south roughly bound this area. Past actions within this area

include cattle ranching and grazing, primitive road construction, vehicular and horseback recreation, hunting and rural residential development.

Present and reasonably foreseeable future actions within the cumulative impact area are regulated by several entities. Within the cumulative impact area The Coronado National Forest (Nogales Ranger District and Sierra Vista Ranger District) manages National Forest lands, the BLM – Tucson Field Office manages BLM lands, the Arizona State Lands Departments manages state lands, and Pima and Santa Cruz Counties manage county lands. The present and reasonably foreseeable future actions within the cumulative impact area that have impacted or may impact the affected resources are presented in **Table 4**.

Table 4. Present and Reasonably Foreseeable Future Actions

Agency	Action	Description
BLM	LCNCA Resource Management Plan (2003)	RMP describes the appropriate uses and development of LCNCA as it provides management guidance and identifies land use decisions to be implemented for management. LCNCA is approximately 44,998 acres.
USFS	Rosemont Copper Project, Coronado National Forest	The project will consist of an open pit, a processing plant (mill) and associated facilities, transmission lines for power and water, and waste rock and tailings facilities. If approved, the project would disturb an estimated 5,888 acres of private and National Forest Service lands, located approximately 13 miles northwest of the project area. Mine development may lead to the eventual depletion of groundwater which would reduce or eliminate some or all surface water.
USFS	Proposed Changes in Motorized Travel System, Nogales Ranger District, Coronado National Forest	The proposed project would change the existing motorized travel system (roads) by adding new roads and decommissioning others within the Nogales Ranger District, in the Coronado National Forest. Additionally, changes related to off-road travel for motorized dispersed camping are proposed.
BLM	LCNCA Secondary Road Maintenance	Install rolling dips to allow improved water drainage along Roads 6902 and 6903. The rolling dips would be installed every 300 to 500 feet, with each dip having a lead out of 10 feet wide by 100 feet long (approximately 1000 square feet) on one side and a diagonal rolling berm on the other side.
BLM	Cinco Well Pipeline and Lane Tank Drinkers	Water storage tank, drinkers and a pipeline will be installed at two existing well sites where the Chiricahua Leopard Frog currently exists or will be reintroduced.
BLM	LCNCA Pronghorn Augmentation	Release of Pronghorn Antelope within LCNCA.

The current and reasonably foreseeable future actions located within the cumulative impact area would result in impacts to wildlife species, including BLM sensitive species. If approved, the Rosemont Copper Project will result in substantial direct and indirect impacts to wildlife, wildlife habitat and wildlife behavior (USDA, 2013). Approximately 5,431 acres of terrestrial vegetation and 588 acres of riparian area will be directly impacted or modified as a result of the project (USDA, 2013). Construction and operation of the mine will disturb animal movement corridors and alter connectivity between wildlife habitats (USDA, 2013), and mine development may lead to the eventual depletion of groundwater which would reduce or eliminate some or all surface water. The Proposed Changes in Motorized Travel System Project on the Nogales Ranger District, Coronado National Forest could result in increased levels of vehicle-based recreation and vehicle related wildlife mortality. However, these potential impacts are anticipated to be minimal because any increase in traffic and recreation is not expected to be appreciably different than current levels. The Cinco Well Pipeline and Lane Tank Drinkers project and LCNCA Pronghorn Augmentation project would have a beneficial impact to wildlife (BLM, 2014b, 2014c).

The current and reasonably foreseeable future actions located within the cumulative impact area would result in impacts to hydrologic conditions. If approved, the Rosemont Copper Project would result in direct and indirect impacts to hydrologic resources, including surface and ground water (USFS, 2013). Construction and operation of the mine, as modeled, mine development may lead to the eventual depletion of groundwater which would reduce or eliminate some or all surface water. The Proposed Changes in Motorized Travel System Project on the Nogales Ranger District, Coronado National Forest and LCNCA Secondary Road Maintenance project could result in increased levels of erosion and surface water runoff. The Cinco Well Pipeline and Lane Tank Drinkers project would impact groundwater within the drainage by utilizing water from the Cinco Well (BLM, 2014). The LCNCA Pronghorn Augmentation project would not have a measurable effect on hydrologic conditions (BLM, 2014).

Approximately 5,431 acres of terrestrial vegetation would be directly impacted or modified as a result of the Rosemont Copper Project (USDA, 2013). Construction and operation of the mine will increase the potential spread of noxious and invasive weeds. The Proposed Changes in Motorized Travel System Project on the Nogales Ranger District, Coronado National Forest, and the LCNCA Secondary Road Maintenance could result in vegetation removal, soil disturbance and the increased potential for the transport of noxious weed and invasive species (USDA, 2010 and BLM 2014d). The potential increased visitor use associated with these projects could result in adverse cumulative effects on vegetation due to the potential spread of invasive species and noxious weeds. The Cinco Well Pipeline and Lane Tank Drinkers project and LCNCA Pronghorn Augmentation project would have no measurable effect on vegetation, noxious weeds or invasive species.

If approved, the Rosemont Copper Project would result in the relocation of the Arizona National Scenic Trail, the decommission of approximately 17.5 to 18.5 miles of motorized, public Forest Service roads, and new road construction to provide connectivity with the existing National Forest Service road system (USDA, 2013).

The Proposed Changes in Motorized Travel System Project on the Nogales Ranger District, Coronado National Forest, and LCNCA Secondary Road Maintenance could result in changes to existing motorized

recreation (USDA, 2010 and BLM 2014d). The proposed Motorized Travel System changes on the Nogales Ranger District would change existing access within the National Forest for motorized vehicles. The Cinco Well Pipeline and Lane Tank Drinkers project and LCNCA Pronghorn Augmentation project would not have an effect on recreation and access.

Ground disturbance from clearing vegetation, grading, and stockpiling soils has the potential to accelerate erosion and reduce soil productivity. If approved, the Rosemont Copper Project would result in substantial impacts to vegetation, with approximately 5,431 acres of terrestrial vegetation directly impacted or modified as a result of the project (USDA, 2013). The Proposed Changes in Motorized Travel System Project on the Nogales Ranger District, Coronado National Forest, and the LCNCA Secondary Road Maintenance could result in vegetation removal and soil disturbance (USDA, 2010 and BLM 2014d). The Cinco Well Pipeline and Lane Tank Drinkers project and LCNCA Pronghorn Augmentation project would not have a measurable effect on soils.

If approved, the Rosemont Copper Project would result in approximately 43 acres of WUS and 588 acres of riparian area impacts. LCNCA Pronghorn Augmentation project would have a beneficial impact to wildlife. Potential impacts to wetlands and riparian areas could occur because of the Proposed Changes in Motorized Travel System Project on the Nogales Ranger District; however, impacts are unknown at this time.

The Rosemont Copper Project would result in permanent, major adverse visual impacts due to the size of the mining pits and the contrast with the existing visual environment (USDA, 2013). Potential visual changes could occur because of the Proposed Changes in Motorized Travel System Project on the Nogales Ranger District; however, impacts are unknown at this time.

3.2 Threatened, Endangered, and Special Status Species

3.2.1 Affected Environment

LCNCA has a wide variety of habitat types that support an array of species that are becoming increasingly rare. To date there are 11 federally listed and one proposed species. In addition there are four species with designated critical habitat and two species with proposed critical habitat. These species and designated critical habitat are as follows:

- Gila topminnow (*Poeciliopsis o. occidentalis*) – ESA Endangered
- Gila Chub (*Gila intermedia*) – ESA Endangered with Designated Critical Habitat
- Desert pupfish (*Cyprinodon m. macularius*) – ESA Endangered
- Northern Mexican garter snake (*Thamnophis eques megalops*) – ESA Threatened with Proposed Critical Habitat
- Chiricahua leopard frog (*Lithobates chiricahuensis*) – ESA Threatened with Designated Critical Habitat
- Lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*) – ESA Endangered

- Jaguar (*Panthera onca*) – ESA Endangered with Designated Critical Habitat
- Ocelot (*Leopardus pardalis*) – ESA Endangered, State Wildlife Species of Concern
- Southwestern willow flycatcher (*Empidonax traillii extimus*) – ESA Endangered with Designated Critical Habitat
- Yellow-billed cuckoo (*Coccyzus americanus*) – ESA Proposed Threatened with Proposed Critical Habitat, State Wildlife Species of Concern
- Huachuca water-umbel (*Lilaeopsis schaffneriana* ssp. *recurva*) – ESA Endangered

These species have declined to the point of requiring Federal protection from a variety of ecosystem-wide as well as species specific impacts that include the following: overexploitation by hunting and trapping, habitat fragmentation, displacement by encroachment by human habitation, water diversion and damming, loss of beaver activity, ground water pumping, predation and displacement by invasive-nonnative species, watershed damage, poor land management practices that degrade watersheds and wetlands, loss of forage plants, damage to roosting locations, disease, and other factors.

Ciénega Creek on LCNCA is the most intact lowland aquatic habitat in southern Arizona. It retains the largest and only substantial remaining population of Gila topminnow (*Poeciliopsis occidentalis*) in the United States, and also supports a large population of Gila chub (*Gila intermedia*) and longfin dace (*Agosia chrysogaster*). The Mexican garter snake (*Thamnophis eques*), which has declined or disappeared throughout its range in the United States, also appears to retain its strongest United States population at Ciénega Creek. The site retains a breeding population of the threatened Chiricahua leopard frog (*Lithobates chiricahuensis*), apparently the only one remaining in lowland ciénegas that were probably its historical core habitat in southeastern Arizona. Formerly, this frog overlapped here with the lowland leopard frog (*R. yavapaiensis*). The Sonoran Mud Turtle (*Kinosternon sonoriense*) also occurs at Empire Ranch, rounding a full complement of the aquatic vertebrates originally inhabiting the ciénegas of southern Arizona.

The riparian environment rivals that seen at Tucson prior to 1900, probably the regions richest; no other known remaining site approaches this. The creek and ciénega support outstanding examples of cottonwood-willow gallery forest, mesquite bosque, and big sacaton bottoms. These are home to bird species that have become rare through loss of riparian habitats, including the Southwestern willow flycatcher (*Empidonax traillii*), Bell's vireo (*Vireo bellii*), and a great diversity of others. Important lowland populations of riparian and xeriparian amphibians and reptiles are also known on site. Included in this group are several toads, the checkered garter snake (*Thamnophis marcianus*), Madrean alligator lizard (*Elgaria kingii*), and the giant spotted whiptail (*Cnemidophorus burti stictogrammus*). It is expected that there are a number of other important amphibian and reptile species populations yet to be found centered within the Ciénega Creek riparian area and in the surrounding sacaton grassland. These three elements, the aquatic, the riparian, and the grassland, are, in the listed order, the most threatened elements of the biota in southern Arizona. Ciénega Creek is a conservation resource equal to any other in the region.

Ciénega Creek on the Las Cienegas NCA appears to be free of immediate threats of direct habitat destruction. However, the basin is encircled by regions bristling with non-native species that could invade and eliminate the rarest and most threatened aquatic vertebrates. Harmful nonnative fishes have not colonized and eliminated the topminnow and chub and non-native American Bullfrog (*Rana catesbeiana*) apparently has been controlled by eradication efforts (Rosen and Caldwell 2004, Rosen et. al. 2013).

3.2.2 Environmental Consequences

This section is a summary of the Biological Evaluation for this project which can be found in Appendix A. The BLM has consulted with the USFWS in 2002, 2008 and again in 2012 concerning the Las Cienegas Resource Management Plan (RMP) and subsequent aquatic species reintroductions. The result was three Biological and Conference Opinions (BOC): 22410-2002-F-0162, *Effects of the proposed Las Cienegas National Conservation Area Resource Management Plan in Pima and Santa Cruz Counties, Arizona*; 22410-2008-F-0103, *Aquatic Species Conservation at the San Pedro Riparian and Las Cienegas National Conservation Areas, Arizona*; 22410-2002-F-0162-R001, *Reinitiation of Biological Opinion on the Las Cienegas National Conservation Area Resource Management Plan (22410-2002-F-0162) in Pima and Santa Cruz Counties, Arizona (for creation of wildlife waters and reintroduction of Federally listed aquatic species)*. Of these three, the first and the last pertain to this project (02-21-02-F-162 and 22410-2002-F-0162-R001).

As discussed in Section 3.2.1, LCNCA has 11 federally listed and one proposed species (4 with designated critical habitat and 2 with proposed critical habitat) with a potential to occur within or in proximity to the project area. After thorough review of the proposed project, it was concluded that the maintenance and road improvement project was similar to the description of road-related actions in the RMP. The key point is that the road work will stay within the road prism (bed and ditches) allowing for some level of disturbance up to six feet on either side. *Therefore, no new effects which would trigger re-initiation of consultation are anticipated or likely.*

Table 5. List of Species and Critical Habitat Covered by Past ESA Section 7 Actions

BOC: 22410-2002- F-0162 (Date: 2002)	BOC: 22410-2002-F-0162-R001 (Date: 2012)
Gila topminnow	Gila topminnow
Gila chub and Critical Habitat	Gila chub
Desert pupfish	Desert pupfish
Chiricahua leopard frog	Chiricahua leopard frog
Southwestern willow flycatcher	Northern Mexican garter snake
Northern aplomado falcon	Huachuca water umbel

Table 5. List of Species and Critical Habitat Covered by Past ESA Section 7 Actions

BOC: 22410-2002- F-0162 (Date: 2002)	BOC: 22410-2002-F-0162-R001 (Date: 2012)
Cactus ferruginous pygmy-owl	
Huachuca water umbel	
Lesser long-nosed bat	
Jaguar	
Canelo Hills ladies'-tresses	

Species and critical habitat (proposed or designated) not covered by previous consultation with the UFWFS include the following:

- Endangered jaguar
- Designated critical habitat for jaguar
- Endangered ocelot (*Leopardus pardalis*)
- Proposed threatened species yellow-billed cuckoo
- Proposed Critical Habitat for yellow-billed cuckoo
- Designated Critical Habitat for southwestern willow flycatcher
- Threatened northern Mexican garter snake
- Proposed Critical Habitat for northern Mexican garter snake
- Designated Critical Habitat for Chiricahua leopard frog

Table 6 includes the effect determinations for the species with the potential to occur within the project area and not covered by previous consultation with the USFWS.

Table 6. Effects Determinations for Proposed or Federally listed species and (proposed or designated) Critical Habitat.

Species	Effects Determination
Jaguar	No effect – it is unlikely that the project would pose any risk to riparian resources that support a corridor for movement for jaguar or to the jaguar itself. The combination of nocturnal habits of this species, short duration of the project and its extreme rarity make encounters with this species by road improvement activities virtually nonexistent. Due to the fact that road work inside of the existing disturbed road bed and margins will virtually eliminate risk of damage to habitat.

Table 6. Effects Determinations for Proposed or Federally listed species and (proposed or designated) Critical Habitat.

Species	Effects Determination
Ocelot	No effect – it is unlikely that it would pose any risk to riparian resources that support a corridor for movement for jaguar or to the jaguar itself. The combination of nocturnal habits of this species, short duration of the project and its extreme rarity make encounters with this species by road improvement activities virtually nonexistent. Due to the fact that road work inside of the existing disturbed road bed and margins will virtually eliminate risk of damage to habitat.
Southwestern willow flycatcher	No effect – the combination of season selected for implementation, road work inside of the existing disturbed road bed and margins eliminates all risk to the species and the risk of damage to habitat.
Yellow-billed cuckoo	No effect – the combination of season selected for implementation, road work inside of the existing disturbed road bed and margins eliminates all risk to the species and the risk of damage to habitat.
Northern Mexican garter snake	No effect – the combination of habitat preferences, season selected for implementation, distance of occupied sites, short project duration, all work inside of the existing disturbed road bed and margin, and scarcity make encounters with this species or damage to habitat by road improvement activities virtually nonexistent.
Jaguar	No effect – due to great distance of designated Critical Habitat from the project area.
Yellow-billed cuckoo	No effect – all road work will be concentrated inside of the existing disturbed road bed and margins, essentially eliminating all risk to the species and the risk of effects to primary constituent elements including riparian woodlands, prey base and riverine processes.
Southwestern willow flycatcher	No effect – all road work will be concentrated inside of the existing disturbed road bed and margins, essentially eliminating all risk of effects to primary constituent elements including riparian vegetation comprised of dense trees and shrubs interspersed with small openings of open water or marsh; and an abundant, diverse insect prey population.
Northern Mexican garter snake	No effect – there is no risk to wetland or riparian resources as road work will be concentrated inside of the existing disturbed road bed and margins. This essentially eliminates all risk to the species and the risk of effects to primary constituent elements including open, clean aquatic habitat or riparian habitat; adequate terrestrial space; a prey base consisting native amphibian and native fish species; absence of nonnative fish, amphibians and crayfish.
Chiricahua leopard frog	No effect – inside of the existing disturbed road bed and margins, which essentially eliminates all risk to the species and the risk of effects to primary constituent elements.

Indirect and Interrelated Effects from Vehicles and Recreation

After completion of the project, traffic and driving speeds may increase which may increase the potential for harm or mortality through vehicle collisions. The majority of the use is expected to be from vehicle-based recreation. Vehicle-based recreation has both direct and indirect impacts. Increased levels of vehicle use and increased speeds would result in greater chances of wildlife mortality. Indirect impacts include disturbance to wildlife activity patterns due to vehicle presence and noise, and the potential increased presence of visitors. However, these potential impacts are anticipated to be minimal because any increase in traffic and recreation is not expected to be appreciably different than current levels.

These interrelated effects are part of a larger set of effects from a large array of activities on LCNCA that are authorized by the RMP. These potential effects to each species and designated or proposed critical habitat need to be part of a formal consultation and conference reinitiation of BOC 02-21-02-F-0162, (Effects of the proposed Las Cienegas National Conservation Area Resource Management Plan in Pima and Santa Cruz Counties, Arizona) in order to come into compliance with Section 7(a)2 of the ESA. Likewise, the entire road system affects the sediment load in ephemeral channels that connect to critical habitat. This road project would not change the existing sediment load much except that the new surface would produce less sediment than the existing one. The effects of the road system will need to be addressed in a reinitiation of formal consultation on the BOC for LCNCA RMP.

3.3 Fish and Wildlife Excluding Federally Listed Species

3.3.1 Affected Environment

Wildlife

Habitats in the project area include oak woodlands, semi desert grasslands, sacaton grasslands, scrub-grassland, cottonwood-willow riparian areas, cienegas and mesquite woodlands. Big-game animals include mule deer (*Odocoileus hemionus*), white-tail deer (*Odocoileus virginianus*), pronghorn (*Antilocapra Americana*), and javelina (*Pecari tajacu*). Bird species commonly seen in the project area include red-tail hawk (*Buteo jamaicensis*), Swainsons hawk (*Buteo swainsoni*), northern harriers (*Circus cyaneus*), roadrunners (*Geococcyx*), Gambel's quail (*Callipepla gambelii*), and a variety of grassland sparrows. Mohave and diamond back rattlesnakes (*Crotalus scutulatus* and *Crotalus atrox*), gopher snakes, and a variety of lizards are frequently observed. Occasionally box turtles or Gila monsters (*Heloderma suspectum*) are observed (BLM, 2001).

Migratory Birds

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et. seq.) protects migratory birds and their nests (nests with eggs or young). Under the 1918 MBTA and subsequent amendments (16 U.S.C. 703-711), it is unlawful to take, kill, or possess migratory birds. Numerous bird species travel through Arizona during spring and fall migrations. A list of the protected bird species can be found in 50 C.F.R. §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 the BLM sensitive species the Arizona Botteri's sparrow (*Peucaea botterii arizonae*), the Arizona grasshopper sparrow (*Ammodramus savannarum ammoregus*) and the Arizona State wildlife species of concern, the gray hawk (*Buteo plagiatus*). Typically, the breeding season is when these species are most sensitive to disturbance, which generally occurs from February 15 through August 31.

BLM Sensitive Species

Sixty-one BLM sensitive species (45 wildlife species and 16 plant species) were evaluated for the potential to occur within the project area. The potential for species to occur within the project area was determined based on discussions with BLM personnel; a desktop review that included an evaluation of recorded occurrences, known range, and habitat requirements; and a field survey. As a result, it was determined that the following six BLM Sensitive Species may occur within or in proximity to the project area.

Table 7. BLM Sensitive Species Further Evaluated

Species Name	Scientific Name	General Habitat Description
Arizona Botteri's sparrow	<i>Peucaea botterii arizonae</i>	Healthy semi desert grassland, particularly areas of giant sacaton (<i>Sporobolus wrightii</i>) grass and oak (<i>Quercus</i>) woodland between 3,800 and 5,300 feet in elevation.
Arizona grasshopper sparrow	<i>Ammodramus savannarum ammoregus</i>	Healthy semi desert grassland, particularly areas of giant sacaton (<i>Sporobolus wrightii</i>) grass and oak (<i>Quercus</i>) woodland between 3,800 and 5,300 feet in elevation.
Ornate box turtle	<i>Terrapene ornata</i>	Grassland, and occasionally desert scrub from 2,000 to 7,100 feet in elevation
Great Plains narrow-mouthed toad	<i>Gastrophryne olivacea</i>	Streams, springs, and rain pools in mesquite semi-desert grassland and oak woodland communities from approximately 1,400 to 4,100 feet in elevation.
Huachuca golden aster	<i>Heterotheca rutteri</i>	Open, level grassland from 3,500 to 6,500 feet in elevation, and can even be found in disturbed sites such as road cuts.
Slevin's bunchgrass lizard	<i>Sceloporus slevini</i>	Open sunny areas in and among bunchgrass in coniferous forest and desert grassland communities between 4,300 to 9,480 feet in elevation.
Longfin dace	<i>Agosia chrysogaster</i>	Desert streams throughout the Gila River system.

Arizona Botteri's Sparrow & Arizona Grasshopper Sparrow

The Botteri's sparrow is a predominantly Mexican species that reaches the northernmost extreme of its distribution in southeastern Arizona and southern Texas (BNA 2014). Within Arizona, the Arizona

Botteri's sparrow is found in the southeastern corner of the state. Habitat utilized includes healthy semi desert grassland, particularly areas of giant sacaton (*Sporobolus wrightii*) grass and oak (*Quercus*) woodland. They occur and breed in small, isolated colonies located within these habitat types (Schmierer, 2013).

The Arizona grasshopper sparrow is a small, chunky sparrow with a short sharp tail and flat head that occupies open fields. Disjunct breeding populations occur in southeastern Arizona, extreme southwest New Mexico, and adjacent northern Sonora and Chihuahua, Mexico. The preferred habitat in Arizona is open grasslands between 3,800 and 5,300 feet in elevation. The species prefer large expanses of intermediate height grass for nesting. Occupied grasslands in Arizona often include some low, woody shrub component such as scattered young mesquite and mimosa. They nest primarily in semiarid grasslands within the state. In southeastern Arizona, their habitat is characterized as having nearly 75 percent ungrazed grass cover, 5 percent woody cover, and about 20 percent bare ground. Areas with trees appear to be avoided. Other areas avoided include areas with extremely short or tall grass, low grass cover, or high shrub densities. These habitat requirements are incompatible with extreme over-grazing by cattle, which can lead to grass denudation and mesquite invasion (AGFD, 2010b).

The mapped ranges for both of these species overlap with the project area and suitable habitat is present. They are known to occur within the NCA; however, no individuals were observed during the field visit conducted on July 9–10, 2014. Construction-related disturbance may make habitat adjacent to the project area less desirable and could therefore disrupt typical behaviors such as nesting or foraging. If either sparrow species attempt to nest in the project area while construction is ongoing, disturbance from construction activities could also result in disturbance to nesting birds. Only minor vegetation removal is anticipated as part of the project where ditches need to be cleaned out and a small expansion of a vehicle turn-out area; therefore, alteration or loss of habitat would be minimal. These areas of disturbance outside the roadway surface do not provide quality habitat and are unlikely to be utilized by the species. Additionally, construction is scheduled to take place during the winter months so it is unlikely birds will be occupying the area.

Desert Ornate Box Turtle

Within Arizona, the desert ornate box turtle is found in the southeast portion of the state from Winkelman to the Huachuca Mountains. Habitat used in this area includes primarily grassland, and occasionally desert scrub from 2,000 to 7,100 feet in elevation. Individuals hibernate in the winter and mate upon emerging in the spring and throughout their active season. Females lay one to two clutches a year. Desert ornate box turtles are omnivorous, feeding on plant and animal material including dead mammals, birds and their eggs, toads, grass, cactus fruits, melons, and insects (AGFD 2008).

Great Plains Narrow-mouthed Toad

Within Arizona, the Great Plains narrow-mouthed toad is found in the south in the counties of Santa Cruz, Pima, Pinal, and Maricopa. They can be found around streams, springs, and rain pools in mesquite semi-desert grassland and oak woodland communities from approximately 1,400 to 4,100 feet in

elevation. Breeding is stimulated by rainfall, with eggs being laid in Arizona around July. Approximately 600 eggs are laid at the water's surface. (AGFD, 2013b)

Huachuca Golden Aster

The Huachuca golden aster is only known from 11 sites in the United States, including sites in Pima, Santa Cruz, and Cochise counties in Arizona. Habitat for this plant includes open, level grassland from 3,500 to 6,500 feet in elevation, and can even be found in disturbed sites such as road cuts (AGFD, 2001). Habitat conditions for the species exist adjacent to the project area and this species is known to occur on the NCA.

Slevin's Bunchgrass Lizard

Within Arizona, the Slevin's bunchgrass lizard can be found in various mountains and valleys, including the Huachuca, Dragoon, Santa Rita, Whetstone, Chiricahua, and Mustang mountains and the Empire and San Rafael valleys. They are ground-dwellers that inhabit open sunny areas in and among bunchgrass in coniferous forest and desert grassland communities. The elevation within Arizona where they are found ranges from approximately 4,300 to 9,480 feet. Egg clutches are laid from June to August. The diet of Slevin's bunchgrass lizard consists of insects and spiders (AGFD, 2003b).

State Wildlife Species of Concern

Based on discussions with BLM personnel; a desktop review which included an evaluation of recorded occurrences, known range, and habitat requirements; and a field survey for each species conducted between July 9 and July 10, 2014, the following State Wildlife Species of Concern may occur within or in proximity to the Project Area:

- Gray hawk (*Buteo plagiatus*) – State Wildlife Species of Concern

This species and the effect determination are described below.

Gray Hawk

Within Arizona, the gray hawk is found in the southeast part of the state in the San Pedro River and Santa Cruz River watersheds (Pima, Santa Cruz, and Pinal counties). Gray hawks are found within riparian woodlands with large trees, such as cottonwoods, typically in areas near mesquite forests. Eggs are laid typically in early May in nests within the upper third of the canopy. Diet usually consists of lizards and, occasionally, small mammals. (AGFD, 2013c)

According to the Heritage Data Management System, occurrences of gray hawk are documented very close to the project area. The riparian habitats within the NCA are known to support gray hawks (BLM, 2011). The project area crosses through Empire Gulch and Gardner Canyon, both of which contain area of large cottonwoods and suitable habitat for the gray hawk. Only minor, non-woody vegetation removal is anticipated as part of the project where ditches need to be cleaned out and small expansion of a vehicle turn-out area; therefore, alteration or loss of habitat would be minimal. Furthermore, the amount of vegetation or habitat that would be impacted is very nominal in relation to the abundance of

habitat throughout the area. Construction is scheduled to take place during the winter months so it is unlikely birds will be occupying or nesting in the area.

3.3.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, none of the elements included in the proposed project would be constructed or installed and no project related impacts to wildlife or BLM sensitive species would occur.

Proposed Action

General Wildlife

Wildlife species, including BLM sensitive species, may be present in the project area. The primary direct impact of the Proposed Action on wildlife would be killing or maiming of ground dwelling animals during construction and a minor loss of habitat. Construction-related disturbance may make habitat adjacent to the project area less desirable and could temporarily disrupt typical behaviors. Minor vegetation removal due to the placement of riprap, creation of a vehicle pullout/turnaround and roadside ditch cleaning could result in minimal habitat alteration; however, this would constitute a fraction of available habitat in the area. Additionally, construction is scheduled during the winter months (December 1, 2014 through March 15, 2014), so it is unlikely that many wildlife species will be occupying the area. However, species like sparrows and Slevin's bunch grass lizard are active during the winter (Jones and Lovich, 2009). Indirect impacts to wildlife include disturbance to wildlife activity patterns due to the presence of vehicles and increases in construction-related noise would be temporary in each road segment as the project was implemented.

After completion of the Proposed Action, traffic and traffic speeds may increase due to the improved surface and drainage of the roads which may cause further degradation of habitat quality adjacent to the roadways and may increase the potential for vehicle related mortality. The Proposed Action would improve drainage along the roads, making the roads more passable and potentially causing more vehicle traffic during the wet season. Additionally, vehicles may drive at faster speeds due to the improved road surface, although posted speed limits would not change.

Indirect impacts of the Proposed Action include disturbance to wildlife activity patterns due to vehicle presence and noise, and the potential increased presence of visitors. These impacts are anticipated to be minimal because any increase in traffic and recreation is not expected to be appreciably different than current levels and existing habitat conditions would not change.

Migratory Birds

Migratory birds, including the BLM sensitive species, may be present on the project area. There is the potential to disturb nesting birds within or immediately adjacent to the project area. All proposed work under the Proposed Action must comply with the MBTA and avoid potential impacts to protected birds

within the project area. Additionally, project design features and BMPs outlined in Section 2.3 would be implemented to reduce the impact to migratory birds.

BLM Sensitive Species

Species Huachuca Golden Aster

The Huachuca golden aster, a BLM sensitive plant species, is known to occur within LCNCA and habitat conditions exist adjacent to the project area. Placement of riprap, creation of a vehicle pullout/turnaround and roadside ditch cleaning would result in minor vegetation removal. The alteration or loss of habitat would be minimal. Crushing or soil compaction is not anticipated because construction equipment would be confined to pre-disturbed areas (i.e., road, staging areas, and pullouts). Dust could increase during construction, which may settle onto plant leaves or flowers and has the potential to negatively affecting growth patterns or pollination. The Proposed Action also includes paving portions of the roads within the project area which could reduce dust from the roads in the long-term. However, these effects would likely be minor due to the short-term duration of the project and due to winter construction.

Determination

The proposed roadway improvements would not alter existing habitat conditions for the Huachuca golden aster or result in any change in habitat availability. Therefore, the project would have **no effect** on Huachuca golden aster, nor is it likely to result in a trend toward federal listing or loss of viability.

Arizona Botteri's Sparrow & Arizona Grasshopper Sparrow

After completion of the project, traffic and driving speeds may increase which could result in direct or indirect impacts to this species, such as vehicle mortality or noise and visual disturbances. Indirect impacts include disturbance to typical wildlife behaviors and degradation of habitat quality adjacent to the road due to vehicle presence and noise, and the potential increased presence of visitors. The majority of the use is expected to be from vehicle-based recreation. Vehicles may be driven at faster speeds due to the improved road surface, although posted speed limits will deter some drivers from faster speeds. Vehicles may kill wildlife in roadways, particularly species that may use the roadway surface. Sparrows that may forage or feed near the roads may be at a greater likelihood of being injured or killed. However, this potential impact is anticipated to be minimal because any increase in traffic and recreation is not expected to be appreciably different than current levels and would not change the existing habitat conditions.

Determination

Construction activities associated with the project would be localized, short-term in duration, occur during the winter months, and would not modify the habitat characteristics within or adjacent to the project area or change the existing condition. Additionally, operations of the road after project completion are not anticipated to change the existing conditions. Therefore, the proposed action would

have **no effect** on BLM sensitive sparrows, nor is likely to result in a trend toward federal listing or loss of viability.

Desert Ornate Box Turtle

Only minor vegetation removal is anticipated as part of the project where ditches need to be cleaned out and small expansion of a vehicle turn-out area; therefore, alteration or loss of habitat would be minimal. Furthermore, the amount of vegetation or habitat that would be impacted is very nominal in relation to the abundance of habitat throughout the area. These areas of disturbance outside the roadway surface do not provide quality habitat and are unlikely utilized by the species. Construction is scheduled to take place during the winter months so it is unlikely the species will be active.

After completion of the project, traffic may increase which may cause degradation of habitat quality adjacent to the road and may increase the potential for mortality. Vehicle traffic during the wet season would be likely to increase over current levels since the road would be passable. Vehicles may be driven at faster speeds due to the improved road surface, although posted speed limits will deter some drivers from faster speeds. The majority of the use is expected to be from vehicle-based recreation. Vehicle-based recreation has both direct and indirect impacts. Vehicles may kill wildlife in roadways, particularly slow-moving species or species that may use the roadway surface such as turtles. Indirect impacts include disturbance to wildlife activity patterns due to vehicle presence and noise, and the potential increased presence of visitors. However, this potential impact is anticipated to be minimal because any increase in traffic and recreation is not expected to be appreciably different than current levels and would not change the existing habitat conditions.

Determination

Construction activities associated with the project would be localized, short-term in duration, occur during the winter months, and would not modify the habitat characteristics within or adjacent to the project area. Additionally, operations of the road after project completion are not anticipated to change the existing conditions. Therefore, the proposed action would have **no effect** on desert ornate box turtles, nor is likely to result in a trend toward federal listing or loss of viability.

Great Plains Narrow-mouthed Toad

Only minor vegetation removal is anticipated as part of the project where ditches need to be cleaned out and small expansion of a vehicle turn-out area; therefore, alteration or loss of habitat would be minimal. Furthermore, the amount of vegetation or habitat that would be impacted is very nominal in relation to the abundance of habitat throughout the area. These areas of disturbance outside the roadway surface do not provide quality habitat and are unlikely utilized by the species. No springs, stream, or pools would be removed or impacted during construction. Construction is scheduled to take place during the winter months so construction-related impacts are improbable because it is unlikely the species will be active.

After completion of the project, traffic may increase which may cause degradation of habitat quality adjacent to the road and may increase the potential for mortality. Vehicle traffic during the wet season

would be likely to increase over current levels since the road would be passable. The majority of the use is expected to be from vehicle-based recreation. Vehicle-based recreation has both direct and indirect impacts. Vehicles may kill wildlife in roadways, particularly slower-moving species or species that may use the roadway surface such as toads. Indirect impacts include disturbance to wildlife activity patterns due to vehicle presence and noise, and the potential increased presence of visitors. However, these potential impacts are anticipated to be minimal because any increase in traffic and recreation is not expected to be appreciably different than current levels and would not change the existing habitat conditions.

Determination

Construction activities associated with the project would be localized, short-term in duration, occur during the winter months, and would not modify the habitat characteristics within or adjacent to the project area. Additionally, operations of the road after project completion are not anticipated to change the existing conditions. Therefore, the proposed action would have **no effect** on Great Plains narrow-mouthed toads, nor is likely to result in a trend toward federal listing or loss of viability.

Slevin's Bunchgrass Lizard

Only minor vegetation removal is anticipated as part of the project where ditches need to be cleaned out and small expansion of a vehicle turn-out area; therefore, alteration or loss of habitat would be minimal. Furthermore, the amount of vegetation or habitat that would be impacted is very nominal in relation to the abundance of habitat throughout the area. These areas of disturbance outside the roadway surface do not provide quality habitat and are unlikely utilized by the species. Construction is scheduled to take place during the winter months so it is unlikely the species will be active.

After completion of the project, traffic may increase which may cause degradation of habitat quality adjacent to the road and may increase the potential for mortality. The majority of the use on the roads is expected to be from vehicle-based recreation. Vehicle-based recreation has both direct and indirect impacts. Vehicles may kill wildlife in roadways, particularly species that may use the roadway surface such as lizards. Lizards may utilize the roadway because it typically warms up faster than the surrounding landscape due to the lack of vegetation. Vehicle traffic during the wet season would be likely to increase over current levels since the road would be passable. Vehicles may be driven at faster speeds due to the improved road surface, although posted speed limits will deter some drivers from driving at faster speeds.

Indirect impacts include disturbance to wildlife activity patterns as a result of vehicle presence and noise, and the potential increased presence of visitors. However, this potential impact is anticipated to be minimal because any increase in traffic and recreation is not expected to be appreciably different than current levels and would not change the existing habitat conditions.

Determination

Construction activities associated with the project would be localized, short-term in duration, occur during the winter months, and would not modify the habitat characteristics within or adjacent to the

project area. Additionally, operations of the road after project completion are not anticipated to change the existing conditions. Therefore, the proposed action would have **no effect** on Slevin's bunchgrass lizards, nor is it likely to result in a trend toward federal listing or loss of viability.

Gray Hawk

After completion of the project, traffic and driving speeds may increase which could result in direct or indirect impacts to this species, such as vehicle mortality or noise and visual disturbances. Indirect impacts include disturbance to typical wildlife behaviors due to vehicle presence and noise, and the potential increased presence of visitors. Increased traffic and recreation that might follow could result in disturbance to gray hawk foraging and nesting. However, these potential impacts are anticipated to be minimal because any increase in traffic and recreation is not expected to be appreciably different than current use. As such, habitat availability and typical behaviors would be in-line with existing conditions.

Determination

Construction activities associated with the project would be localized, short-term in duration, occur during the winter months, and would not remove or modify the habitat within or adjacent to the project area. Additionally, operations of the road after project completion are not anticipated to change the existing conditions. Therefore, the proposed action would have **no effect** on individual gray hawks nor is it likely to result in a trend toward federal listing or loss of viability.

3.3.3 Cumulative Effects

No Action Alternative

The No Action Alternative would not cumulatively result in additional effects to wildlife or their habitat.

Proposed Action

The construction of the Proposed Action is expected to result in minor impacts to wildlife, migratory birds, BLM sensitive species and Arizona Wildlife Species of Concern. The project would disturb marginal quality habitat and could disturb wildlife species during construction. Overall, the proposed improvements in combination with other past, present, and reasonably foreseeable future projects would not cumulatively result in measurable adverse impacts to wildlife.

3.4 Hydrologic Conditions and Water Quality

3.4.1 Affected Environment

The project area lies within the Cienega Creek Watershed and the Empire Gulch, Gardner Canyon and the Smith Canyon-Cienega Creek Subwatersheds (U.S. Geological Survey [USGS] Hydrologic Unit Code [HUC] 1505030201) (USGS, 2013). Several substantial drainages, including Cienega Creek, Los Posos Gulch, Gardner Canyon, Road Gulch and Empire Gulch are located in the project area. Empire Gulch is considered an intermittent stream, and the remaining streams and drainages are considered ephemeral

(Jacobs, 2014b). Cienega Creek does have perennial water flows approximately four to five miles downstream (north).

None of the drainages within the project area are considered impaired water by the Environmental Protection Agency (EPA); however, Cienega Creek is designated as an Outstanding Arizona Water (OAW), under which site-specific standards may be adopted to maintain and protect existing water quality. To be classified as an OAW, the surface water must meet the following criteria (ADEQ, 2011):

1. It is a perennial or intermittent water
2. It is free flowing and does not contain impoundments, diversions, channelization, or other hydrological modification
3. It is not listed as impaired under A.A.C R18-11-604(E)
4. It provides exceptional recreation or ecological significance or is essential to the survival of an endangered or threatened species

Runoff within the watershed is generally rapid during the typical summer monsoons, which can cause flash flooding. During these flash floods over one-inch of precipitation can fall within one hour and roads that cross drainages can become impassable due to water and deposits of loose sand and gravel.

3.4.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative none of the elements included in the proposed project would be constructed and no project-related impacts to existing hydrologic conditions and water quality would occur. Existing conditions and issues would continue.

Proposed Action

The Proposed Action would not result in a substantial change to the existing hydrologic conditions in the project area. Throughout the project area, the proposed project would result in an approximately 8.23-acre increase in impervious surface due to the construction of low-water crossings and road improvements within the project area. The elevation of the road would not substantially change and there would not result in a significant encroachment or change to the base flood elevation.

The drainages with proposed low-water crossings would result in minor increases in water flow velocities during storms, but drainages would continue to operate as ephemeral drainages. Riprap would be installed at several locations in the project area to slow-water flow and prevent further erosion. Select culverts in the project area would be cleaned, replaced or removed and roadside ditches would be graded to improve the ability for water to flow towards the culverts and reduce maintenance.

Negative impacts to water quality would result from the increase in surface water runoff due to an increase in impervious surface (along LC6900 [HWY 83 Entrance Road] and LC6900E), and short-term increases in sediment levels from ground-disturbing construction activities. While increased impervious surface along LC6900 (HWY 83 Entrance Road) and LC6900E can result in increased surface water runoff

volumes velocity, the paved surfaces would reduce erosion and sedimentation of nearby waters by eliminating the gravel road surface. In the event of a major water flow event, there could be additional erosion around the proposed low water crossings from water flowing down the road into the channel. Post-construction temporary and permanent BMPs would be instituted to limit runoff and increased surface water volumes.

Since the project would disturb more than one acre, an Arizona Pollutant Discharge Elimination System (AZPDES) permit is required under Section 402 of the Clean Water Act (CWA) for construction related storm water discharges. The Arizona Department of Environmental Quality (ADEQ) has regulatory authority over the permitting process.

To comply with the terms and conditions of the AZNPDES permit, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared and implemented, which would minimize the transport of sediment by requiring the use of storm water and erosion control BMPs. The BMPs for erosion and sediment control focus primarily on protecting receiving waters and water sources in areas of construction activity. Since the project area is located outside of a US Census published urbanized area, a Municipal Separate Storm Sewer System permit is not required.

Overall, the Proposed Action would not substantially change the existing hydrologic conditions in the project area. The minor increase in the amount of new impervious surface would not substantially impact the amount of storm water runoff to area washes and drainages. As described in Section 2.3, Project Design Features and Best Management Practices, the implementation of storm water and erosion control BMPs during construction and after construction would minimize these impacts.

3.4.3 Cumulative Effects

The cumulative impact area extends beyond the project area to include the broader geographic limits of the Cienega Watershed. Present and reasonably foreseeable future actions within this project area that have impacted or may impact the affected resources are presented in Section 3.1.

No Action Alternative

The No Action Alternative would not cumulatively impact the hydrologic conditions or water quality in the cumulative impact analysis area.

Proposed Action

Although the Proposed Action may result in minor cumulative adverse effects when combined with past, present, and reasonably foreseeable actions, neither the construction nor operation of the proposed project would result in substantial changes to existing hydrologic conditions. The net increase in impervious surfaces that would be created by the Proposed Action would result in a minor increase in the amount of storm water runoff that would be directed into the washes. Erosion control BMPs implemented throughout construction would minimize any sedimentation or other changes to the existing water quality; therefore, cumulative effects to hydrologic conditions and water quality are expected to be negligible.

3.5 Vegetation, Noxious Weeds, Invasive Species

3.5.1 Affected Environment

Vegetation communities within the project area include semi-desert grassland, Sacaton semi-desert grassland, plains grassland and mesquite bosque (Jacobs, 2014a). The project also crosses through small stretches of riparian habitat at Empire Gulch and Gardner Canyon.

Sacaton semi-desert grassland is the dominant vegetative community along the project corridor. Sand dropseed (*Sporobolus cryptandrus*) dominates this community, along with several species in the Grama (*Bouteloua*) genus, squirrel tail (*Elymis elymoides*), and several species of the lovegrass (*Eragrostis*) genus (Jacobs, 2014b). Intermixed with these perennial bunchgrasses is mesquite (*Prosopis glandulosa*)—an invasive tree/shrub—and other leguminous species such as Acacia (*Acacia spp.*), which form dense bosques (wood shrubs and trees near riparian areas) (Jacobs, 2014b). Narrow bands of riparian vegetation line the banks of the Empire Gulch, providing sufficient moisture for mature cottonwoods and willows. In areas of frequent saturation, rushes (*Juncus spp.*) and sedges (*Carex spp.*) can grow. The drier Gardner Canyon area supports velvet ash (*Fraxinus velutina*) and hackberry (*Celtis reticulata*) (Jacobs, 2014b)

Noxious Weeds and Invasive Plant Species

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 [EO] 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, 2006).

Weed management in the LCNCA is guided by the LCNCA Resource Management Plan (RMP) and Record of Decision (BLM, 2003). The Plan includes management actions that prevent the introduction of exotic species unless used for the control of noxious weeds and also requires consideration of noxious weed and invasive species impacts in EAs prior to authorization of projects in the area (BLM, 2003).

Vegetation within the project area has been highly disturbed due to ongoing cattle grazing and the presence of the road. Noxious weeds and invasive species known to occur within the LCNCA include Lehmann’s lovegrass (*Eragrostis lehmanniana*).

3.5.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative none of the proposed project elements would occur and no project-related impacts to vegetation, invasive species, and noxious weeds would occur. The spread of noxious weeds and invasive species would continue as a result of natural dispersal or from land-disturbing activities such as roadway and facility maintenance, recreation and cattle grazing. The LCNCA would continue to follow the guidelines of Las Cienegas Weed Management Area (Appendix 2 of the RMP/FEIS).

Proposed Action

Minor impacts to vegetation, noxious weeds, and invasive plant species would occur. Impacts include vegetation removal and soil disturbance due to construction-related activities, and the placement of riprap, construction of a vehicle pullout/turnaround and roadside ditch cleaning.

Vegetation removal and soil disturbance during construction could create optimal conditions for the establishment of noxious weeds and invasive plant species. During construction, vehicles, construction equipment, construction materials and workers can act as vectors for the spread of noxious weeds and invasive plant species by transporting the seeds on tires, machinery, clothing and shoes and gravel. Noxious weeds and invasive plant species can also indirectly affect sensitive species by degrading their habitat through the alteration of fire or nutrient regimes.

The Proposed Action includes preventative measures to reduce the potential for introduction or spread of noxious weeds and invasive plant species. These measures are described in Section 2.3, Project Design Features and Best Management Practices, of this document. The Proposed Action will follow the guidelines of Las Cienegas Weed Management Area (Appendix 2 of the RMP/FEIS).

3.5.3 Cumulative Effects

The cumulative impact area extends beyond the project area to include the broader geographic limits of the Cienega Watershed. Present and reasonably foreseeable future actions within this cumulative impact area that have been impacted or may impact vegetation, noxious weeds and invasive species are presented in Section 3.1.

No Action Alternative

The No Action Alternative would not result in adverse impacts to existing vegetation communities, or result in the introduction and spread of noxious weeds and invasive plant species. Present conditions would persist and no cumulative effects would occur as a result of the No Action Alternative.

Proposed Action

Vegetation removal, soil disturbance, and the transport of materials during the construction of the Proposed Action could create optimal conditions for the establishment of noxious weeds and invasive plant species. Although the Proposed Action may result in minor adverse effects, the Project Design Features and Best Management Practices, as discussed in Section 2.3, would reduce the introduction or spread of invasive species and noxious weeds and limit the impact to existing vegetation communities. Therefore, when combined with past, present, and reasonably foreseeable actions, the proposed project would not result in measurable adverse cumulative impacts to existing vegetation communities or substantially add to the potential to spread invasive species and noxious weeds.

3.6 Recreation and Access

3.6.1 Affected Environment

LCNCA RMP established recreation management zones and associated management directions for lands within LCNCA. The project area is located within recreation management Zone 1 and Zone 2; with LC6900 (HWY 83 Entrance Road) and LC6900E located in Zone 1 and LC6900 (Main Road South) and LC6901 (passes by the Airstrip Group Site) located in Zone 2 (BLM, 2003).

Zone 1 areas are intended to offer easy access for a wide range of visitor types. This Zone permits the use of interpretive and educational facilities and allows for day use activities including sightseeing, wildlife viewing and photography (BLM, 2003). Zone 2 areas are intended to offer more moderate access and include designated parking, pullouts and group sites with limited visitor facilities and informational sites. Zone 2 activities include camping, hunting, horseback riding, mountain biking and OHV use, with limited visitor facilities and informational sites (BLM, 2003).

LC6900 (Main Road South), LC6900 (HWY 83 Entrance Road) and LC6901 (passes by the Airstrip Group Site) provide access to several camping and group sites including the Maternity Well Group site, Cieneguita Camp Area, Road Canyon Camp Area and Airstrip Group Site, (see **Figure 5**). LC6900E also provides access to the Empire Ranch Headquarters—a historic cattle ranch and complex consisting of numerous buildings and structures. LC6900 (Main Road South) also provides access to the Hummel Ranch Admin Site; a smaller historic ranch site located south of the Empire Ranch.

Roads within the project area provide access to other BLM roads and trails and several grazing allotments within LCNCA. Two grazing allotments, Empire Cienega and Vera Earl, can be accessed from the project area. US Border Patrol, BLM law enforcement, and the Arizona Game and Fish Department (AGFD) also utilize the roads within the project area.

3.6.2 Environmental Consequences

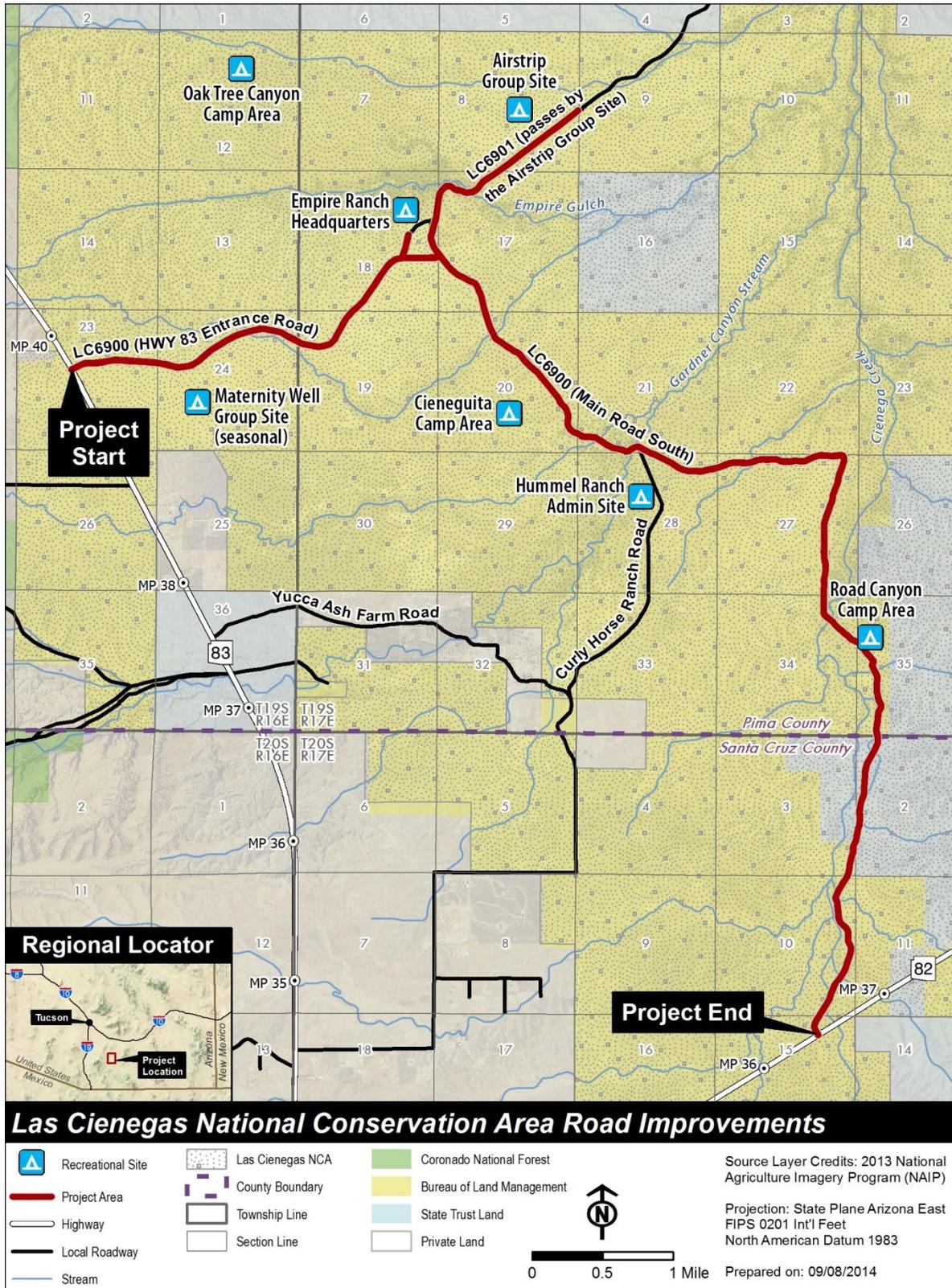
No Action Alternative

Under the No Action Alternative, none of the elements included in the proposed project would be constructed. The No Action Alternative would result in fewer disturbances to recreationists and visitors in the short-term, since no construction-related impacts would occur. However, this alternative would have long-term negative impacts on visitor safety and experience, as road surface and drainage conditions would continue to decline.

Proposed Action

The Proposed Action is consistent with CNCA recreation management directions for Zone 1 and Zone 2 local roads (BLM, 2003). A maintenance level 3 designation is assigned to all roads within the project area. Maintenance level 3 roads are surfaced with a natural or aggregate material and may include a chip seal. Maintenance level 3 roads may also contain drainage features and grading may be conducted to provide a reasonable level of vehicle riding comfort (BLM, 2003).

Figure 5. Recreation Sites near the Project Area



The Proposed Action would improve the road surface and drainage conditions within the project area, improving the visitor experience within LCNCA. However, adverse short-term, construction-related impacts including traffic delays and restrictions due to lane and road closures would occur. As previously noted in the Project Description, during construction of the road improvements traffic would be restricted to a single lane along all roads except for LC6900 (Main Road South). During construction and installation of the low-water crossings and cattle guards, LC6900 (Main Road South) would be closed for two closures, lasting up to three weeks each. During construction of the drainage improvements, one lane of traffic would remain open along all roads.

During the closures of LC6900 (Main Road South), recreational access to Cieneguita Camp Area, Road Canyon Camp Area and access to the grazing pastures from LC6900 (Main Road South) would be closed. These closures would result in minor impacts to visitors since recreational use is lower during the winter months. To minimize the impacts to visitors, allotment lessees, special recreation permit holders, and local law enforcement the BLM and FHWA-CFLHD would provide notification of the closure periods to the contracting officer, allotment lessees, special recreation permit holders, US Border Patrol and AGFD by providing two months advance notice of the closures. Notice of the road closures would also be posted on the BLM Tucson Field Office website. Overall, the Proposed Action would not result in significant impacts to the recreational resources and access within the project area.

3.6.3 Cumulative Effects

The project area for cumulative impacts extends beyond the project area to include the broader geographic limits of the Cienega Watershed. Present and reasonably foreseeable future actions within cumulative impact area that have impacted or may impact the affected resources are presented in Section 3.1.

No Action Alternative

As mentioned above, the No Action Alternative would result in fewer disturbances to recreationists and visitors within LCNCA in the short-term since no construction related impacts would occur. However, this alternative would have long-term negative impacts on visitor safety and experience in LCNCA as road surface and drainage conditions would continue to decline. When combined with past, present and reasonably foreseeable future projects the No Action Alternative would result in minor, yet adverse cumulative effects to recreation and access within LCNCA.

Proposed Action

Although the Proposed Action may result in minor adverse effects, the Project Design Features and Best Management Practices would reduce the impacts to recreational resources and access during construction of the Proposed Action. The Proposed Action is not expected to have significant adverse impacts on recreation within LCNCA. In the short-term, the Proposed Action would have minor adverse cumulative effects to recreation and access due to closures. The long-term benefits of the project negate any short-term negative cumulative effects.

3.7 Soils

3.7.1 Affected Environment

Soils generally consist of sand, silt, and/or clay particles. Soils with about equal proportions of sand, clay, and silt are called loams. Many intermediate classes exist, such as silty clay loam. The way soil responds to impacts depends to a large extent on its type. Sandy soils hold more air and less water than other types, drain readily, and tend to be excessively dry. Clay and silt soils hold more water but less air than sandy soils. Clay soils can remain waterlogged for long periods of time, have low strength and a high shrink and swell potential. Loams generally have the best balance of water availability and drainage (Hammit and Cole, 1998).

The project area includes several soil types. A field investigation was conducted and 19 soil test pits were dug within the roadway surfaces. Subgrade soils found included clayey sand along LC6900 (HWY 83 Entrance Road), lightly cemented clayey sand along LC6900E, silty sand with gravel and cobbles along LC6901 (passes by the Airstrip Group Site), and hard cemented sandy clay and dense gravelly clayey sand along LC6900 (Main Road South) (Yeh and Associates, 2014). Additionally, soil test pits were excavated at drainages where the low water crossings are proposed. Below the loose sand streambed materials, the subsoil consisted of stiff, moist sandy clay or loose to dense, moist sand and gravel (Yeh and Associates, 2014).

Subgrade soil problems are apparent on LC6900 (HWY 83 Entrance Road) and Empire Ranch Road, the BLM has identified pockets of soft material along the roadway (Jacobs, 2013).

3.7.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, none of the elements included in the project would be constructed. Project-related impacts to soils would not occur. Existing soil conditions would continue.

Proposed Action

Soils within the project area would be affected by construction-related activities. Soils also have the potential to affect the Proposed Action, (e.g., from swelling soils and susceptibility to erosion).

Construction of the proposed road improvements (resurfacing, cattle guards and signs), low water crossings, and the majority of the drainage improvements would impact previously disturbed soils within the roadway surface and roadway prism and beyond. The installation of riprap would result in new soil disturbance outside of the roadway prism; however, proper placement of riprap would help address existing roadside erosion issues.

Soil erosion within the project area may increase due to the minor increase in impervious surfaces. Because the Proposed Action would disturb more than one acre, an AZPDES is required prior to construction. As part of the permit requirements, a SWPPP would be created and implemented, as

stated in Section 2.2 Project Design Feature and Best Management Practices. Impacts to soils during construction would be minimized through the BMP implementation outlined in the SWPPP.

A final surfacing technical memorandum will be completed prior to construction. Based on the existing soils, this memorandum will provide recommendations to the contracting officer on the type and amount of aggregate and chip seal to use during resurfacing, as well as the type of concrete to use for the low water crossings to prevent damage that may result from existing soil conditions.

Overall, given the low amount of new soil disturbance and minor increase in impervious surface, as well as implementation of a SWPPP, which would reduce these impacts, the Proposed Action would result in negligible impacts to soils.

3.7.3 Cumulative Effects

The project area for cumulative impacts (cumulative impact analysis area) extends beyond the project area to include the broader geographic limits of the Cienega Watershed. Present and reasonably foreseeable future actions within this project area that have impacted or may impact the affected resources are presented in Section 3.1.

No Action Alternative

As mentioned above, project-related impacts to soils would not occur. Existing soil erosion within the project area due to water and wind would continue. When combined with past, present and reasonably foreseeable future projects the No Action Alternative would have no cumulative impacts to soils.

Proposed Action

The Proposed Action would cause minor new soil disturbance and an increase in impervious surfaces within the project area. However, through Project Design Features and the implementation of BMPs, soil impacts from storm water runoff are expected to be minimal. Because implementation of BMPs within the SWPPP would minimize the already minimal soil impacts, the Proposed Action, when combined with past, present, and reasonably foreseeable future projects, is not expected to have measurable adverse cumulative impacts to soils.

3.8 Wetlands and Riparian Areas

3.8.1 Affected Environment

A delineation of waters of the US was conducted in July of 2014 (see Appendix B). Additionally, prior to the field visit, a desktop review of the project area was completed that included a review of aerial imagery, topographic maps, National Wetlands Inventory (NWI), Natural Resource Conservation Service soils data, and a national wetland plant list (Jacobs, 2014b). For more information on the hydrologic condition of the project area, see the Section 3.4, Hydrologic Conditions and Water Quality.

During the July 2014 site visit, a wetland delineation was completed within the project area in accordance with the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental

Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE, 2010). Approximately 0.013 acre of potentially jurisdictional wetland and 0.161 acre of potentially jurisdictional other WUS were identified within the project area (Jacobs, 2014b). The recommended jurisdictional wetland is located at the intersection of LC6901 (passes by the Airstrip Group Site) and Empire Gulch. Potentially jurisdictional other WUS are located along all roads except for the LC6900E (see **Figure 6**).

Riparian areas are located within the project area at Empire Gulch, Gardner Canyon and Cienega Creek; however, the NWI only classifies Empire Gulch and Gardner Canyon as riparian. Empire Gulch is the most significant riparian corridor, supporting mature cottonwood and willows. Dominant vegetation at Gardner Canyon includes Velvet ash (*Fraxinus velutina*) and to a lesser extent mesquite (*Prosopis glandulosa*) which constitutes roughly 15 percent of riparian cover. At the intersection of the project area and Cienega Creek, no traditional riparian vegetation such as cottonwood or ash was found. Dominant vegetation included shrubby mesquite and sagebrush (*Artemisia* spp.) (Jacobs, 2014b).

3.8.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, none of the improvements included in the proposed project would be constructed and no project-related impacts to wetlands or riparian areas would occur.

Proposed Action

Proposed road improvements located adjacent to the identified wetland area include road resurfacing, which would be completed within the roadway prism and would not impact the wetland. The Proposed Action would result in direct impacts to riparian areas and potentially jurisdictional other WUS. These impacts would result from road resurfacing, roadside ditch cleaning and vegetation removal, and the installation of signs and low-water crossings.

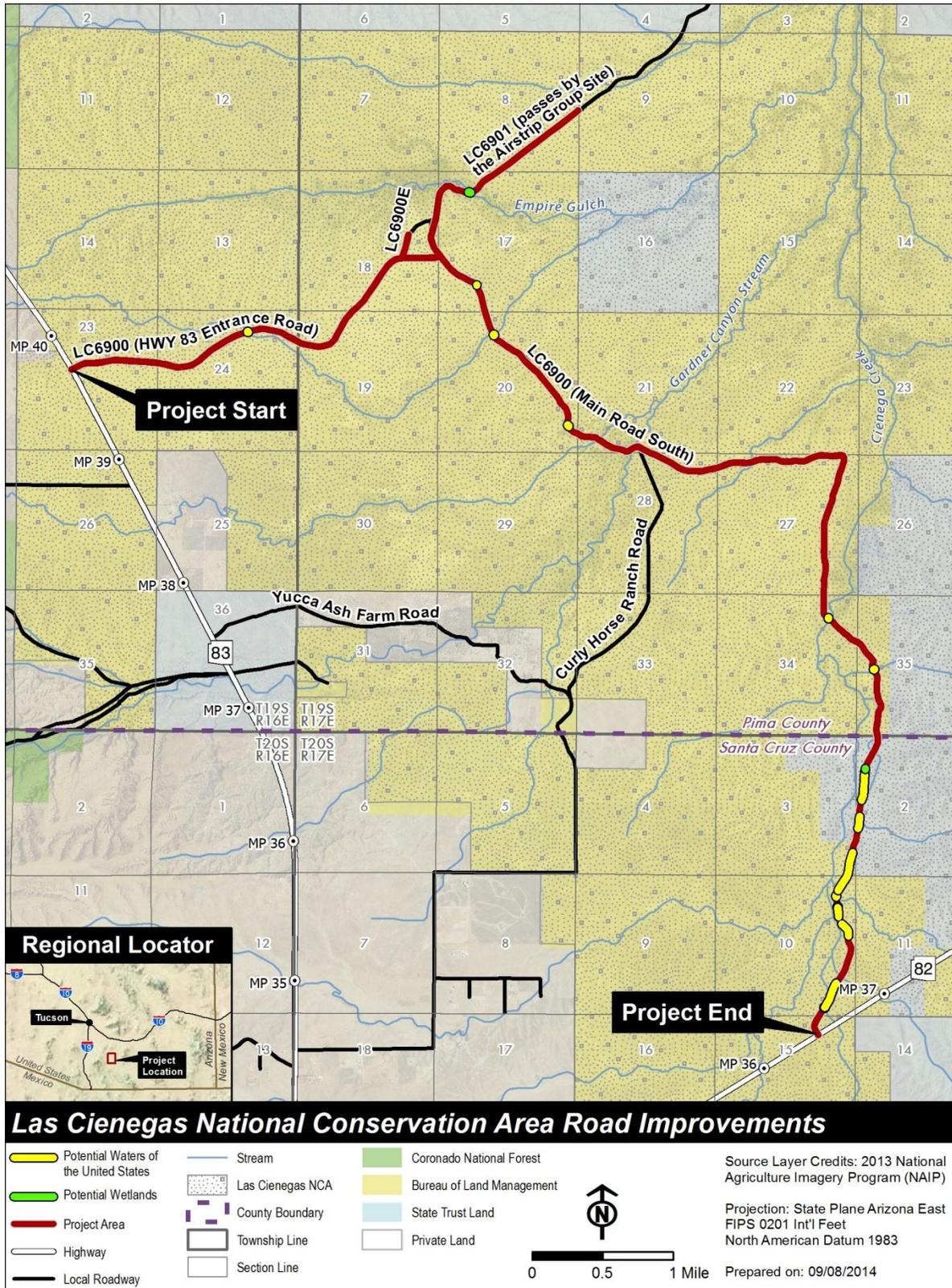
Indirect impacts would occur due to the net increase in impervious surface area as a result of the Proposed Action. This increase in impervious surface would result in a minor increase in the amount of storm water runoff that would be directed into the washes and drainages. Implementation of a SWPPP during construction would minimize any sedimentation or other changes to the existing water quality (see Section 3.2 Hydrologic Conditions and Water Quality for more information on storm water and water quality).

On behalf of the BLM, FHWA-CFLHD submitted a request for a preliminary jurisdictional determination to the US Army Corps of Engineers (USACE), and the USACE is currently reviewing this request. The project would not result in the permanent “loss” (as defined in 40 CFR 230.40-45) of wetlands; however the Proposed Action would result in impacts to potentially jurisdictional WUS. Coordination with the USACE will be conducted and a Section 404 Nationwide Permit and the Arizona Department of Environmental Quality Section 401 Water Quality Certification will be obtained.

3.8.3 Cumulative Effects

The project area for cumulative impacts (cumulative impact analysis area) extends beyond the project area to include the broader geographic limits of the Cienega Watershed. Current and reasonably foreseeable future actions within this project area that have impacted or may impact the wetlands and riparian areas are presented in Section 3.1.

Figure 6. Potentially Jurisdictional Waters of the US



No Action Alternative

The No Action Alternative has no direct or indirect impacts to wetland or riparian areas. Therefore, when combined with past, present and reasonably foreseeable future projects, the No Action Alternative would not result in cumulative impacts to wetlands and riparian areas.

Proposed Action

Although the Proposed Action may result in minor adverse effects to WUS and riparian areas, when combined with past, present, and reasonably foreseeable actions, neither the construction nor operation of the proposed project would not cumulatively impact existing hydrologic conditions or associated vegetation, including wetlands and riparian areas. The net increase in impervious surface area that would be created by the project would result in a negligible increase in the amount of storm water runoff that would be directed into the washes. Implementation of the SWPPP throughout construction would minimize sedimentation or other changes to the existing water quality.

3.9 Visual Resources

3.9.1 Affected Environment

LCNCA RMP, adopted July 25, 2003, assigned a Visual Resources Management (VRM) Classification of primarily Class II, for the project area. The VRM Class II objective is to retain the existing character of the landscape and the level of change to the characteristic landscape should be low (BLM, 1986). Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape (BLM, 1986).

LCNCA is considered a visually sensitive area due to its status as a conservation area and its natural setting. Vegetative communities within the project area include semi-desert grassland, Sacaton semi-desert grassland, plains grassland, and mesquite bosque (Jacobs, 2014a). These vegetative communities produce muted green, grey, and brown color patterns. Soil colors are light tan and light brown. The project also crosses through small drainages and riparian areas, which produce more vibrant greens.

Views from the majority of the project area by motorists and recreationists are open and unobstructed and include views of natural landforms and desert vegetation with rolling hills and mountains.

Prominent landforms visible from the project area by visitors include Mount Wrightson and the Santa Rita Mountains located west of the project area and Apache Peak and the Whetstone Mountains located east of the project area. These mountains are jagged, pronounced and create a dominant background. Near the riparian and drainage areas, views for motorists and recreationists are typically limited to a distance of less than a few hundred feet due to the winding and curving nature of the roadway, the rolling topography, and the screening provided by the desert vegetation.

3.9.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, none of the proposed project elements would be constructed. No temporary or permanent impacts to visual resources would occur. The No Action Alternative would be consistent with the VRM Class II Objective.

Proposed Action

The Proposed Action would result in minor visual changes to the existing visual environment. The proposed cattle guards, signs, and drainage improvements would not result in measurable visual changes as these project elements are similar in existing form, line, color and texture. Minor visual changes would result from paving LC6900 (HWY 83 Entrance Road) and LC6900E, and the installation of the low water crossings. These project elements would result in changes in color and texture from the existing environment. To mitigate these visual changes, the aggregate surface material, paving chip seal and concrete color would be matched with the surrounding soil colors (light tan and light browns). Samples of surface will be obtained and submitted to the contracting officer before ordering any materials for use on the project site. It should be noted that the chip seal will lighten as time passes.

3.9.3 Cumulative Effects

The project area for cumulative impacts extends beyond the project area to include the broader geographic limits of the Cienega Watershed. Current and reasonably foreseeable future actions within this cumulative impact area that have impacted or may impact visual resources are presented in Section 3.1.

No Action Alternative

The No Action Alternative would not directly or indirectly impact visual resources. Therefore, when combined with past, present and reasonably foreseeable future projects the No Action Alternative would not result in adverse cumulative effects to the existing visual environment.

Proposed Action

Projects within LCNCA, such as the Cinco Well Pipeline and Lane Tank Drinkers project, would be constructed following VRM guidelines that would maintain the existing visual environment of LCNCA.

The visual changes brought about by the proposed project would be minor, and the level of impact would be low. Project design features to ensure compliance with VRM Class II guidelines would mitigate any adverse effects. 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 be consistent with the VRM Class II guidelines.

3.10 Mitigation Measures

The design features and BMPs discussed earlier in the document (Section 2.3) were developed to avoid and minimize impacts of the project and will be included in construction contract.

3.10.1 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 prior to construction. Additional measures to control the spread of noxious weeds are listed below.

3.10.2 Migratory Birds and Federally Listed Species

- Construction must be completed by March 15, 2015. If construction activities cannot be completed by March 15, 2015, then the contractor must contact the CFLHD Environmental Team Leader or other CFLHD Environmental Staff. The CO should notify the environmental staff as soon as possible, but no later than March 1, 2015. The CFLHD Environmental Staff, in coordination with BLM will determine appropriate course of action which may include additional survey, monitoring or restrictions on construction activities. The CO will be notified of the determination and construction may be delayed to avoid effects.

3.10.3 Recreation

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

3.10.4 Soils

- A SWPPP will be developed prior to construction and implemented throughout the life of the project.

4.0 Agency Consultations

Name
Federal Highways
Arizona State Land Department
Arizona Department of Transportation

5.0 List of Preparers

Name	Title
BLM Staff	
Amy Markstein	BLM Tucson Field Office Planner
Jeff Simms	BLM Fisheries Biologist
Heather Swanson	BLM Biologist
FHWA-CFLHD	
Jeff Berna	Environmental Program Specialist

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Appendix A: Biological Evaluation

See attached document

