NEVADA DOT
SAFE AND CONNECTED

2022-2023 Wildlife Crossing Pilot Program

Coyote Springs Tortoise Crossings

AUGUST 01, 2023

contents

one

two

three

four

five

contents

list of appendices

All appendices are available on www.dot.nv.gov/coyotespringstortoisecrossings.

one

Basic Project Information

1.1 PROJECT DESCRIPTION

The Nevada Department of Transportation (NDOT) is applying for the Wildlife Crossings Pilot Program (WCPP) grant to assist with funding for the Coyote Springs Tortoise Crossings project in rural Clark and Lincoln Counties, Nevada. The Coyote Springs Tortoise Crossings project is located along United State Route 93 (US 93) from milepost 75.24 in Clark County to milepost 23 in Lincoln County, a distance of approximately 34 miles (see map on page 2). The project would construct 61 wildlife crossings and 68 total miles of tortoise barrier fencing within critical habitat conservation areas essential to the recovery of the federally protected Mojave desert tortoise.

The Mojave desert tortoise, *Gopherus agassizi*, was listed by the United States Fish and Wildlife Service (USFWS) as a threatened species under the Endangered Species Act of 1973 (as amended) in 1990. The Mojave desert tortoise population (north and west of the Colorado River) has declined for decades due to various factors, including habitat loss and fragmentation, disease, and predation.

In 1994, the USFWS designated habitat critical to the survival and recovery of the desert tortoise in Nevada, California, Utah, and Arizona. Critical habitat is defined as specific areas supporting physical and biological features essential to the conservation of the species.

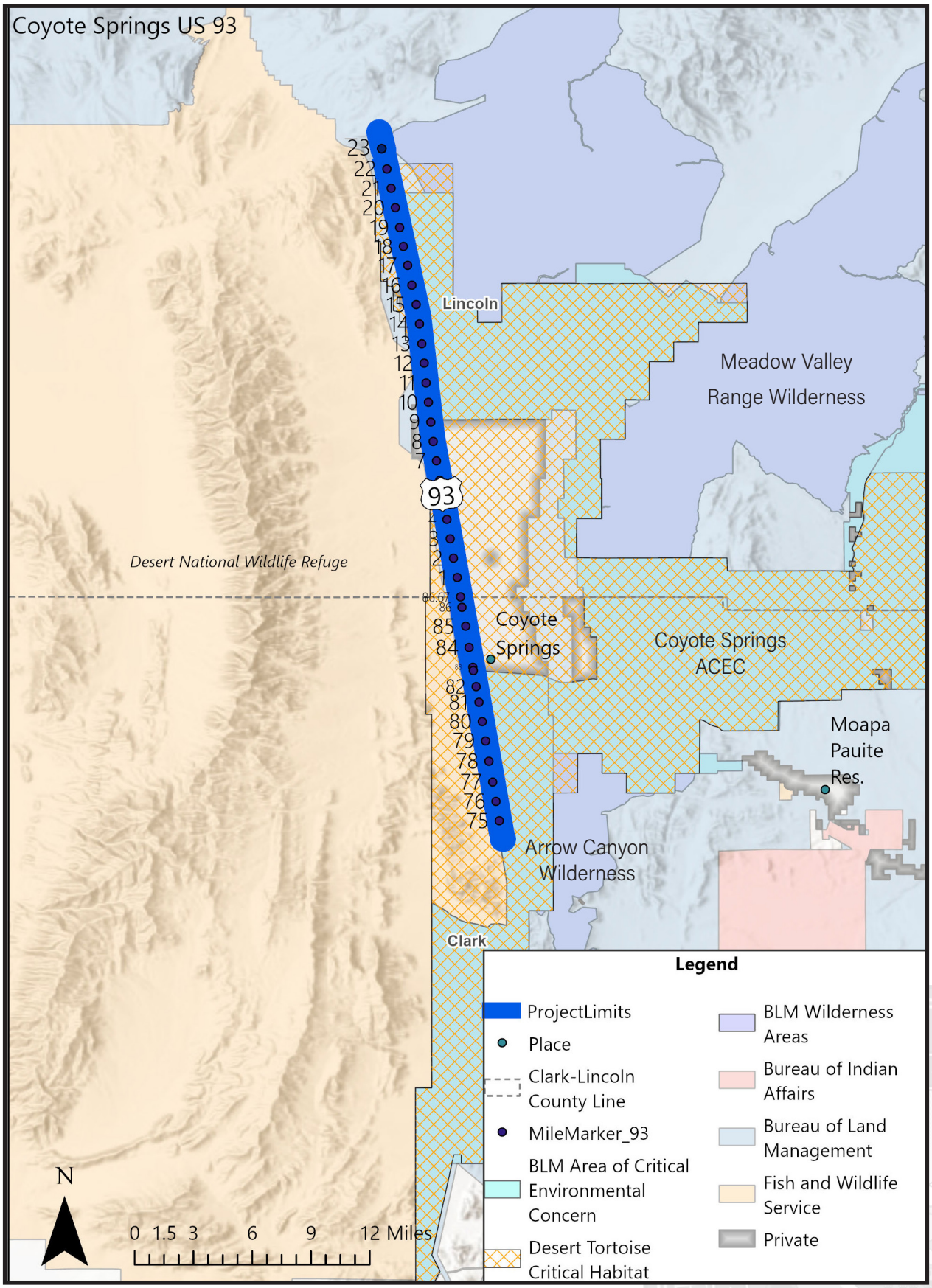
Mojave desert tortoise.

Desert tortoises occupy a variety of habitats, from flats and slopes dominated by creosote brush scrub to rocky slopes in blackbrush and Joshua tree woodlands. Throughout most of the Mojave Desert, tortoises commonly occur on sloping terrain with loamy soils and sparse cover of low-growing shrubs. Most threats to desert tortoises or their habitat are associated with human impacts and climate change.

Recovery of the desert tortoise is complicated by this species' naturally low reproductive rate, high juvenile mortality rate, and thus low adult recruitment rate. Due to their reproductive strategy and the high mortality rates of young tortoises, high adult tortoise survival rates are critical to recover the population and contribute to species survival. However, paved highways further negatively impact desert tortoise populations and habitats as they cause fragmentation and introduce higher potential for road mortality. The Desert Tortoise Final Revised Recovery Plan states tortoise crossings and barrier fencing should be installed and maintained along highways in desert tortoise habitats to avoid population fragmentation and tortoise mortality.

Final Highway Section

The Coyote Springs Tortoise Crossings project is the last section of highway through USFWS designated critical habitat for the desert tortoise in Nevada to remain unfenced.


Coyote Springs US 93
Lincoln
Meadow Valley
Range Wilderness
93
Desert National Wildlife Refuge
Coyote
Springs
Coyote Springs
ACEC
Moapa
Pauite
Res.
Arrow Canyon
Wilderness
Clark
Legend
ProjectLimits
Place
Clark-Lincoln
County Line
MileMarker_93
BLM Area of Critical
Environmental
Concern
Desert Tortoise
Critical Habitat
BLM Wilderness
Areas
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Affairs
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Management
Fish and Wildlife
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N
0 1.5 3 6 9 12 Miles

1990

The Mojave desert tortoise is listed as threatened under the Endangered Species Act of 1973.

1994

Critical habitat for the Mojave desert tortoise is designated.

1995

Clark County entered into contract with Enviroplus Consulting to determine effective, economically feasible road barriers to decrease tortoise mortality.

1996

Clark County entered into contract with the Nevada Division of Forestry and NDOT to conduct the road barrier project field-testing phase.

1999

DCP Road Barrier Construction Program initiated.

2000

Clark County completed their Multiple Species Habitat Conservation Plan.

2010

Southeastern Lincoln County Habitat Conservation Plan completed

2010

Tortoise barrier fencing installed along the southern portion of US 93 that passes through the designated Mojave desert tortoise critical habitat.

2019

The Management Oversight Group identified a list of top-priority barrier fence installation projects.

1.2 PROJECT HISTORY

As part of the initial long-term Nevada Desert Conservation Program (DCP) goals, Clark County placed a high priority on installing barriers to protect Mojave desert tortoises and other wildlife. Highway and road barrier fencing were then listed as a condition to Clark County's Multiple Species Habitat Conservation Plan (MSHCP) associated 10(a)1(B) Incidental Take Permit.

In 1995, a study to determine effective and economically feasible road barriers to decrease tortoise mortality along roadways was conducted. The associated field testing of the barriers began in 1996.

The Southeastern Lincoln County Habitat Conservation Plan (SLCHCP) (which includes include tortoise exclusion fencing and habitat restoration) was approved in January 2010 and covers a portion of the project area in Lincoln County.

In approximately 2010, tortoise barrier fencing was installed along the southern portion of US 93 that passes through designated Mojave desert tortoise critical habitat. Installation of barrier fence was followed by effectiveness monitoring, which found that fencing reduces tortoise road mortality when adequately maintained and facilitates connectivity through stormwater culverts, such that approximately 50% of adult tortoises that enter a culvert use it to cross underneath the road (USFWS unpublished data). These results prompted the development of a barrier fence installation prioritization index for the entire four-state range of the Mojave desert tortoise. Prioritization index rankings were then used

by the Desert Tortoise Management Oversight Group (MOG) to identify a list of top priority future barrier fence installation projects, which includes the northern portion of US 93 that passes through unfenced designated tortoise critical habitat.

Dual-purpose drainage structure and tortoise crossing, with tortoise fencing along US 93.

1.3 SAFETY

Each year in Nevada, vehicle collisions with wild and domestic/feral animals result in more than 500 reported crashes, costing the public over $19 million and killing an estimated 5,032 animals. Research estimates that more than 50% of such collisions can go unreported to authorities, pointing to a potentially higher number of animal-related incidents. Though vehicle collisions with small animals may not pose significant risks to human safety, near-accidents and attempts to avoid hitting small animals pose risks not considered in general vehicle-wildlife interactions.

Vehicle-Wildlife Interactions

The importance of vehicle-wildlife interaction is typically defined in terms of danger to human safety and property damage potential. This has resulted in a preoccupation with large animal vehicle-wildlife interaction minimization and avoidance and an underappreciation for the impacts associated with small animal vehicle-wildlife interactions.

Nevertheless, according to Subsection 7(a)(1) of the Endangered Species Act of 1973, "Federal agencies are required, in a reiteration of Congress' policy, to promote the conservation of endangered and threatened species." Based on this statute, the Federal Highway Administration (FHWA) is responsible for the conservation of and avoiding impacts to listed species, regardless of whether human safety and expense are a factor. Furthermore, tortoise populations are not expected to achieve a stable population expansion rate in the presence of unfenced roads (Peaden 2017). Stabilizing population expansion rates is a quintessential first step toward Mojave desert tortoise recovery and conservation. Desert tortoise fencing and crossings projects should be a top priority for FHWA in areas of designated critical habitat.

1.3.1 Carcass Counts

Counting the number and mapping the location of tortoise carcasses associated with a road segment is a necessary first step in assessing mortality related to tortoise-vehicle interactions. However, such counts and mapping exercises will likely miss the high number of tortoise carcasses moved by scavengers (scavenged), which can be substantial due to the harsh realities that predators face.

In statistical terms, the concept of what proportion of the target items are observed is called detection probability, and can be used to correct imperfect detection. For example, under controlled conditions, juvenile tortoise carcasses were scavenged on average 1.05 days after placement (95% CI 0.79 and 4.99 days, USFWS unpublished data). Consequently, a return interval of approximately 12 hours is necessary to census tortoise carcasses, and a return interval of once per week could miss as much as 86% of potential tortoise carcasses.

Tortoise carcass on Southern Nevada roadway.

Given the lack of formal surveys for tortoise road mortality, carcasses, and the dangers associated with documenting such, it is the USFWS' opinion that each mile of road is, at best, surveyed once monthly, meaning that at best approximately 3.2% of all tortoise road mortalities are encountered and documented. Assuming accuracy, a correction factor of approximately 97% can be applied to tortoise carcass observation rates. In other words, if ten tortoise carcasses are found over a number of years, then approximately 312.5 tortoise carcasses resulted from road mortality.

NDOT collected data from 2005 to 2023 and recorded five tortoise carcasses in the project area. Based on the statistical analysis described above, it is estimated that there have been 156 road mortalities of tortoises in the last 18 years in the project area, approximately 8.68 tortoises per year (or 0.25 tortoise per mile or 0.15 tortoise per kilometer).

It can be assumed this is a conservative estimate relative to the tortoise mortalities per year of 2.4 per kilometer, as reported by Boarman and Sazaki (1996) (see Appendix 4).

1.4 INVESTMENT CONTEXT

Typically, tortoise exclusion fencing and crossings are installed as a part of a highway improvement project. NDOT does not currently have additional infrastructure improvements planned within the project area.

Stand-alone Project

The Coyote Springs Tortoise Crossings project would be a stand-alone fencing and crossings project with no associated highway improvements.

1.5 URBAN/RURAL

The project is located in a rural area as defined by 23 USC 101(a)(25). The project is not located within any of the four federally designated community development zones.

1.6 PROJECT PARTIES

NDOT is responsible for the planning, construction, and maintenance of more than 5,400 miles of highway and more than 1,000 bridges in Nevada. This responsibility is distributed across three individual Districts that manage maintenance and operations. NDOT will be the award recipient responsible for administering and delivering the project. NDOT has extensive experience with the receipt and expenditure of Federal transportation funds, with an annual budget of $800 million, of which an average of $400 million is from Federal sources. NDOT also has experience managing, overseeing, and reporting on discretionary grant funding (e.g. the Pyramid Highway Phase 1 BUILD Grant).

This project is located within NDOT District 1, which covers the entirety of southern Nevada, including Clark and Lincoln Counties. The Bureau of Land Management (BLM), USFWS, Clark County, and Lincoln County have been active in developing this grant application and this project.

As part of an ongoing effort to provide safe roadways, NDOT has partnered with FHWA, USFWS, and the Nevada Department of Wildlife (NDOW) to install wildlife safety crossings. Numerous agencies and partners are working to install additional crossings in areas shown by research to have high vehicle-animal collision rates.

two

Budget Narrative

NDOT staff developed planning level project cost estimates that include NEPA and design, construction, and post-construction activities. This detailed estimate provides certainty in determining the need for both federal and state/local matching funds. No right-of-way costs are anticipated as part of the project since all work will be done within State-owned US 93 right-of-way. Equipment costs are considered part of the construction costs since the project will be placed out for bid per Nevada Revised Statutes. NDOT developed these costs based on the most recently available awarded contract costs with similar work elements, standard NDOT percentages, and typical costs for activities such as NEPA and design and post-construction monitoring. Table 1 provides the anticipated cost breakout by activities and allowable costs. No ineligible costs are anticipated.

Table 1. *Anticipated Project Costs*

Cost Classification	Total Cost	Non-Allowable Cost	Total Allowable Cost
Administrative and Legal	$50,000	-	$50,000
Land, Structures, Rights-of-Way, & Appraisals	-	-	-
Relocation Expenses & Payments	-	-	-
Architectural & Engineering Fees	$450,000	-	$450,000
Other Architectural & Engineering Fees	$500	-	$500
Project Inspection Fees	$2,326,200	-	$2,326,200
Site Work	$24,090	-	$24,090
Demolition & Removal	$163,800	-	$163,800
Construction	$14,157,113	-	$14,157,113
Equipment	-	-	-
Miscellaneous[2]	$225,000	-	$225,000
Subtotal	-	-	-
Contingencies	$763,589	-	$763,589
Subtotal	-	-	-
Project (Program) Income	-	-	-
Total Project Costs	**$18,160,292**	**-**	**$18,160,292**
Federal Funding			
Federal Assistance	94.89%[1]	$23,883,916 x 0.9489	$17,232,301

1 – Federal assistance per FHWA notice N 4540.12, March 12, 1992 – Sliding Scale Rates of Federal-aid Participation in Public Lands States Rates for Projects not on Interstate System (80% Federal/20% State)

2- Post-construction monitoring and public outreach

2.1 FEDERAL FUNDS

NDOT developed a detailed funding scenario utilizing a combination of WCCP Grant funds, State funds, local funds from Clark and Lincoln Counties, and private funding to finance the proposed project while meeting matching fund requirements fully. While the NOFO does state 20% local match is required, under 23 U.S.C. 120(a) and (b), the State of Nevada is authorized an upward adjustment based on a higher ratio of designated public lands area. Based on FHWA Notice N 4540.12, Table 1 from March 12, 1992, for an 80% Federal/20% State match NDOT is only required to provide a 5.11% match with 94.89% Federal funds. NDOT is requesting a WCCP grant in the amount of $16,835,292 and other Federal funds of $200,000 and will provide a 7.3% matching amount of $1,325,000 for a total project budget of $18,160,292. The BLM will contribute the $200,000 of other Federal funds for post-construction monitoring activities, which will last three years after construction. These BLM funds will come from Section 7 Mitigation Fees. State funding of $1 million will come from the Nevada State Highway Fund, $200,000 from Clark County's Section 7 Mitigation Fees, and $75,000 from Lincoln County's Section 10 funds. In addition to public funding, the Coyote Springs development will provide private funds of $50,000 for construction activities, which may be in-kind construction activities.

Table 2. *Summary of Federal and Match Funding*

	Federal Funds				Matching Funds		
Activity	WCCP Grant	Other Grant Awards	Federal Formula Funds	Other Federal Funds	State	Local	Other
NEPA & Design	$0	$0	$0	$0	$500,000[1]	$0	$0
Construction	$16,260,292	$0	$0	$0	$500,000[1]	$250,000[2&5]	$50,000[4]
Post-Construction Monitoring	$0	$0	$0	$200,000[3]	$0	$25,000[2]	$0
Funding Totals	$16,260,292	$0	$0	$200,000	$1,000,000	$275,000	$50,000
% of Overall Funding	**$16,835,292 (92.7%)**				**$1,325,000 (7.3%)**		

1 – Nevada State Highway Fund

2 – Clark County Section 7 Mitigation Fees

3 – Bureau of Land Management Section 7 Mitigation Fees

4 – Coyote Springs private contribution or in-kind construction activities

5 - Lincoln County Section 10 Funds

2.2 DETAILED BUDGET

Table 3 provides a summary of the anticipated project component-specific funding. NDOT will utilize $200,000 in Federal funding from BLM for three years of post-construction monitoring. The only other potential federal funding would be from this WCCP Grant. Nevada State Highway funds will be utilized to fully fund the NEPA, Preliminary Design, and Administration/ Legal, which are projected to be $500,000. Construction activities would be funded by Nevada State Highway funds ($500,000), private funding, in-kind services, by the Coyote Springs development group ($50,000), Clark County Section 7 Mitigation Fees ($175,000), and Lincoln County Section 10 funds ($75,000). The proposed WCCP grant funds of $16,835,292 would cover the remaining required funding. Following construction, the project would enter a three-year post-construction monitoring program. For this component, $25,000 would become available from Clark County Section 7 Mitigation Fees (local matching funds) and $200,000 from BLM Section 7 Mitigation Fees (other Federal funds), resulting in an additional $225,000.

Table 3. *Summary of Project Component Funding*

	Anticipated Dates	Non-Federal (Matching Funds)	WCPP Grant	Other Federal Funds
NEPA & Design/Admin & Legal	Dec 2023 to Dec 2024	$500,000[1] (2.8%)	$0	$0
Construction	Jan 2025 to Dec 2025	$800,000[1,4,&5] (4.4%)	$16,635,292 (91.6%)	$0
Post-Construction Monitoring	Jan 2026 to Dec 2029	$25,000[2] (0.1%)	$0	$200,000[3] (1.1%)
Total Funding Value	-	**$1,325,000**	**$16,260,292**	**$200,000**
% of Overall Funding	-	**7.3%**	**91.6%**	**1.1%**

1 – Nevada State Highway Fund

2 – Clark County Section 7 Mitigation Fees

3 – Bureau of Land Management Section 7 Mitigation Fees

4 – Coyote Springs private contribution or in-kind construction activities

5 - Lincoln County Section 10 Funds

2.3 GRANT FUNDS AND SOURCES/ USES OF PROJECT FUNDS

Table 1 provides a breakdown of the project costs outlined in Standard Form 424. The following is a brief description of each element identified:

- **Administrative and Legal.** Element components include general project administration such as agreement services, financial management, and legal support for construction contracts and other interlocal agreements.
- **Land, Structures, Rights-of-Way, Appraisals, and Relocation Expenses and Payments.** No right-of-way acquisitions or relocations are planned as part of the proposed project.
- **Architectural and Engineering Fees.** Element components include preparing environmental studies and documentation to obtain NEPA clearance and the preliminary and final design services to provide final construction contract documents.
- **Other Architectural and Engineering Fees.** Primary component of the item would be conducting a partnering workshop with resource agencies and major project stakeholders.
- **Project Inspection Fees.** Work associated with this element includes construction engineering inspection and materials testing to ensure the contractor meets the construction contract and permitting requirements. This work also includes biological monitors during construction.
- **Site Work.** This element would include dust control and providing Best Management Practices (BMPs) for construction stormwater. These elements would be early action activities and go throughout project completion.
- **Demolition and Removal.** Components of this work include clearing and grubbing, along with the removal of existing right-of-way fencing.
- **Construction.** Components of this element will include new construction activities, including new fencing, revegetation, cactus salvaging, and treatment of culvert inlets and outlets to allow for safe tortoise passage. In addition, traffic control and mobilization activities are included in this cost element.
- **Equipment.** No specific equipment costs are identified. Equipment costs would be part of the construction costs since the project will be an open public bid utilizing contract-specific bid items.
- **Miscellaneous.** These costs include post-construction monitoring and public outreach. Post-construction monitoring will occur for three years after construction to determine the effectiveness of the project and develop lessons learned. Public outreach will occur during design, through construction, and during the post-construction monitoring phase to educate the public on the project, the project's goals, and highlight that the project funding came from multiple sources, with a significant portion from the WCCP Grant.

Table 4 summarizes funding sources (including the requested WCCP Grant funds) for the significant project delivery items, funding amounts, percentage of funding amounts, and non-federal funding matches. All funds outside the WCCP grant funds will be available and committed based on those timelines identified in Table 3 (See Appendix 2 for commitment letters).

Table 4. *Summary of Funding Sources for Major Project Delivery Items*

Funding Source	Total Proposed Funding	Percentage of Overall Costs
NDOT	$1,000,000	5.5%
Clark County	$200,000	1.1%
Lincoln County	$75,000	0.4%
Private	$50,000	0.3%
Total Match Funding	**$1,700,000**	**7.3% (5.11% min)**
BLM	$200,000	1.1%
WCCP Grant	$16,260,292	91.6%
Total Project Cost	**$18,160,292**	

three

Project Merit Criteria

3.1 PRIMARY MERIT CRITERIA

3.1.1 Criterion 1.1 Reduction of Wildlife Vehicle Collisions

The Coyote Springs Tortoise Crossings project would significantly reduce vehicle collisions with Mojave desert tortoises (*Gopherus agassizii*) in southern Nevada. This 34-mile segment of US 93 is the last remaining segment bisecting the critical habitat in Nevada to remain unfenced and without protected crossings. A significant threat this tortoise population faces is mortality due to vehicle collisions.

US 93 is an existing two-lane (one lane in each direction) rural highway beginning at I-15 and heading north. In 2022, the Average Annual Daily Traffic (AADT) was between 2,050 and 2,600 vehicles per day. No transportation improvements are planned for this segment of US 93 in the near future. The Coyote Springs Tortoise Crossings project is a stand-alone project with no associated highway improvements.

The Coyote Springs Desert Wildlife Management Area (DWMA) is comprised of the Desert National Wildlife Refuge, Coyote Springs Investment Group (private development), and Coyote Springs Area of Critical Environmental Concern (ACEC) and is almost entirely suitable habitat for the desert tortoise. The Coyote Springs Investment Group is a planned development of 40,000 acres adjacent to US 93 and north of SR 168. This privately owned land is surrounded by BLM ACEC and Wilderness Areas. While Coyote Springs Investment Group has planned development for over two decades, the only infrastructure is a golf course that opened in 2008. However, residential development has yet to occur. The golf course has no shortage of visitors, with over 30,000 rounds of golf played in 2021. If the development of the Coyote Springs Master Planned Community proceeds, the Coyote Springs Tortoise Crossings project will be even more critical because it will provide protection and connectivity for the desert tortoises on either side of the development (thus ensuring that the valley's population remains healthy) and for tortoises moving away from the development (tortoises whose home ranges have been impacted and are seeking new home ranges will be more likely to attempt crossing the highway).

Currently, tortoise barrier fencing extends along US 93 from I-15 to the southern limit of this project at MP 75.24 in Clark County.

US 93 at MP 75.

Desert tortoises, other small animals (including coyotes, kit foxes, gray foxes, badgers, ringtails, bobcats, skunks, kangaroo rats, kangaroo mice, pocket mice, pack rats, and ground squirrels), reptiles (such as lizards and snakes), and arthropods (scorpions and tarantulas) are documented in this segment and are anticipated to begin using the crossings within three months to a year after construction. However, the tortoise barrier fencing is immediately effective. Effectiveness monitoring conducted by USFWS in 2010 for the southern segment of US 93 suggests that the fence eliminates tortoise road mortality when adequately maintained and facilitates connectivity through stormwater culverts, such

that approximately 50% of adult tortoises that enter a culvert use it to cross underneath the road (USFWS unpublished data).

Long-term maintenance of the tortoise crossings and fencing is crucial to the continued effectiveness of the project. Regular inspections of tortoise fencing and crossings would occur, particularly after storm events, to identify locations where maintenance is needed.

3.1.2 Criterion 1.2 Improvement of Terrestrial and Aquatic Habitat Connectivity

The Coyote Springs Tortoise Crossings project is surrounded by designated critical habitat for the desert tortoise, with US 93 bisecting the Coyote Springs Desert Wildlife Management Area (DWMA). The Coyote Springs DWMA is comprised of the Desert National Wildlife Refuge (DNWR), Coyote Springs Investment (private development), and Coyote Springs ACEC and is an almost entirely suitable desert tortoise habitat. Increased human activities may introduce serious threats to the future viability of desert tortoise populations.

ACEC and Associated Signage.

To the west of the project corridor lies the Desert National Wildlife Refuge. The Desert National Wildlife Refuge was founded in 1936, and today, it is the largest wildlife refuge outside of Alaska. The refuge is home to over 500 species of plants, over 320 species of birds, 52 species of mammals, and 32 species of reptiles, including the desert tortoise.

To the east of US 93 lies the Arrow Canyon Wilderness, part of the National Wilderness Preservation System managed by the Bureau of Land Management. The Arrow Canyon Wilderness area is comprised of 27,530 acres of Mojave Desert habitat for a variety of wildlife species. The Meadow Valley Range Wilderness area is over 123,000 acres of wilderness located east of US 93 and north of the Arrow Canyon Wilderness.

Corridor of Protection

This project would connect the wildnerness areas and the wildlife refuge wilderness, resulting in a corridor of protection for the desert tortoise and other wildlife.

Male desert tortoises have significantly larger, more variable home ranges and move greater distances than females. The reported minimum home ranges for males and females are 7.74 hectares (ha) to 46.03 ha and 5.85 ha to 13.62 ha, respectively. Road infrastructure is a barrier to desert tortoise populations due to road mortality, collection, and avoidance. Highway crossing attempts by tortoises are expected to result in mortality (40% of attempts), deflection (59% of attempts), or transmission (1% of attempts). Desert tortoise barrier fencing and associated crossings will stop the carnage and allow for sustainable annual adult survival rates.

The project would greatly benefit the desert tortoise by constructing barrier fencing and 61 crossings over the 34-mile project corridor. Numerous studies have shown that crossings and barrier fencing can substantially mitigate desert tortoise habitat fragmentation due to highways and paved roads.

3.2 SECONDARY MERIT CRITERIA

3.2.1 Criterion 2.1 Leveraging Investments

NDOT intends to utilize dedicated non-Federal contributions to provide matching funds. NDOT has committed $1 million in funds for NEPA, design, administration, legal, and construction activities. These funds will come from the State's General Highway Fund. In addition, Clark County and Lincoln County are committed to providing $275,000 in funds from their Section 7 and Section 10 (respectively) Mitigation Fees. Additionally, $200,000 in post-construction monitoring funds are coming from BLM. NDOT is proactively working with the nearby development of Coyote Springs to support the project. Coyote Springs Investment Group is committing to provide $50,000 to the project's construction efforts.

If the grant is awarded, NDOT will contribute $500,000 to begin the project's NEPA and design efforts. These funds are anticipated to be obligated in Fiscal Year (FY) 2023 once the WCCP grant agreement is established or if the USDOT approves NDOT's request for approval to use these matching funds before a signed grant agreement is completed. NDOT would obligate an additional $500,000 in FY25 as the project moves into construction. In addition, the $50,000 Coyote Springs contribution would be provided for construction activities. Finally, the $275,000 from Clark County and Lincoln County would be obligated in FY24 and FY25 to aid in construction and post-construction monitoring activities. While a non-matching federal contribution, BLM would provide $200,000 in project funding for post-construction monitoring activities in FY 2026 through FY29. Commitment correspondence from these respective groups is provided in Appendix 2. Table 3.1 provides a summary of the timing of the leveraged investments being provided for the project.

Table 3.1 *Timing Summary*

Source	Funding Amount	Obligation Timing
NDOT	$1,000,000	FY 24 and FY 25
Clark County	$200,000	FY 24 and FY 25
Lincoln County	$75,000	FY 25
Coyote Springs (Private)	$50,000	FY 25
BLM (Non-Matching Federal)	$200,000	FY 26 through FY 29

3.2.2 Criterion 2.2 Economic Development and Visitation Opportunities

Economic development from the Coyote Springs Tortoise Crossings project would be limited to the expenditures associated with construction. While there would not be an immediate impact on economic development, the project would provide safe access for desert tortoises and other animals across US 93 as areas such as Coyote Springs incur development.

Visitors to the project area are drawn to two main attractions – the Desert National Wildlife Refuge and the Coyote Springs Golf Club. Access to the DNWR is available from two locations in the project area – Mormon Well Road, approximately two miles south of SR 168 at mile marker 80 in Clark County, and mile marker 32 in Lincoln County. The Coyote Springs Golf Club is a destination golf club attracting visitors from throughout the southwest. Through the post-construction public outreach process, the team would educate Southern Nevada residents on the significance of the project.

3.2.3 Criterion 2.3 Innovation

In addition to greatly reducing road mortality and facilitating habitat connectivity, the Coyote Springs Tortoise Crossings project will provide a test bed for innovative fence-end turnback designs. Turnbacks redirect tortoises away from gaps in the fence associated with open routes and road access. Fence gaps were historically closed with either cattleguards or I-beam steel tortoise guards. Unfortunately, the effectiveness and safety of such guards decline rapidly after installation due to insufficient maintenance, which results in guards that do not work as intended or, worse, creating a potential tortoise trap. Additionally, these guards are exorbitantly expensive and only produced by a few companies, thus requiring long-distance transport. USFWS believes that identifying an optimal turnback design will increase fence effectiveness and reduce installation and maintenance costs.

Drainage Structure/Crossing and Fencing.

Fence and crossings designs are already well-established, so innovation will focus on turnback designs. NDOT has partnered with USFWS to develop three advanced turnback designs. The three proposed innovative designs range in size but are all intended to guide the tortoise back to its habitat and away from the fence and road gap. The largest proposed design incorporates two potential redirection "ramps," while the smaller designs have a single redirection ramp. The smaller designs, however, have a much smaller footprint and thus reduced cost and environmental disturbance. USFWS will utilize the data collected from this project to describe the costs and benefits of each proposed design for development of formal guidance applicable to turnback design recommendations.

3.2.4 Criterion 2.4 Education and Outreach

Every transportation decision affects somebody. Residents, businesses, freight movement, and visitors all rely on the US 93 transportation network and have a stake in the transportation decision process. NDOT is committed to engaging all impacted populations in the transportation decision-making process through a variety of methods.

In Nevada, numerous agencies and partners are working together to provide wildlife crossings in areas with high wildlife-vehicle collisions. Public education is a critical part of these improvements. Outreach efforts will focus on public education about wildlife-vehicle interactions, the effects of habitat fragmentation on desert tortoises, and the benefits of tortoise crossings.

NDOT has established relationships with Clark County Desert Conservation Program and Tortoise Group. Clark County Desert Conservation Program's Mojave Max Program has been educating the public about desert tortoises since 1995. Tortoise Group's Road Warriors program will provide volunteers to inspect this project's tortoise fencing and crossings post-construction. NDOT will work with these organizations and USFWS to promote Desert Tortoise Week in addition to a significant social media campaign, project website, in-person events, and press releases.

Detailed public involvement and education plans will be developed as the project progresses through the design and development process. NDOT's Initial Public Outreach Plan included as Appendix 5.

3.2.5 Criterion 2.5 Monitoring and Research

Post-construction monitoring is an essential part of the Coyote Springs Tortoise Crossings project. Post-construction monitoring will consist of placing trail cameras in culverts to assess their use by desert tortoises. The Bureau of Land Management (BLM) has previously used this method to document culvert use on other projects in the area. While previous camera projects cataloged the use of culverts by tortoises, this monitoring will demonstrate the effectiveness of road mortality prevention by providing connectivity for tortoise populations. Furthermore, monitoring will allow the team to assess how long it will take for tortoises to adjust to the new fence and use the associated culverts to cross the highway.

A large number of photographs will be generated through this camera monitoring system. Due to the anticipated volume of pictures, manual sorting and identification will not be feasible. However, artificial intelligence will be used to identify tortoises in the captured photographs. Clark County has previously used this method of monitoring with great success.

Example of a photo obtained by a BLM monitoring camera.

As described in Criterion 2.3, USFWS intends to use this project to research the most effective and cost-efficient turnaround design before issuing an official agency design recommendation. NDOT's partnerships with BLM and USFWS will allow this project to further identify best practices in tortoise crossing and turnaround design and implementation. It is anticipated that an annual monitoring report will be provided to NDOT from BLM with the annual data and results for the length of the monitoring period.

3.2.6 Criterion 2.6 Survival of Species

The Coyote Springs Tortoise Crossings project would benefit the Mojave desert tortoise, which was listed by USFWS as a federally threatened species in 1990. The desert tortoise is a state of Nevada State-Protected species and a Species of Conservation Priority state priority species. The US Forest Service Region 4 also lists the desert tortoise as threatened.

This project would significantly benefit the Mojave desert tortoise by constructing 61 crossings and fencing along the 34-mile segment of US 93 through critical habitat. Numerous studies have been conducted to determine the effectiveness of barrier fencing and crossings, and are included in Appendix 4, available on the Coyote Springs Tortoise Crossings website at www.dot.nv.gov/coyotespringstortoisecrossings. Without wildlife crossings and barrier fencing, this project area will continue to be a threat to the Mojave desert tortoise and the long-term survival of the species.

four

Project Readiness

4.1 TECHNICAL FEASIBILITY

NDOT has implemented approximately 470 miles of tortoise fencing in Nevada and installed 20 tortoise crossings (with eight more in progress), equipping their staff with the required technical expertise to deliver this project successfully. In addition to following Best Management Practices in coordination with USFWS, NDOT has used this extensive experience to establish policies and procedures for developing and implementing tortoise crossing projects. Standards for tortoise crossings include using backfilling rip rap with native material to fill in cracks and voids to be safer for tortoises and installing tortoise sidewalks (made of reinforced concrete or compacted soil) on either side of any rip rap.

NDOT has documented sightings of desert tortoises using their implemented crossings and have noted that they are effective in preventing tortoise mortality and providing safer connectivity across their range.

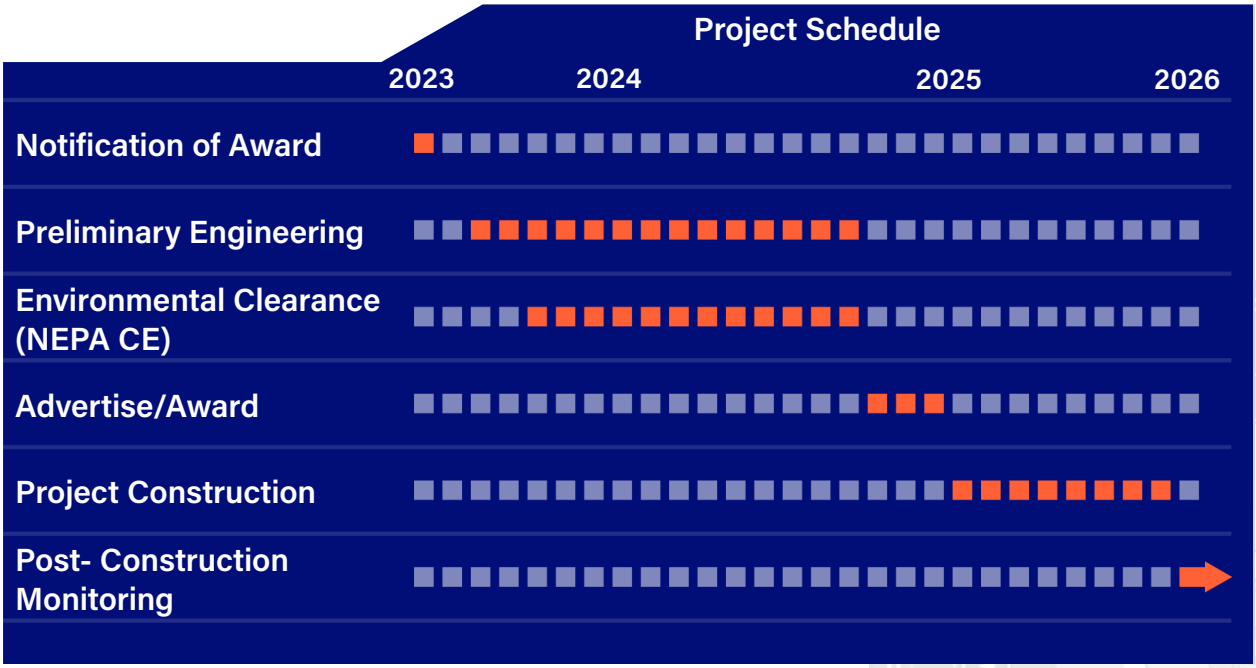
The project cost estimate is well thought out, involving people from many NDOT disciplines such as Constructability, Environmental, Traffic, and other agencies like USFWS and BLM. It was made to be as detailed and accurate as possible and was developed using NDOT's current pricing information.

4.2 PROJECT SCHEDULE

The preliminary reviews and project design for the Coyote Springs Tortoise Crossings project will begin immediately upon the award of the grant funding. NDOT is prepared to obligate construction funding, including WCCP Grant funds within 12 months of the award.

The project would not require additional right-of-way or real property acquisition, which can involve considerable time and effort. Therefore, project design and preliminary engineering will be straightforward. There would also be no associated impacts on the project schedule or disruption to community cohesion.

All necessary activities will be completed in a timely manner to allow for obligation of funds as required by the grant agreement. Any



unexpected delays would not result in funds expiring before the obligation date.

4.3 REQUIRED APPROVALS

4.3.1 Environmental Permits and Review

NEPA compliance will be completed using an FHWA Categorical Exclusion (CE) in accordance with 23 CFR 117(c)(8). BLM is currently preparing NEPA clearance for tortoise fencing throughout southern Nevada and relevant data from their clearance will be adopted to support this project's CE. All Section 106 compliance work or other consultations completed by other federal agencies will be adopted to support the CE. Section 7 consultation for the desert tortoise with USFWS could take up to 135 days. However, since the agency has been an active participant in the project development phase, the consultation is anticipated to be completed in less time.

Though the project is in a rural location with no adjacent residents, public outreach will still be a significant component of this project. Public outreach efforts will focus on public education about wildlife-vehicle interactions, the effects of habitat fragmentation on desert tortoises, and the benefits of tortoise crossings. NDOT will utilize a significant social media campaign, a project website, in-person events, and press releases to educate and inform the public. Public support and involvement are critical to ongoing conservation efforts beyond the scope of this project.

NDOT has identified several local agencies and organizations to partner with for outreach efforts, such as Tortoise Group and Clark County Desert Conservation Program (DCP). Clark County DCP's Mojave Max program has been educating the public about desert tortoises since 1995. NDOT will work with USFWS to promote Desert Tortoise Week via social media and other public events. Tortoise Group's Road Warriors program will provide volunteers to inspect the project tortoise fence and crossings at regular intervals.

Tortoise Group

Tortoise Group is a non-profit organization educating and advocating for the protection and well-being of the desert tortoise since 1982. Their Road Warriors volunteers will focus their time and efforts on monitoring this segment of US 93 for tortoise sightings and post-construction monitoring of tortoise crossings and fencing.

4.3.2 State and Local Approvals

Ongoing coordination with Clark and Lincoln Counties will be necessary throughout project development. Coordination with the local field offices for BLM and USFWS would occur in regulation during the NEPA process, project construction, and post-construction monitoring.

Additionally, the project has broad public support, as documented in the Letters of Support included in Appendix 1.

4.3.3 Federal Transportation Requirements Affecting State and Local Planning

The Statewide Transportation Improvement Program (STIP) is a four-year, fiscally constrained and prioritized planning document that addresses the multimodal needs of Nevadans. The Coyote Springs Tortoise Crossings project is not currently listed in the STIP. However, NDOT will amend the current STIP following the established modification and amendment process if grant funds are awarded for the project.

4.3.4 Assessment of Project Risks and Mitigation Strategies

The Coyote Springs Tortoise Crossings project is a very low-risk yet high-reward project. The process for designing and installing tortoise fencing and crossings is straightforward and a process that NDOT is familiar with. Additionally, tortoise fencing and crossings have been documented as incredibly effective at reducing tortoise mortality. Since there are no associated roadway improvements included in this project, environmental clearance is very clear-cut. Many federal, state, and local agencies and organizations support this project. The project is located in designated critical desert tortoise habitat, which is a priority area to provide barrier fencing and crossings. The most significant risk to the success of this project is funding. Awarding these grant funds would allow this project to proceed, greatly benefiting southern Nevada's Mojave desert tortoise population recovery efforts.

Young tortoise on roadway in the project area.

five

Administration Priorities

5.1 SAFETY

The importance of vehicle-wildlife interaction is typically defined in terms of danger to human safety and the resulting property damage costs. This has resulted in a preoccupation with large animal vehicle-wildlife collision minimization and avoidance and an underappreciation for the severe consequences for our Nation's wildlife resources associated with small animal vehicle-wildlife collisions. Vehicle-wildlife collisions are a major threat to the survival of the Mojave desert tortoise.

Though vehicle collisions with small animals may not pose significant risks to human safety, near- accidents and attempts to avoid hitting small animals pose risks not considered in general vehicle-wildlife interactions.

Human safety may not be considered a significant risk in Mojave desert tortoise vehicle-wildlife collisions, the consequences for tortoises are devastating. Desert tortoises hit during a collision rarely die on impact. Instead, a tortoise typically dies hours or days after the collision due to blood loss or hyperthermia. Given the harsh reality of roadways along and through critical habitats, tortoise populations are not expected to achieve a stable population expansion rate in the presence of unfenced roads (Peaden 2017). The key first step toward Mojave desert tortoise recovery is stabilizing population expansion rates.

Tortoise carcass on a Southern Nevada roadway.

5.2 CLIMATE CHANGE AND SUSTAINABILITY

The impacts of climate change are expected to degrade some habitats while potentially improving others. To facilitate movement between degraded and improved habitats, the Coyote Springs Tortoise Crossings project would provide 61 tortoise crossings that ensure safe passage under US 93, plus over 68 miles of tortoise exclusion fencing to direct tortoises toward crossings and prevent road mortality. Installing tortoise crossings will allow the desert tortoise population in this area to maintain genetic connectivity and extensive average home range areas. Additionally, these crossings will provide the opportunity for demographic rescue and thus higher population viability. Implementing tortoise fencing with wildlife crossings may help reduce potential adverse environmental impacts.

Proactive Approach

NDOT is also proactively addressing infrastructure resiliency relative to the effects of climate change.

NDOT recently developed actionable recommendations to develop a statewide plan to advance resiliency due to future unplanned disruptions/emergencies, including strategies for emergency preparedness across a broad set of disruption categories.

5.3 EQUITY

The project is located in rural southern Nevada, with no communities immediately adjacent to the project. The Desert National Wildlife Refuge is located to the west of US 93. To the east of US 93, in Lincoln County, the project area is included as part of the Caliente Census County Division (CCD), according to US Census Bureau data. The median income of Caliente CCD is $38,750, which is less

than the Nevada median income of $66,274. Twenty-nine percent of the population within Caliente CCD is 65 years or older, compared to only 16.5 percent of the state of Nevada over age 65.

The project would improve a rural, isolated area of Nevada, benefiting the region.

5.4 WORKFORCE DEVELOPMENT, JOB QUALITY, AND WEALTH CREATION

NDOT plans for and provides trainee hours on available projects to expose the workforce to multiple disciplines and development.

NDOT has a long-standing reputation for providing opportunities for workforce development, job quality, and wealth creation. As required by NRS and other federal requirements, this project will be procured through an open, low-bid process. The contract requirements will include prevailing wage consisting of local Davis-Bacon prevailing wage requirements. This provides an equal playing field for unionized contractors to be competitive with non-unionized contractors and guarantees workers will be compensated equally. In addition, NDOT will provide trainee hours on this project which offer opportunities for less-experienced workers to hone their crafts while providing a fair bidding situation amongst all interested contractors. The project will also provide opportunities for disadvantaged and minority business owners. Before construction contract bidding, NDOT Title VI and Civil Rights division will work with the FHWA and USDOT to establish a DBE/Minority/SBE percentage goal for the project, which the contractors must achieve or provide good-faith documentation to be deemed responsive. Finally, the project lies within the rural area of Clark County, Nevada, and within close proximity to the Moapa Indian Reservation and associated Moapa Band of Paiute Indians, providing nearby potential training and employment opportunities for their tribe and other local rural residents.