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Federal Highway Administration

Nevada Division

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October 8, 2014

In Reply Refer To:
HTE1-NV
STP-160(022)

Mr. Rudy Malfabon, P.E.
Director, Nevada Department of Transportation
1263 South Stewart Street
Carson City, Nevada 89712

Subject: Finding of No Significant Impact (FONSI) for the SR 160 Corridor Improvements (SR 159 to Mountain Springs), Clark County, Nevada

Dear Mr. Malfabon:

The Nevada Department of Transportation's September 15, 2014 letter requested a Finding of No Significant Impact (FONSI) for SR 160 improvements from SR 159 to Mountain Springs, Clark County, Nevada. The Federal Highway Administration (FHWA) has determined that the project will have no significant environmental impacts. Please refer to the enclosed FONSI and its attachments.

The Environmental assessment (EA) was approved for circulation on June 16, 2014 and Public Design Hearing (Public Hearing) was conducted on July 8, 2014 at the Frias Elementary School in Las Vegas, Nevada.

Based on the information included in the transmittal letter, other letters from NDOT, the EA, errata sheet, and the public hearings transcripts, FHWA made the no significant environmental impacts determination. Please contact me at (775) 687-1206 or Abdelmoez Abdalla at (775) 687-1231if you have any questions.

Sincerely,

Iyad Alattar
Transportation Engineer

Enclosure

ec: Sue Klekar, FHWA
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FEDERAL HIGHWAY ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT (FONSI)
for
SR 160 Corridor Improvement: SR 159 to Mountain Springs

Federal Aid Number: STP-0160(022)
NDOT Project Number: 73395
EA Document Number: FHWA-NV-EA-13.01

1. Study Area Description

The Federal Highway Administration (FHWA) and the Nevada Department of Transportation (NDOT) prepared an Environmental Assessment (EA) to analyze transportation improvements for 11 miles of Nevada State Route (SR) 160 from the SR 160/159 intersection to a point 1.24 miles west of the Mountain Springs Summit in Clark County, Nevada (Exhibit 1). The study area is on the southwest edge of the Las Vegas metropolitan area roughly 15 miles southwest of downtown Las Vegas.

SR 160 passes through the unincorporated community of Mountain Springs on the west end of the study area. It is aligned about 1 mile south of the community of Blue Diamond on the east end. Most of the land adjacent to SR 160 in the study corridor is owned by the United States Government and administered by the Bureau of Land Management (BLM) or the United States Department of Agriculture Forest Service (USFS), with some private land near both project termini. The eastern part of the study area crosses the BLM-managed Red Rock Canyon National Conservation Area (NCA), whereas the western part crosses USFS's Spring Mountains National Recreation Area (NRA) in the Humboldt-Toiyabe National Forest.

The 11-mile-long project is one of 10 completed or planned NDOT SR 160 projects that are part of a multi-year SR 160 expansion program in Clark and Nye counties. These projects extend roughly 55 miles along SR 160 from I-15 in Las Vegas to Pahrump. SR 160 is the primary transportation link connecting the Las Vegas metropolitan area, specifically southwest Las Vegas, downtown Las Vegas, and I-15, to Pahrump and Death Valley National Park. As of 2014, of the SR 160 projects proposed between I-15 and Pahrump, only the section evaluated in this study and a section from the Nye County line to Pahrump have yet to be improved to address capacity and safety needs. SR 160 projects expanding the highway to four lanes (two in each direction) adjacent to this project have been completed, leaving the section under study the sole remaining two-lane section of SR 160 in Clark County.

2. Project Description

FHWA and NDOT studied alternatives to improve the safety and travel efficiency in the SR 160 corridor from the SR 160/SR 159 intersection to a point 1.24 miles west of the Mountain Springs Summit along SR 160. The proposed action includes the following elements:

- Widening the roadway from two travel lanes to four.
- Adding a 14-foot-wide median (painted or raised) for the length of the study corridor. Depending on the location within the study corridor, the median would serve as a two-way left-turn lane (TWLTL) or consist of a 2-foot-wide median island at some locations in Mountain Springs used to delineate left-turn pockets and a 14-foot-wide island near the SR 159 intersection.
- Constructing an 8-foot-wide shoulder with bike lane symbols on both sides of the road.

- Evaluating options for eliminating conflicts between faster-moving through traffic and slower-moving traffic entering and exiting SR 160 in Mountain Springs.
- Improving roadway geometrics to address safety concerns.
- Lighting and intelligent transportation system (ITS) features to improve safety.

The proposed project is included in the 2012–2021 Transportation System Projects approved by the State Transportation Board of Directors on October 10, 2011. The project is found in the FY 2014–2017 Statewide Transportation Improvement Program (STIP), page Statewide 6, and in the 2013 Annual Work Program, as part of the FY 2015–Short-Range Element as project CL200749-15. It also is listed in the RTC's Transportation Improvement Program 2013–2016 as project number 4018. RTC's Regional Transportation Plan 2013–2035, approved in 2012, discusses the need for SR 160 to be expanded to four lanes to Mountain Springs as a regional strategic investment. The plan notes that the introduction of large scale commuter traffic along this corridor could result in capacity and congestion issues. The proposed project is also included in the Northwest Clark County Land Use Plan (2013).

3. Purpose and Need

The purpose of the proposed action is to improve safety and operational efficiency on SR 160 in response to existing and proposed development in the Las Vegas and Pahrump areas while minimizing impacts to the natural and built environment.

The need for transportation improvements along the SR 160 corridor is based on a combination of factors related to safety, roadway deficiencies, traffic demand, capacity, and route continuity/regional planning.

In regards to safety, the total, fatal, injury, and property damage only crash rates in the SR 160 corridor are two to three times greater than statewide rates on similar roadways. On this segment of SR 160, over a 5-year period from 2006 to 2011, there were 10 *fatal crashes* that resulted in 12 fatalities and 4 injuries and 109 *injury crashes* that resulted in 148 injuries. A critical crash rate analysis indicated that the injury, property damage only, and total crash rate on SR 160 in the study area exceed the critical crash rate.

NDOT evaluated conditions along SR 160 to identify geometric and other roadway deficiencies and found this section of roadway contained tight curves with inadequate banking, narrow shoulders, and a high rate of speed. The geometric review identified 13 curves that fall short of design guidelines. Several areas in the western end of the project lack the appropriate roadside clear zone, and there are several access points along SR 160 without acceleration and deceleration lanes.

Future traffic volumes generally will cause SR 160 to operate at an unacceptable level of service D or worse in both the morning and afternoon peak periods if no improvements are made to the highway.

4. Selected Alternative

The alternative selected by FHWA and NDOT for the SR 160 Corridor Improvement study consists of widening SR 160 to four general purpose lanes (two in each direction) with a 14-foot median and 8-foot shoulders/ bicycle lanes. The Selected Alternative addresses the safety, operational, and geometric deficiencies along SR 160.

The eastern 7 miles of the project (from mile post (MP) 11 [east terminus] to MP 18) would consist of four 12-foot travel lanes with a 14-foot painted median and 8-foot shoulders with bike lane symbols (Exhibit 2). Traffic on SR 160 would be free-flow through the SR 159 and Avery Street intersections. SR 159 traffic would have to stop at stop signs at SR 160. This intersection will remain a two-way stop with a stop condition on SR 159 until a

higher order control (traffic signals, roundabout) is warranted. At the Avery Street intersection with SR 160, traffic on Avery Street would have to stop at stop signs at SR 160 and right-in, right-out access would be provided.

Through Mountain Springs (Exhibit 3), right turns would be permitted to and from roadways and SR 160 will include raised median islands and left-turn pockets to improve the safety of motorists turning into or out of the community. Left turns would not be permitted except at the designated intersections. Some intersections along SR 160 in Mountain Springs would become "high-T" intersections. The high-T intersections would have a 2-foot-wide raised island to delineate a left-turn pocket, storage space for vehicles turning left, and an acceleration area for turning vehicles merging with through traffic. In Mountain Springs, high-T intersections would be located at Williams Ranch Road and a new combined access point to Benedict Road and Pinion Drive.

In front of the Mountain Springs Fire Station, a large median opening would allow emergency vehicles to enter and exit the fire station from either direction. Left-turn lanes with refuge areas would be provided in both directions and an access point to Rosary Road and residences would be located directly across from the fire station. A frontage road roughly a quarter-mile long would be constructed south of SR 160 from the fire station median opening to a location opposite the new Benedict Road/Pinion Drive access point. The frontage road, within existing NDOT right-of-way, would provide access to the residences on Rosary Road and those with driveways off existing SR 160 east of Rosary Road.

As noted, access to Benedict Road and Pinion Drive from SR 160 would be consolidated to one access point. A frontage road roughly 800 feet long, within existing NDOT right-of-way, would provide access to both streets from SR 160. At the east end of this frontage road, near Pinion Drive, access to and from SR 160 would be provided by a right-in/right-out access point.

A right-turn pocket for westbound traffic would be provided at Williams Ranch Road. No other acceleration or deceleration lanes are proposed in the Mountain Springs area. Motorists entering private driveways on the right side of SR 160 would need to slow down in the shoulder to reach a comfortable speed before turning.

At each end of Mountain Springs, a U-turn movement would be provided to allow for greater access to Mountain Springs. West of Mountain Springs, the U-turn would be provided for westbound traffic roughly 0.5 mile west of the Williams Ranch Road intersection. A left-turn pocket would be provided for westbound traffic making a U turn. East of Mountain Springs the U-turn would be located 0.35 mile west of Mount Potosi Canyon Road. A left-turn pocket would be provided for eastbound traffic making a U-turn. A high-T intersection would be located at the SR 160 intersection with Mount Potosi Canyon Road. A 2-foot-wide raised island would be provided to delineate a left-turn pocket, provide a refuge area for vehicles turning left from westbound SR 160 to Mount Potosi Canyon Road, and provide an acceleration area for vehicles turning left from Mount Potosi Canyon Road to westbound SR 160 to merge with through traffic.

Because of the posted speed and raised median islands located at the high-T intersections along SR 160, NDOT would install lighting to ensure safety in accordance with national lighting design recommendations at these intersections. Along with the high-T intersections, lighting would be installed near the Mountain Springs Fire Station, the U-turn intersections at each end of the community, the Mount Potosi Canyon Road intersection, and the Avery Street intersection. Lighting would be standard NDOT Type 7 light poles (32 feet high) with light-emitting diode (LED) fixtures. The standard NDOT LED fixtures have backlight-uplight-glare ratings that are equivalent to a full cutoff classification to help mitigate sky glow, light trespass, and glare. The lighting will be installed entirely within NDOT right-of-way, avoiding areas of environmental concern.

In addition to roadway lighting, intelligent transportation system (ITS) infrastructure would be installed to enhance NDOT Maintenance Decision Support System and to assist the Clark County Freeway and Arterial System of Transportation (FAST) network with traffic incident and congestion management monitoring. The

infrastructure would include conduit, fiber optic cable, standard ITS pull boxes, and flow detectors and closed-circuit cameras on standard NDOT ITS poles (standard pole sizes are 30, 50, or 80 feet). The ITS infrastructure would be installed entirely within NDOT right-of-way, avoiding areas of environmental concern. A pole would be placed near the Mountain Springs Summit, and four to five shorter poles would be placed between Mountain Springs and SR 159. Final decisions regarding lighting and ITS components will be made during the final design.

NDOT is considering constructing the project in two phases. Phase 1 would begin at the project's eastern terminus (the SR 160/SR 159 intersection) and continue roughly 6 miles to the west (near mile post [MP] 17, by the Cottonwood Valley Trailhead). Phase 1 has an estimated cost of $20 million to $25 million, with an anticipated start of construction in fiscal year 2015–2016. The second phase would construct the remaining 5 miles through the mountainous areas and the Mountain Springs community. The second phase has an estimated construction cost of $40 million to $45 million. The construction start date for Phase 2 has not been determined. The estimated cost for the entire length of the Preferred Alternative is estimated at $60 million to $70 million based on the 30 percent construction plans.

5. Project Impacts and Mitigation

Table 1 lists measures that will be implemented during the design or construction phases of the project to avoid, reduce, or otherwise mitigate environmental impacts associated with the project's preferred alternative. Mitigation measures and actions are to comply with federal, state, and local laws/regulations.

On page 3-36 of the EA it incorrectly stated that tribal monitors will be present during fence installation and construction. Native American monitors are not required for this project.

The mitigation measures table below is from the EA, but it has been updated to include measures identified in the EA text, but not included in the EA mitigation measures table and to include a new measure addressing wildlife connectivity and vehicle/wildlife conflicts.

The following mitigation measures and commitments are not subject to change or modification without prior written approval from FHWA. This list does not include any of FHWA's permits, approvals, or reviews that are required related to Plans, Specifications, and Estimates; rights-of-way; contracts; or other design or administrative aspects of the project.

Table 1. Project Mitigation Measures

Responsible Party	EA Page No. Reference	Mitigation Category	Description
Contractors	3-5	Air Quality	The analysis shows the project meets the transportation conformity requirements, and that impacts directly associated with project operation would not have a significant adverse effect on air quality. No air quality mitigation is required. Construction contractors will be required to obtain necessary permits that would include a dust control permit for construction activities. Reductions in pollutant emissions from diesel engines can be obtained through such strategies as reducing idling, properly maintaining equipment, and retrofitting diesel engines with diesel emission control devices. Impacts associated with fugitive dust generated by construction would be mitigated by standard dust control measures.

Table 1. Project Mitigation Measures

Responsible Party	EA Page No. Reference	Mitigation Category	Description
NDOT	3-10	Socioeconomic	A traffic plan would be created to maintain access during construction to Mountain Springs and the residential development near the eastern project terminus. NDOT would coordinate with project-area residents about the construction schedule. Under the Preferred Alternative, the mailboxes located near the fire station in Mountain Springs and on the north side of SR 160, roughly 250 feet east of Pinion Drive, would be moved to the Benedict Road/Pinion Drive frontage road for those living on the north side of SR 160 and to the south frontage road for those living south of SR 160. A small pullout would be located along the frontage roads for residents to pick up their mail and review the community bulletin board without disrupting traffic. School bus stops would be located in the same locations, preventing children from having to cross the highway to reach the bus stop. If an estimated 0.7 acre of new right-of-way is required, the NDOT Right-of-Way Division, under the guidance of the Relocation Assistance and Real Property Acquisition Policy Act of 1970 (Uniform Act), will negotiate with the property owners directly affected, ensuring that fair market value is received for the required right-of-way.
NDOT	3-16	Visual Resources	A landscape element will be part of the final design for the project through coordination with NDOT's Landscape Architecture group. In Mountain Springs, a vegetative buffer will be placed between the frontage roads (shown on Exhibit 2-11 of the Environmental Assessment) and SR 160, and existing trees will be preserved where possible. NDOT may spend up to 3 percent of the construction budget on landscape and aesthetics. Most likely, revegetation will occur in Mountain Springs during construction. Any cut or fill area where native vegetation is disturbed will be the location where revegetation takes place, as long as it is not located within the roadway clear zone. Through Mountain Springs, cut slopes would be "roughened" so that they would not have the consistent smooth appearance freshly cut slopes generally have. If retaining walls are constructed to avoid right-of-way impacts, color and texture to the concrete of the walls would be included to reduce color contrast that would occur with standard, untreated concrete. To mitigate concerns about the introduction of lighting along SR 160, the poles, mast arms, and fixture casings could be painted in a color that blends in with the surrounding environment. Lights would be placed only at conflict points and not through the entire length of the intersection. The standard NDOT LED fixtures have backlight-uplight-glare ratings that are equivalent to a full cut-off classification, which helps to mitigate sky glow, light trespass, and glare. Lighting will be focused away from the residential areas to minimize nighttime visibility of the lights from the residences.
NDOT	3-21	Waters of the U.S.	The preliminary opinion of the USACE is that the ephemeral washes adjacent to SR 160 are considered to be waters of the U.S. if they flow east toward the Las Vegas Wash. As noted above, during the design phase, NDOT will coordinate with the USACE to determine which drainages are jurisdictional and will require Section 404 permits before construction. NDOT will adhere to all permit terms and conditions. By federal law, every applicant for a federal permit or license for an activity that may result in a discharge into a water body must request a Section 401 water quality certification from the state that the proposed activity will not violate state and federal water quality standards. As noted in the December 2013 telephone memorandum in Appendix A of the Environmental Assessment, the USACE normally does not require mitigation for culvert extensions of the type currently proposed for this project because by maintaining existing drainage patterns, there is no impact on waters of the U.S.

Table 1. Project Mitigation Measures

Responsible Party	EA Page No. Reference	Mitigation Category	Description
NDOT	3-22	Floodplains	Since SR 160 is aligned immediately adjacent to the 100-year floodplain of the east wash and, in some places, the floodplain encompasses the highway, spanning the floodplain or moving the highway are the available avoidance alternatives. Because of cost consideration and level of impacts, however, these alternatives are not practicable. The No-Build Alternative, which would avoid floodplain impacts but does not serve the purpose of and need for the project, is not practicable. A narrow (14-foot) median is proposed for the length of the Preferred Alternative. The narrow median, compared to a standard 30-foot median, will reduce floodplain impacts because there will be less encroachment on the floodplain and less highway surface area.
NDOT	3-24	Upland Habitat	Native Nevada cacti and yucca are protected and regulated by Nevada Revised Statutes. NDOT will salvage native Nevada cacti and yucca that will be affected by construction. NDOT's contractor shall develop and implement a Noxious Weed Management Plan to prevent the establishment and spread of Nevada State listed noxious weeds per Nevada Revised Statute 555.
NDOT and Contractor	3-31	Threatened and Endangered Species	In March 2013, NDOT submitted a biological assessment for the desert tortoise to the USFWS in order to append the existing FHWA/NDOT/USFWS Programmatic Biological Opinion (PBO) No. 84320-2010-F-0285 on potential effects to the Mojave desert tortoise. In April 2013, USFWS noted the scope of the SR 160 project is not likely to jeopardize the continued existence of the Mojave desert tortoise and is within the scope of the PBO and appended the PBO (See Appendix A for 4/12/13 letter from USFWS). NDOT will adhere to all terms and conditions of the PBO and any other project-specific terms and conditions set forth by the USFWS. All right-of-way fencing on both sides of the roadway within the entire project limits will be replaced with three- strand smooth wire fencing, and desert tortoise fence fabric will be retrofitted to the right-of-way fence from MP 12.15 to MP 17.94. An existing cattle guard at MP 12.15 and an existing box culvert at MP 17.94 provide opportunities for fence tie-in such that the ROW can be completely enclosed. Where right-of-way fencing is at the right-of-way boundary line within these limits, the new fencing will be offset 1 foot toward the roadway to allow for installation of tortoise exclusion fencing without the need for temporary construction easements. Native Nevada cacti and yucca are protected and regulated by Nevada Revised Statutes. NDOT will salvage native Nevada cacti and yucca that will be affected by construction.
NDOT and Contractor	3-32	Wildlife	All right-of-way fencing on both sides of the roadway within the entire project limits will be replaced with 3 strand smooth wire fencing and desert tortoise fence fabric will be retrofitted to the existing ROW fence from MP 12.15 to MP 17.94. Where right-of-way fencing is at the right-of-way boundary line within these limits, the new fencing will be offset 1-foot towards the roadway to allow for installation of tortoise exclusion fencing without the need for temporary construction easements. Any vegetation and structures that will be removed will conform with the Migratory Bird Treaty Act to avoid impacts to listed migratory birds (50 CFR 10.13) that may be using vegetation and structures for nesting. When possible, removals should not occur during avian breeding season (generally March 15 through July 31). Raptors and owls may begin nesting as early as January. If removals must occur during avian breeding season, nesting surveys must be conducted by a biologist with experience in bird identification, general nesting behavior, nest and egg identification, and knowledge of habitat requirements for migratory birds.

Table 1. Project Mitigation Measures

Responsible Party	EA Page No. Reference	Mitigation Category	Description
			Bird nests containing eggs or young will not be disturbed until after the young have left the nest, including swallows nesting on structures, and bats using structures for roosting. FHWA and NDOT will investigate alternative improvements beyond smooth wire wildlife fencing to enhance wildlife connectivity and reduce vehicle/wildlife conflicts into the final project design in consultation with NDOW and other affected agencies.
NDOT and Contractor	3-33	Wild Horses and Burros	NDOT will coordinate with BLM's wild horse and burro specialist to determine whether modifications are required to the extended culvert at the Late Night Trailhead to ensure its continued use by burros.
NDOT	3-37	Cultural Resources	**NRHP- Eligible Archaeological Properties** No ITS poles or streetlights will be within the viewshed of the two archaeological sites eligible under Criterion C. Archaeological avoidance areas will be fenced off and no construction will be allowed within the avoidance areas. An archaeological monitor will be present during installation. If an inadvertent archaeological discovery occurs, no further construction in the area of the discovery will proceed until the requirements of 36 CFR 800.13 and Nevada Revised Statues 383 have been satisfied, including consultation with SHPO and with Native American Tribes that may attach traditional cultural and religious significance to the discovered property. Native American consultation will continue until the project is constructed. **NRHP-Eligible Architectural Properties** The project proposes streetlights be placed at certain intersections along SR 160. To minimize the impact, lighting will follow the recommendations of the International Dark-Sky Association. The lights will be LED fixtures with backlight-uplight-glare ratings that are equivalent to a full cut-off classification to help mitigate sky glow, light trespass and glare. The minimum number of lights will be used to achieve the required safety standards. If the Mountain Springs residents request it, NDOT will paint the streetlights green or brown to help the lights blend in with their surroundings. Road widening will require the removal of about 100 trees in the Mountain Springs area. When tree removal thins the visual screen provided by the overstory, the trees will be replaced with two smaller trees. Any trees that are replanted will be irrigated, if needed, to ensure that they thrive. No ITS poles will be installed within a half-mile radius of any historic architectural property. This will ensure that the ITS poles will not be visible from any NRHP property or property being treated as eligible.
NDOT and Contractor	3-38	Geology and Soils	No geology or soils mitigation is required. NDOT salvages topsoil on projects for reuse as needed throughout the project area.
NDOT	3-40	Public Use Lands	NDOT will coordinate with BLM on the need for temporary access to the Late Night and Cottonwood Valley Trailheads during construction.
Contractors	3-43	Construction Noise	Construction noise impacts will be temporary. Mitigation measures for stationary and mobile equipment could be addressed in the contract documents as needed and could address placement, hours of operation, noise-level limits, or proper maintenance of equipment.

6. Coordination

Public involvement and agency coordination have been conducted throughout the EA development process. Activities have included an agency and public scoping period, public information meetings, a public hearing, and distribution of a range of outreach materials. The public involvement and agency coordination effort for the project was designed to be inclusive, comprehensive, and transparent. Input received was considered during alternative development and selection of the Selected Alternative.

The EA was approved for circulation on June 16, 2014, and a Location/Design Public Hearing was conducted on July 8, 2014, in Las Vegas. Eight comments were received at the July Location/Design Public Hearing and during the public comment period. A summary of the comments received and a response to the comments are provided in Table 2. Appendix A contains a transcript of the public hearing, which includes the public comments and project team responses made during the hearing, and a copy of the original comments submitted.

The handout for the July 8, 2014 public hearing on the EA stated Native American monitors will be present during the installation of fencing and construction. This inclusion was in error; Native American monitors are not required for this project.

Table 2. Comment and Responses

Comment Summary	Response
Is there any thought into what's going to happen with the burro situation during or after the project? In 1994 the fence line brought down the cattle guard put across, so now instead of the burros and horses crossing up further to the mountain, they are coming down and getting killed in front of my place.	We are going to perpetuate the existing condition. We'll have fencing along the corridor that will tie into the current cattle guard. So there will be no change with this project to that situation. My understanding is that the BLM has been doing burro and wild horse round-ups and relocations, that's what they're doing to address this issue; so there's nothing physically we are doing.
The project will have a severe impact on the Old Spanish Trail. The Old Spanish Trail Association wants mitigation for the damage that will occur in order to have not just a wider highway, but streetlights. We would like to have a picnic area that will accommodate one or two picnic tables and some very good jointly devised informational kiosks or signage somewhere in the vicinity of the top of the pass, or maybe down over the side that will educate people who come about the trail, about the history of the area, which is so significant in the development of Nevada. We would like to participate in designing the kiosks and in their placement.	The archaeological resources investigation conducted by NDOT staff thoroughly considered the potential resources within the 400-foot-wide SR 160 right-of-way, the area of potential effect for archaeological resources. As noted in Table 3-7 of the Environmental Assessment (EA), a segment of the Old Spanish Trail was identified within the SR 160 right-of-way. NDOT determined that the segment of the trail it identified would be eligible to the National Register of Historic Places. The State Historic Preservation Office (SHPO) agreed with NDOT's conclusion about the eligibility of the trail. Because the proposed SR 160 improvements would be moved farther away from the remnant of the Old Spanish Trail than the existing highway, NDOT concluded that the project would not affect the trail. The SHPO concurred with NDOT's finding of no impact on the trail. Given the finding of no impact, NDOT disagrees with the statement that the proposed SR 160 improvements within the existing right-of-way will have a severe impact on the Old Spanish Trail. It should be noted that a contributing reason for NDOT removing the proposed scenic overlook from the project was its proximity to the Old Spanish Trail. Because NDOT understands the importance of the trail, it will work with the land managing agencies adjacent to SR 160 to potentially include Old Spanish Trail interpretive elements to existing facilities. NDOT will coordinate with the Old Spanish Trail Association in developing potential interpretive items.

Table 2. Comment and Responses

Comment Summary	Response
Are all driveways, even those serving vacant lots, going to be improved as part of the project?	If there is an opening in the fence line for an access point, it will remain. If there is not, then we will not be putting one in. We will not be adding any driveways to parcels. Outside of this project, we have worked with the NDOT district office and their right-of-way staff, and they are going to be looking at this corridor and trying to clean up access issues. So if you want to have a driveway on SR 160, you need to have a permit with the state.
Are we going to have a raised median in Phase 1 of the project or just in Phase 2?	The median starts just east of Mt. Potosi Canyon Road, located in Phase 2.
The EA describes installation of desert tortoise fence and the use of NDOW's Gila Monster Status, Identification, and Reporting Protocol for Observations and satisfies Nevada Department of Wildlife's (NDOW's) concerns for these species. For unknown reasons, the direct coordinative effort we alluded to in our May 2010 correspondence did not transpire. Consequently, inter-agency coordination for large- bodied wildlife we envisioned is not reflected in the present EA. Although the proposed project design improves public safety, it further impedes the ability of wildlife to safely cross the roadway. NDOW has collected location data for determining movement and habitat use for two desert bighorn sheep that are relevant to the project area. These data, coupled with wildlife-vehicle collision records, suggest bighorn sheep and other species are not freely moving across SR 160 which evidently has become a formidable barrier over the past three decades. A mitigation measure listed in the EA is installation of a 3-strand smooth wire right-of-way fence. While this design facilitates movement of larger wildlife to and from the roadway and may be more appropriate for roadways with low traffic volumes, it is an insufficient solution for a high-volume traffic roadway such as SR 160. NDOW recommends installation of a wildlife crossing structure located approximately between mile marks 18.5 and 19.5, and another structure between mile marks 21.5 and 22.5 as part of the SR 160 widening project. These structures would benefit both public safety and wildlife movement connectivity for at least desert bighorn sheep, mule deer, and elk. Prior to finalization of the project EA, NDOW urges timely coordination and consultation with NDOT to discuss wildlife crossing mitigation options as part of the SR 160 Corridor Improvement Project.	Since discussing the project with NDOW staff at the July 8 public hearing, the agency's 2010 comments have been located and we understand your 2010 concerns and the concerns expressed in your July 24, 2014 letter about the proposed improvements potential impacts on wildlife movement across SR 160. As noted in the 2014 letter, NDOW is satisfied with the project's efforts to minimize impacts to the desert tortoise and Gila monster, but it continues to have concerns about potential impacts to Bighorn sheep, elk, and mule deer. As a result, NDOW has requested consideration of wildlife passages at the west end of the project to minimize the numbers of Bighorn sheep, elk and mule deer crossing SR 160. Directing wildlife to the passages, creating sufficiently large passages to accommodate the ungulates of concern while maintaining the proposed roadway design, providing the passages with adequate natural light, and minimizing new right-of-way acquisition will be some of the challenges to be addressed as our agencies coordinate on this issue. A mitigation measure has been added to include improvements to enhance wildlife connectivity and reduce vehicle/wildlife conflicts into the final design for the project. Because the mountainous portion of the project will not move toward final design and construction for a couple of years, NDOT and NDOW have time to coordinate on the wildlife passage issue. We will begin discussions on this matter as the project's Finding of No Significant Impact is developed and create a plan for moving forward.

Table 2. Comment and Responses

Comment Summary	Response
Missed the public meeting last night, but want to know where I can find the meeting materials and any additional information about the area, so I can comment. I have four parcels along the SR 160 and I want to know about any Right-of-Way that will be taken and if my properties will be impacted. I heard something about the Spanish Trail in relation to this project, as well, and I really enjoy that kind of information. I had no idea that the Spanish Trail was anywhere near here – do you have any more information about that? Also, can you give me some information about the project that everyone is talking about around Charleston and the I-15?	NDOT sent you several links to project information on both the SR160 as well as Project NEON, which is the project in the Charleston area of I-15. NDOT's goal is to move forward on SR160 without taking any additional Right-of-Way, but there may be a need for some Temporary Construction Easements, which would be addressed as we move closer to construction on this portion of the project.
What are the plans regarding Right-of-Way acquisitions, specifically on the east end of the Mountain Springs community and what, if anything, is NDOT planning to do to mitigate the impacts to the natural springs in this area?	NDOT would like to move forward without taking any additional Right-of-Way, but there may be a need for some Temporary Construction Easements, which would be addressed as we move closer to construction on this portion of the project. In regards to the natural springs, none of the springs identified during the bio-surveys (shown in the EA as Exhibit 3-2) will be impacted by the proposed project.
According to the preliminary EA a final decision has not been made on the final design of the intersection to the unofficial trailhead just east of Pinion Drive. The trailhead, which is used by hikers and equestrian users, provides the only sizable public parking area accessible to ordinary vehicles in the Mountain Springs area. The current design of this intersection are two unmarked turn offs leading to a dirt parking area. The west turn off is rather steep causing cars to bottom out that use it. The intersection is often missed by those coming from Las Vegas since it is not well marked. Also due to the current lack of more than 1 west bound lane, making the sharp right turn into the lot requires rapid deceleration of all traveling vehicles. I urge NDOT to improve this intersection by putting in a turning lane and proper signage.	The intersection to the unofficial trailhead just east of Pinion Drive is located in Phase 2 of the project which will not move toward final design and construction for a couple of years because of limited funding. During that time, NDOT will continue to evaluate the intersection type at this location and continue to coordinate with the Forest Service and Mountain Springs. At a minimum, the proposed 4-lane highway will reduce the conflicts between traffic turning into the parking area and faster moving through traffic. In addition, NDOT will improve the grade of the access point leading to the parking area when proposed highway improvements are constructed. If a high-T intersection is not constructed at the unofficial trailhead, eastbound and westbound traffic could still access the area by using the U-turns that are proposed on both ends of Mountain Springs.

7. Coordination Following the Close of the Public Comment Period

The EA was approved for circulation on June 16, 2014, and a Location/Design Public Hearing was conducted on July 8, 2014. The official comment period ended on July 25, 2014, however, NDOT continued to present information on the project, when requested, and answered questions from members of the public.

On August 12, 2014, NDOT presented information about the SR 160 project at the Red Rock Canyon National Conservation Area Visitor Center, hosted by the Bureau of Land Management (BLM). About 30 people were in attendance for the presentation and attendees included members of the public and BLM staff. The project team provided an overview of the project, similar to the presentation at the July 8, 2014 Public Hearing. Following the presentation there was a question and answer session that lasted about 45 minutes. Comments and questions from the audience included:

- Concern for burros on the highway, particularly near the cattle guard on the east end of the project, and impacts to other wildlife, specifically big horn sheep and elk

- Request to reduce the speed of traffic
- Coordination of aesthetics with BLM
- Safe access to trailheads
- Intersection configuration in Mountain Springs and at the SR 160/Avery Street intersection
- Height and type of streetlights at intersections
- Driveway permits
- Timing of project

Project team members provided their contact information and people were encouraged to contact NDOT if they had specific questions they wanted to discuss further.

On August 27, 2014, representatives from NDOT, NDOT's consultant team, FHWA, and the Nevada Department of Wildlife (NDOW) met at CA Group's Las Vegas Office to discuss NDOW's request during the EA public comment period to enhance wildlife connectivity and reduce vehicle/wildlife impacts through the mountainous portion of the project area. The key issues discussed during the meeting are noted below.

- NDOW has been monitoring the SR 160 area for over 30 years; there are Bighorn Sheep, deer and elk in the study area.
- NDOW indicated that it would be advantageous to coordinate any wildlife monitoring or mitigation effort with the Bureau of Land Management (BLM) and the US Forest Service (USFS).
- NDOT indicated that funding is always an issue and that it would be important to justify any wildlife monitoring or mitigation effort.
- Phase 2 (mountainous portion of the project) design and construction is several years away.
- It would be advantageous to collect additional wildlife migration data to assist in determining the need for, type of and location of any wildlife crossings.
- NDOT and NDOW agreed to work collaboratively with the USFS, BLM, and Mt. Springs residents to compile existing and collect additional data.

On August 27, 2014, representatives from NDOT, NDOT's consultant team, and BLM met to obtain input from the BLM and interpretive staff on general landscape and aesthetic concepts for the project and specific details for the Late Night Trailhead in Phase 1 of the project. This coordination will continue as needed through the design phase.

On September 10, 2014 the project team provided a project update at the Mountain Springs Citizens Advisory Council (CAC) monthly meeting. This was the third meeting to provide the CAC with project information with previous updates in August 2012 and April 2013. The project team reviewed the overall project improvements and discussed the speed limit, median locations and lighting plan in Mountain Springs. The CAC members confirmed their support for the proposed 45 mph speed limit through the community. They also expressed support for the lighting and median islands noting that those improvements have the potential to make a positive change in the character of Mountain Springs. The Council members were pleased with the proposed aesthetic improvements that NDOT is considering in Mountain Springs and would like to be part of the aesthetics development team when Phase 2 of the project is in final design. The CAC asked whether NDOT would consider lowering the speed limit through Mountain Springs to 45 mph now rather than after the Phase 2 construction.

8. FONSI Requirements

This FONSI is based on the EA, supplied materials, and the NDOT's Hearing Certification, which have been independently evaluated by the FHWA and determined to adequately and accurately discuss the need for, environmental issues concerning, and impacts of the proposed project. In addition to mitigation commitments described in the EA, a list of mitigation measures is part of this FONSI (see Table 1). These documents provide sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required. FHWA takes full responsibility for the accuracy, scope, and content of the EA and its attachments.

With respect to a FONSI, 23 CFR 771.111(f) requires evaluation of the following:

1. The project must connect logical termini and be of sufficient length to address environmental matters on a broad scope,
2. The project must have independent utility or independent significance, and
3. The project must not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Logical Termini

The proposed project tis located along 11 miles of SR 160 from the SR 160/159 intersection (east terminus) to a point 1.24 miles west of the Mountain Springs Summit (west terminus) in Clark County, Nevada. The study area is on the southwest edge of the Las Vegas metropolitan area roughly 15 miles southwest of downtown Las Vegas. SR 160 on both ends of the project area is a 4-lane highway.

Independent Utility

The project segment of SR 160 provides an important transportation link between southwest Las Vegas and Pahrump for local residents, people recreating in the Red Rock Canyon National Conservation Area and Spring Mountains National Recreation Area, and commercial traffic. As noted, the 11-mile-long project is one of 10 completed or planned NDOT SR 160 projects that are part of a multi-year SR 160 expansion program in Clark and Nye counties. As of 2014, of the SR 160 projects proposed between I-15 and Pahrump, only the section evaluated in this study and a section from the Nye County line to Pahrump have yet to be improved to address capacity and safety needs. SR 160 projects expanding the highway to four lanes (two in each direction) adjacent to this project have been completed, leaving the section under study the sole remaining two-lane section of SR 160 in Clark County. The Selected Alternative does not depend on the construction of the Nye County segment of SR 160 or other improvements to be usable and is a reasonable expenditure of public funds.

Other Transportation Projects

As proposed, the Selected Alternative would not prevent Clark County from implementing other transportation projects.

9. Statute of Limitations

FHWA may publish a notice in the *Federal Register,* pursuant to 23 United States Code 139(1), stating that one or more federal agencies have taken final action on permits, licenses, or approvals for this project. After the notice is published, claims seeking judicial review of those federal agency actions will be barred unless such claims are

filed within 150 days after the date of publication of the notice, or within a shorter time period as specified in the federal laws pursuant to which judicial review of the federal agency action is allowed.

10. Concluding Statement

This project is needed to improve the safety and travel efficiency in the SR 160 corridor from the SR 160/SR 159 intersection to a point 1.24 miles west of the Mountain Springs Summit along SR 160. FHWA has determined that there has been proper consideration of avoidance alternatives to environmentally sensitive areas. Where avoidance is not practical, proper mitigation has been provided for impacts resulting from the Selected Alternative.

11. Determination

FHWA has determined that the Selected Alternative, as presented in the EA and described above, would have no significant impact on the human environment. This FONSI is based on the attached EA dated June 16, 2014, which has been independently evaluated by FHWA and has been determined to adequately and accurately discuss the need for, environmental issues concerning, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an EIS is not required. FHWA takes full responsibility for the accuracy, scope, and content of the attached EA.

a.a. Abdalla

Abdelmoez Abdalla
Environmental Program Manager
Federal Highway Administration

10-8-14

Date

Iyad Alattar
Transportation Engineer
Federal Highway Administration

10/8/14

Date

Errata

for

SR 160 Corridor Improvement: SR 159 to Mountain Springs

Federal Aid Number: STP-0160(022)
NDOT Project Number: 73395
EA Document Number: FHWA-NV-EA-13.01

September 2014

This errata sheet will be appended to the June 16, 2014 approved Environmental Assessment. The items below are listed in the order they appear in the approved Environmental Assessment.

1. Page X, List of Mitigation Measures, Waters of the U.S., last sentence of the description should read as follows: "As noted in the December 2013 telephone memorandum in Appendix A, the USACE does not require mitigation for culvert extensions of the type proposed for this project because by maintaining existing drainage patterns, there is no impact to waters of the U.S."

2. Page XI, List of Mitigation Measures, a row should be added to the table for "Cultural Resources" with the following mitigation measures:

NRHP- Eligible Archaeological Properties

No ITS poles or streetlights will be within the viewshed of the two archaeological sites eligible under Criterion C.

Archaeological avoidance areas will be fenced off and no construction will be allowed within the avoidance areas. An archaeological monitor will be present during installation.

If an inadvertent archaeological discovery occurs, no further construction in the area of the discovery will proceed until the requirements of 36 CFR 800.13 and Nevada Revised Statues 383 have been satisfied, including consultation with SHPO and with Native American Tribes that may attach traditional cultural and religious significance to the discovered property.

Native American consultation will continue until the project is constructed.

NRHP-Eligible Architectural Properties

The project proposes streetlights be placed at certain intersections along SR 160. To minimize the impact, lighting will follow the recommendations of the International Dark-Sky Association. The lights will be LED fixtures with backlight-uplight-glare ratings that are equivalent to a full cut-off classification to help mitigate sky glow, light trespass and glare. The minimum number of lights will be used to achieve the required safety standards. If the Mountain Springs residents request it, NDOT will paint the streetlights green or brown to help the lights blend in with their surroundings.

Road widening will require the removal of about 100 trees in the Mountain Springs area. When tree removal thins the visual screen provided by the overstory, the trees will be replaced with two smaller trees. Any trees that are replanted will be irrigated, if needed, to ensure that they thrive.

No ITS poles will be installed within a half-mile radius of any historic architectural property. This will ensure that the ITS poles will not be visible from any NRHP property or property being treated as eligible.

3. Page 3-21, Section 3.7.3, last sentence of the paragraph should read as follows: "The USACE normally does not require mitigation for culvert extensions of the type proposed for this project because by maintaining existing drainage patterns, there is no impact to waters of the U.S. (see page A-44, Appendix A).

4. Page 3-35, Section 3.13.1, Table 3-7 (Prehistoric Architectural Properties within APE) is incorrectly titled. The table title should be "Prehistoric Archaeological Resources within the APE."

5. Page 3-36, Section 3.13.2, bullet 2 should read as follows: "Archaeological avoidance areas will be fenced off and no construction activities will be allowed within the avoidance areas. An archaeological monitor will be present during installation."

6. Page 3-36, Section 3.13.2 (Cultural Resource Impacts), the second paragraph under "Impacts to NRHP-Eligible Archaeological Properties" should read as follows: "As a result of NDOT's outreach to project stakeholders, including Native American Tribes, about the project and the archaeological resources identified within the study corridor, a number of concerns were raised about potential impacts on archaeological sites even though no sites will be directly affected. In response to those concerns, NDOT will impose the conditions described under Section 3.13.3 to further minimize the potential for indirect archaeological impacts."

The first paragraph under "Impacts to NRHP-Eligible Architectural Properties" should read as follows: "The Preferred Alternative would have no direct impacts to the NRHP eligible, or treated as eligible, buildings and historic district. To address the project's potential indirect visual, atmospheric, or audible elements on the NRHP-eligible properties within the project's APE, NDOT will impose the conditions described under Section 3.13.3.

7. Page 3-37, Section 3.13.3 (Mitigation Measures) should read as follows: "Although the Preferred Alternative would avoid direct impacts to archaeological and historic architectural resources, NDOT has developed the following commitments to address the potential for indirect effects:

NRHP- Eligible Archaeological Properties

- No ITS poles or streetlights will be within the viewshed of the two archaeological sites eligible under Criterion C (26CK241 and 26CK3373).
- Archaeological avoidance areas will be fenced off and no construction will be allowed within the avoidance areas. An archaeological monitor will be present during installation.
- If an inadvertent archaeological discovery occurs, no further construction in the area of the discovery will proceed until the requirements of 36 CFR 800.13 and Nevada Revised Statues 383 have been satisfied, including consultation with SHPO and with Native American Tribes that may attach traditional cultural and religious significance to the discovered property.
- Native American consultation will continue until the project is constructed.

NRHP-Eligible Architectural Properties

- The project proposes streetlights be placed at certain intersections along SR 160. To minimize the impact, lighting will follow the recommendations of the International Dark-Sky Association. The lights will be LED fixtures with backlight-uplight-glare ratings that are equivalent to a full cut-off classification to help mitigate sky glow, light trespass and glare. The minimum number of lights will be used to achieve the required safety standards. If the Mountain Springs residents request it, NDOT will paint the streetlights green or brown to help the lights blend in with their surroundings.
- Road widening will require the removal of about 100 trees in the Mountain Springs area. When tree removal thins the visual screen provided by the overstory, the trees will be replaced with two smaller trees. Any trees that are replanted will be irrigated, if needed, to ensure that they thrive.

- No ITS poles will be installed within a half-mile radius of any historic architectural property. This will ensure that the ITS poles will not be visible from any NRHP property or property being treated as eligible.

APPENDIX A

STATE OF NEVADA

DEPARTMENT OF WILDLIFE

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(775) 688-1500 • Fax (775) 688-1595

Brian Sandoval
Governor

TONY WASLEY
Director

RICHARD L. HASKINS, II
Deputy Director

PATRICK O. CATES
Deputy Director

July 21, 2014

NDOW-SR#:15-001

Steve M. Cooke, P.E., Chief
Environmental Services Division
Nevada Department of Transportation
1263 South Stewart Street
Carson City, NV 89712

Re: Environmental Assessment for SR 160 Corridor Improvement Project: SR 159 to Mountain Springs (EA)

Dear Mr. Cooke:

The Nevada Department of Wildlife (NDOW) recognizes the importance of the Nevada Department of Transportation (NDOT) enhancing public safety on Nevada's roadways and welcomes this opportunity to comment on the present EA relative to wildlife resources. We understand improvements to SR 160 will widen the existing alignment to 4 lanes with features to enhance public safety while accommodating increased traffic volume. The project segment of SR 160 is from its intersection with SR 159 to a point 1.24 miles west of the community of Mountain Springs.

The recent public meeting on July 8th was, we believe, the third public meeting held since 2010 related to the NEPA process. NDOW responded to Nevada State Clearinghouse's E2010-184 announcement for the SR 160 widening project on May 25, 2010. Nevada State Clearinghouse forwarded our comments to NDOT. In that response we indicated our wishes to work directly with NDOT to discuss in more detail our concerns at least regarding three species of sensitive wildlife, desert tortoise, Gila monster and desert bighorn sheep. The EA describes installation of desert tortoise fence and the use of NDOW's *Gila Monster Status, Identification, and Reporting Protocol for Observations*[1] and satisfies our concerns for these species. Impact avoidance and minimization measures for migratory birds during the construction phase are appreciated. We thank NDOT for these measures becoming standard best management practices over the years to highway projects in southern Nevada. We also anticipate culvert structures will assist in optimizing safe highway crossing for small to medium-sized wildlife. For unknown reasons, the direct coordinative effort we alluded to in our May 2010 correspondence did not transpire. Consequently, and in deference to statements in section 3.16.1 (bottom of page 3-42), inter-agency coordination for large-bodied wildlife we envisioned is not reflected in the present EA.

Germane to public safety, it is important that highway design within a wildlife movement area include wildlife crossing mitigation measures. Design considerations for natural movements of desert bighorn sheep, mule deer, elk, and other wildlife across the upper portion of SR 160 were largely overlooked in past projects and the present EA. Although the proposed project design improves public safety by increasing the number of lanes for accommodating greater traffic volumes, widening shoulders for accident avoidance, and including curve features so speed reduction is unnecessary, it further impedes the ability of wildlife to safely cross the roadway. A mitigation measure listed in the EA is installation of a 3-

[1] Gila monster protocols were updated in 2012 with revised contact information; citations on EA page 3-29 should reflect the new date. Updated protocols are available online at: http://www.ndow.org/Education/Publications/.

strand smooth wire right-of-way fence. While this design facilitates movement of larger wildlife to and from the roadway and may be more appropriate for roadways with low traffic volumes, it is an insufficient solution for a high-volume traffic roadway such as SR 160 of which the local media recently described as the "widow maker."

The consequence of reducing movement pathways is isolation and reduction in the long term viability of local wildlife populations (Epps *et al.* 2005, Sawyer *et al.* 2013). The reasons why wildlife may avoid roads can be generally linked to road attributes, e.g. traffic volume, road width, or major habitat alterations caused by the road (Clevenger and Huijser 2011). NDOW has collected location data for determining movement and habitat use for two desert bighorn sheep that are relevant to the project area (Figure 1)[2]. These data coupled with wildlife-vehicle collision records (Table 1), suggest bighorn sheep and other species are not freely moving across SR 160 which evidently has become a formidable barrier over the past three decades.

Table 1. NDOW records for wildlife-vehicle collision mortality on SR 160. Records do not reflect a systematic methodology to attain census of all wildlife-vehicle collisions; data were collected as it presented itself. For spatial arrangement of mileposts, refer to Figure 1.

Location	Time Frame	Milepost #	# Mortalities by Species
Mountain Springs Summit Locale	1984-1998	16.00 to 20.00	5 Desert Bighorn Sheep
Mountain Springs Summit Locale	2006-2011	19.00	4 Desert Bighorn Sheep
Mountain Springs Summit Locale	2006-2011	18.00 to 26.00	48 Mule Deer
Mountain Springs Summit Locale	2006-2011	21.50 to 23.00	9 Elk

Based on information derived from GPS data and wildlife-vehicle collisions, NDOW recommends installation of a wildlife crossing structure located approximately between mile marks 18.5 and 19.5, and another structure between mile marks 21.5 and 22.5 as part of the present SR 160 widening project (Figure 1). These structures would benefit both public safety and wildlife movement connectivity for at least desert bighorn sheep, mule deer, and elk. The benefits include but are not limited to reduced economic impacts related to emergency responses resulting from wildlife-vehicle collisions and the repair of damaged property. These wildlife crossing structures would also effectively provide two locations of uninhibited movements by wild ungulates across SR 160 as mitigation of the added, future impacts associated with the widening and straightening of SR 160.

Prior to finalization of the project EA, NDOW urges timely coordination and consultation with NDOT to discuss wildlife crossing mitigation options as part of the SR 160 Corridor Improvement Project. For additional assistance, please contact me at your earliest convenience. Thank you for this review and input opportunity.

Sincerely,

D. Bradford Hardenbrook
Supervisory Habitat Biologist
Southern Region, Nevada Department of Wildlife
4747 Vegas Drive, Las Vegas, NV 89108
702.486.5127. x3600; 702.486.5133 FAX
bhrdnbrk@ndow.org

[2] Home range based on 349 locations for a ram and 479 locations of a ewe desert bighorn sheep. Details of how the home range illustrated was constructed can be provided on request.

AJM/DBH

cc: BLM Southern Nevada District Office
NDOW, Files
USFS Spring Mountains NRA

References:

Clevenger, A.P. and Huijser, M.P. (2011). *Wildlife Crossing Structure Handbook: Design and Evaluation in North America.* Report to Federal Highway Administration: Publication No. FHWA-CFL/TD-11-003. Western Transportation Institute, Bozeman, Montana.

Epps, C.W., Palsbøll, P.J, Wehausen, J.D., Roderick, G.K., Ramey R.R., and McCullough, D.R., (2005). *Highways block gene flow and cause a rapid decline in genetic diversity of desert bighorn sheep.* Ecology Letters. 8:1029–1038

Sawyer, H., Matthew J. K., Middleton A. D., Morrison, T. A., Nielson, R. M., and Wyckoff T. B., (2013). *A framework for understanding semi-permeable barrier effects on migratory ungulates.* Journal of Applied Ecology. 50:68–78

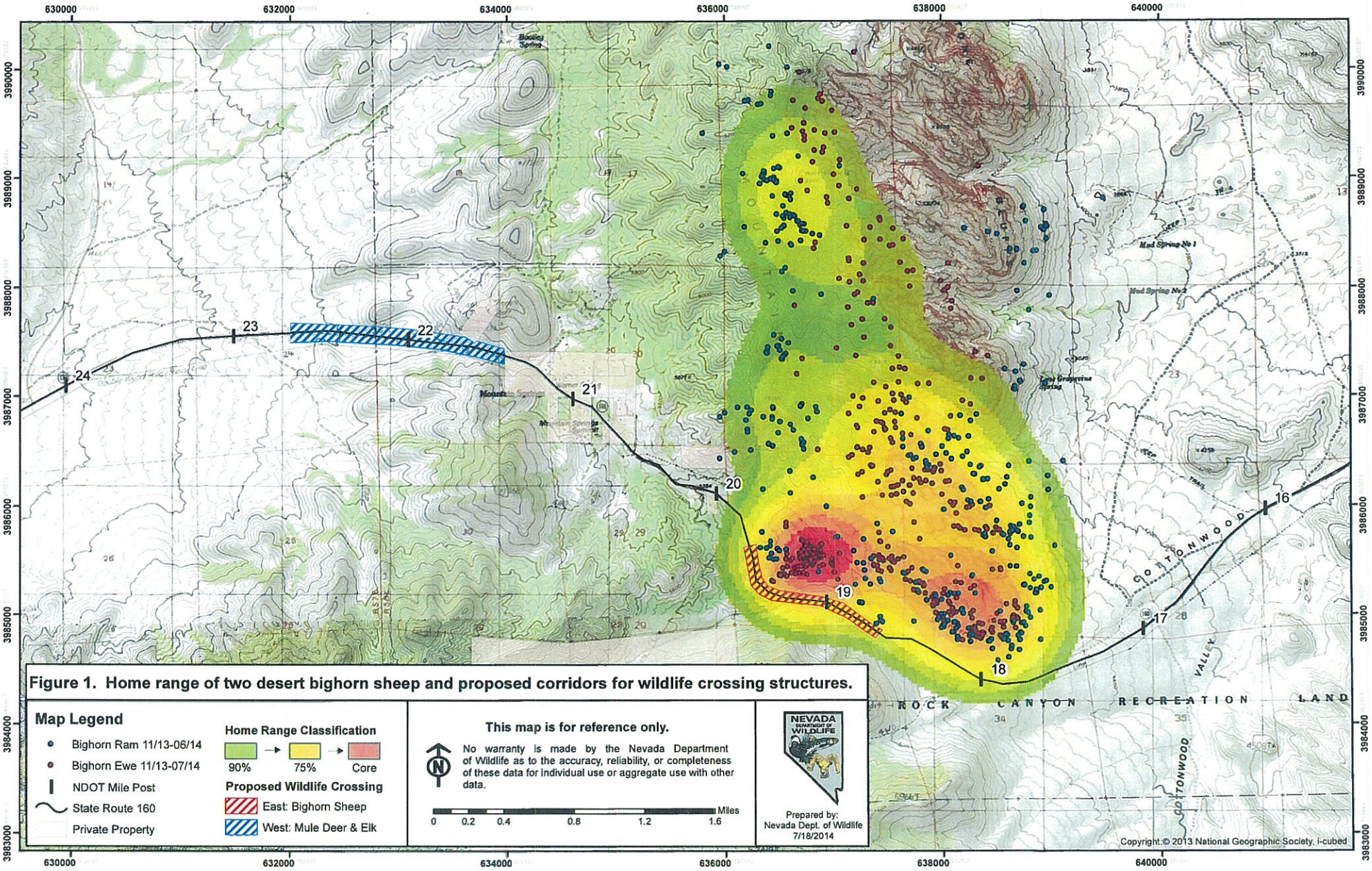

Figure 1. Home range of two desert bighorn sheep and proposed corridors for wildlife crossing structures.

Map Legend

- Bighorn Ram 11/13-06/14
- Bighorn Ewe 11/13-07/14
- NDOT Mile Post
- State Route 160
- Private Property

Home Range Classification

90% → 75% → Core

Proposed Wildlife Crossing

- East: Bighorn Sheep
- West: Mule Deer & Elk

This map is for reference only.

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

0 0.2 0.4 0.8 1.2 1.6 Miles

NEVADA DEPARTMENT OF WILDLIFE

Prepared by:
Nevada Dept. of Wildlife
7/18/2014

Marian Meyers: received 7/9/2014, 1:00 PM ~ Missed the public meeting last night, but want to know where I can find the meeting materials and any additional information about the area, so I can comment. I have four parcels along the SR 160 and I want to know about any Right-of-Way that will be taken and if my properties will be impacted. I heard something about the Spanish Trail in relation to this project, as well, and I really enjoy that kind of information. I had no idea that the Spanish Trail was anywhere near here – do you have any more information about that? Also, can you give me some information about the project that everyone is talking about around Charleston and the I-15? My email address is mmeyers1963@aol.com

Will Harris & Katherine Michaud: received 6/30/2014, 1:25 PM ~ What are the plans regarding Right-of-Way acquisitions, specifically on the east end of the Mountain Springs community and what, if anything, is NDOT planning to do to mitigate the impacts to the natural springs in this area?

Subject: SR160 improvements in mountain springs

To whom it may concern,

I am writing in regards to the proposed improvements to SR160 in Mountain Springs. According to the preliminary EA a final decision has not been made on the final design of the intersection to the unofficial trailhead just east of Pinion drive. Currently this trailhead is used by hikers to access several popular trails and equestrian users. It provides the only sizable public parking area accessible to ordinary vehicles in the Mountain Springs urban area. Access to this area is important to recreationalists, especially during the summer months, as it is higher elevation and a cooler climate. Alternative high elevation recreation areas require travel on unpaved roads or much longer drives to the main Mt. Charleston area, especially for those living in the southern Vegas Valley.

The current design of this intersection are two unmarked turn offs leading to a dirt parking area. The west turn off is rather steep causing cars to bottom out that use it. The intersection is often missed by those coming from Las Vegas since it is not well marked that there is a turn there. Also due to the current lack of more than 1 west bound lane, making the sharp right turn into the lot requires rapid deceleration of all traveling vehicles.

I would urge NDOT to improve this intersection by putting in a turning lane and proper signage indicating a turn off.

Thank you,

Paul Cuni

Co-Organizer of VegasHikers

Co-Organizer of the Henderson Hiking group