3.9 Vegetation, Wildlife, and Fish

This section describes the vegetation, wildlife, and fish in the study area. It also describes the project's direct, indirect, and construction effects on the resources and measures that NDOT is considering to avoid, minimize, and mitigate impacts on vegetation, wildlife, and fish. See Section 3.12 for the project's cumulative impacts on federally protected fish species. The Spaghetti Bowl Project Vegetation, Wildlife, and Fish Technical Report in Appendix D.11 provides more information about these resources.

EXISTING CONDITIONS → VEGETATION, WILDLIFE, AND FISH IMPACTS → MEASURES TO MINIMIZE AND MITIGATE ADVERSE VEGETATION, WILDLIFE, AND FISH IMPACTS

EXISTING CONDITIONS

Vegetation

The study area is mostly developed urban landscape, except for the Truckee River corridor and small areas of native vegetation near the north end of the project. The vegetation that provides the highest quality wildlife habitat in the study area is along the Truckee River. Narrow bands of Fremont cottonwoods and willows line both banks of the river in the study area. The largest area of native vegetation away from the Truckee River is along US 395, north of Clear Acre Lane with areas of sagebrush, western juniper, cheatgrass, mountain tansy mustard, and other flowering plants and grasses.

Upland habitat north of Clear Acre Lane along US 395

3.9 VEGETATION, WILDLIFE, AND FISH

Wildlife

NDOT consulted multiple sources to determine which fish, plants, and animals are in the study area.

Common wildlife species in the study area are adapted to urban habitat or river bank (Truckee River) habitat. Birds found in or near the study area include sparrows, robins, starlings, doves, red-tailed hawks, harriers, great blue heron, and California quail. Mammals include mice, raccoon, skunk, beaver, coyote, and mule deer. Garter snakes and western pond turtles are also found in or near the study area (Buckley 2016). Information about protected wildlife species is found later in this section.

The Truckee River corridor allows wildlife to move through the study area without crossing local roads and the freeway. The Nevada Department of Wildlife has not identified any additional wildlife migration corridors through the study area (Freese 2018).

Fish

The Nevada Department of Wildlife periodically conducts fish surveys in the Truckee River. Fish identified in the 2015 survey (Hawks 2016) include:

- Game species – nonnative rainbow trout and brown trout, and native mountain whitefish
- Native, nongame species – Paiute sculpin, Lahontan redside, speckled dace, mountain sucker, Tahoe sucker, common carp, and tui chub
- Undesirable species – green sunfish, largemouth bass, and fathead minnow

The Department of Wildlife has stocked Lahontan cutthroat trout, a federally threatened species, in the Truckee River, but the species was not recorded in the 2015 survey. All the species the Department of Wildlife recorded in the 2015 survey are likely to occupy the study area or move through it.

Sensitive Species

NDOT gathered information on sensitive species from the following sources:

- The U.S. Fish and Wildlife Service (see Attachment 6 of Appendix E, Community Involvement and Agency Coordination Prior to Draft EIS Approval) and Table 3-3 of the Vegetation, Wildlife, and Fish Technical Report in Appendix D.11).
- The Nevada Natural Heritage Program (NNHP) (see Table 3-1 in Appendix D.11).
- NDOT biologists' review of the study area. NDOT obtained a list of species in the project vicinity from the Nevada Department of Wildlife and evaluated applicability to the study area (Table 3-2 in Appendix D.11).

The Nevada Department of Wildlife and Division of Forestry was consulted as to the presence of Nevada Natural Heritage Program listed species in the study area and whether any mitigation was needed if species were present.

The project may affect the following sensitive species in or near the study area:

- Lahontan cutthroat trout
- Mollusks (five species)
- Soft lupine
- Lewis's woodpecker
- Bats (10 species)
- Osprey

According to the U.S. Fish and Wildlife Service, there are five federally protected species that may occur in the study area: North American wolverine, Webber's ivesia, Steamboat buckwheat, Lahontan cutthroat trout, and cui-ui. However, there is no habitat for the North American wolverine, Webber's ivesia, or Steamboat buckwheat (Simpson 2017a and 2017b).

Lahontan cutthroat trout is the only federally protected species found in the study area.

Only one federally protected species, the Lahontan cutthroat trout, is currently found in the study area. Lahontan cutthroat trout, which is listed as threatened, occur throughout the Truckee River within Nevada. The native species is not known to be present in the study area, but hatchery-raised Lahontan cutthroat trout do occur. Lahontan cutthroat trout do not spawn in the study area. The native Lahontan cutthroat trout may return to the study area due to the following planned fish-passage improvement projects (Hottle 2017a):

- Steamboat Ditch Diversion near Verdi west of the study area (scheduled for 2018 , now postponed)
- Verdi Power Dam (2019)
- Washoe Highlands Dam (2021)
- Fleisch Diversion Dam (2022)

In addition, when Derby Dam, east of the study area, is rehabilitated to allow fish passage, native Lahontan cutthroat trout will be able to move farther up the river toward the study area (Hottle 2017b).

The cui-ui (listed as endangered) does not currently occur in the Truckee River in the study area. The cui-ui cannot access the river above Derby Dam east of Reno and Sparks. Cui-ui only occur from Pyramid Lake to Derby Dam on the Truckee River and in Pyramid Lake. There are currently no fish passages at Derby Dam that allow spawning migrations of cui-ui to pass west of the dam. Because of the proposed fish passage projects noted above, cui-ui are expected to be able to move upriver into the study area in the future (Hottle 2017b). It is unclear whether the proposed fish passage improvements that would allow the cui-ui to move into the study area will be completed by the time this project is built. The Biological Assessment (in Appendix D.10) provides detailed information about the biology and life history of the Lahontan cutthroat trout and cui-ui.

The study area also contains habitat for five mollusk species on the NNHP at-risk-species list (California floater, Pyramid Lake pebblesnail, turban pebblesnail, smooth juga, and western Lahontan pyrg). One of the five species, the California floater (mussel), is a Bureau of Land Management and a U.S. Forest Service (Region 4) Sensitive Species.

Lewis's woodpecker is an NNHP Watch List species and a Bureau of Land Management Sensitive species. It favors open forests, ranging in altitude from low-elevation riparian areas, like the Truckee River corridor, to higher-elevation burns and pine forests during the breeding season. Like all woodpeckers, it requires standing dead or partly dead trees (snags) for nesting.

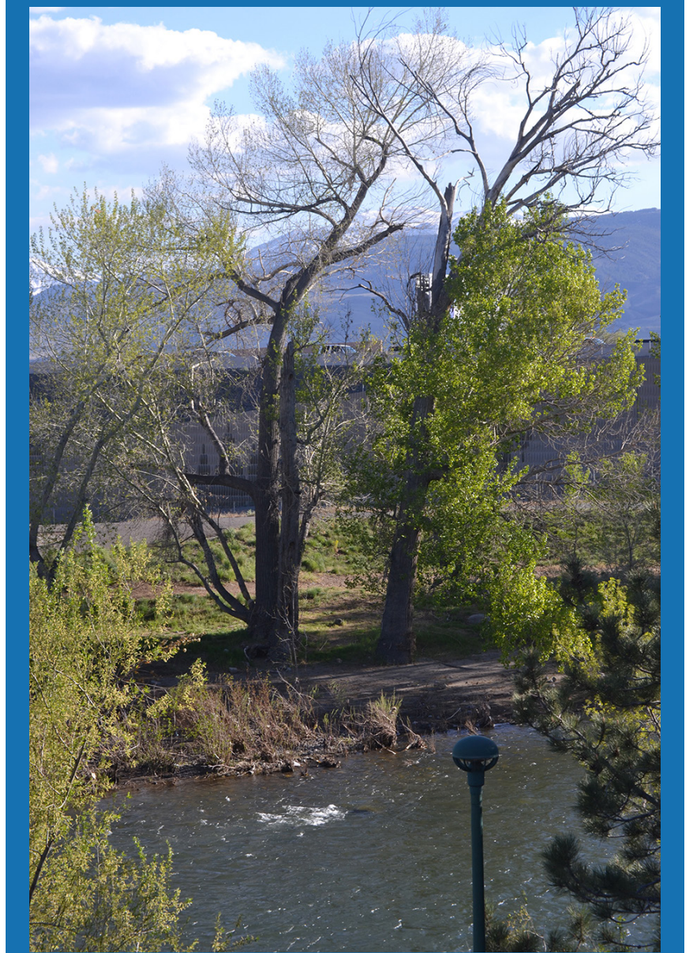
Soft lupine is the only NNHP special-status plant species with potential habitat in the study area. Its habitat includes sandy, gravelly, or clay slopes and flats in areas of sagebrush and pinyon-juniper, in openings or on road banks or other recovering disturbances.

Several bat species are or may be found in the study area. They may roost in abandoned buildings, Truckee River trees with large cavities, and under bridges.

Osprey, listed as Critically Imperiled by the NNHP, may also occupy the study area.

The Migratory Bird Treaty Act and Nevada Administrative Code 503.050 protect most native bird species in the United States, including several migratory birds in the study area. Most bird species' breeding periods fall between March 1 and July 31 (Simpson 2018). Landscaping trees, native trees and shrubs, and the Truckee River corridor provide nesting habitat. Swallow nests may be found on study area bridges.

Eagles are protected by the Bald and Golden Eagle Protection Act. Eagles are not likely to nest in the study area because of the level of human disturbance (Simpson 2018). However, bald eagles may use the Truckee River corridor, and golden eagles may forage in open areas on the north end of the study area.



Snags along the Truckee River provide potential Lewis's woodpecker habitat.

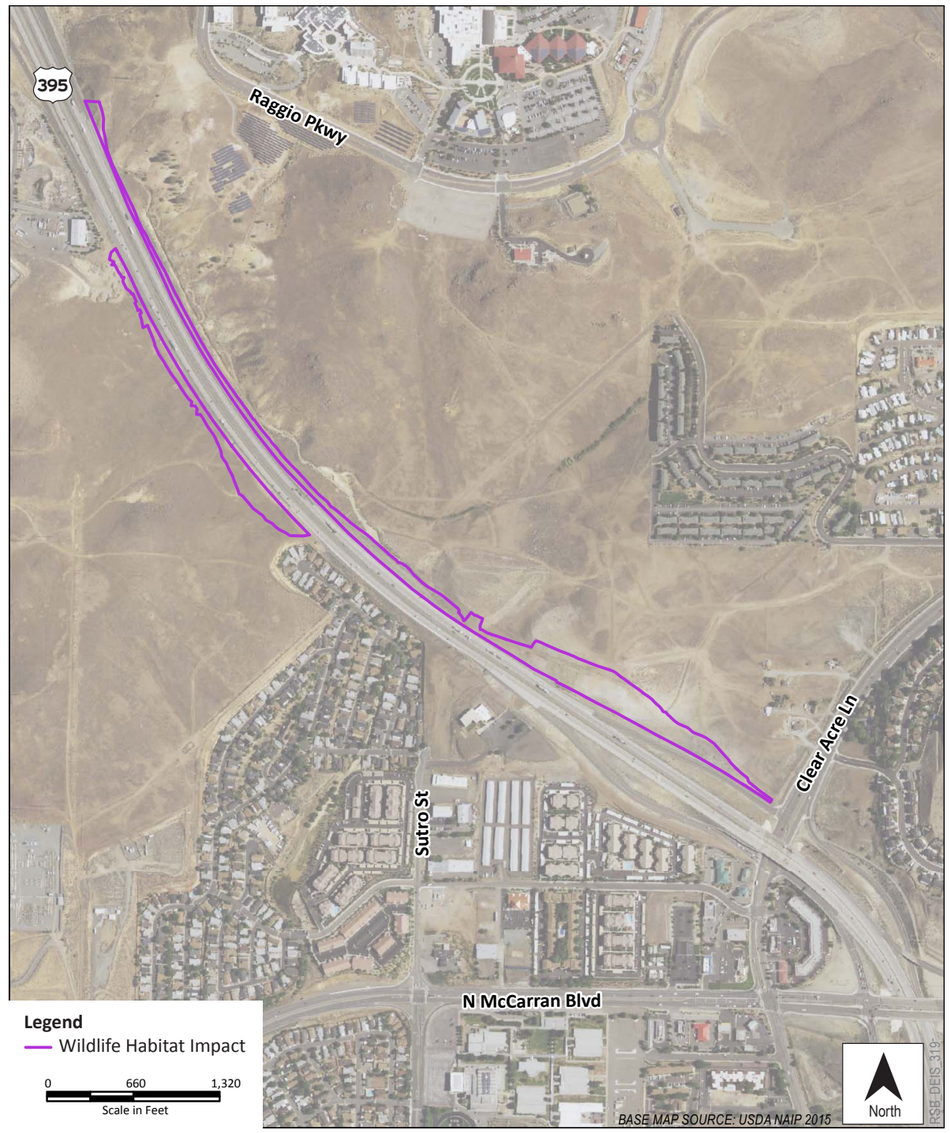
VEGETATION, WILDLIFE, AND FISH IMPACTS

Potential impacts to vegetation, wildlife, and fish in the study area may occur because NDOT is proposing to widen the freeways, relocate freeway-to-freeway ramps and freeway on- or off ramps, and modify local roads in some locations (Table 3.9-1). This project would not construct new roads on a new alignment. The freeway widening, new ramp locations, and local road modifications associated with Alternatives 1, 2, and 3 would result in new strips of land required for freeway use. NDOT designed Alternatives 1, 2, and 3 to avoid or minimize, to the extent practicable, impacts to the adjacent environment. As a result, the alternatives NDOT analyzed minimize impacts while addressing the purpose and need of the project.

Table 3.9-1. Vegetation, Wildlife, and Fish Impacts

	No Build Alternative	Alternative 1	Alternative 2 (Preferred Alternative)	Alternative 3
Vegetation Impacts	No impact	Alternatives 1, 2, and 3 would affect landscape plants and small areas of natural vegetation along roadways as well as approximately 12.1 acres of undeveloped area adjacent to US 395 north of Clear Acre Lane (Figure 3.9-1).		
		• Permanently affects 1.02 acres of trees and other vegetation along the banks of the Truckee River. This permanent impact is due to areas where vegetation would not grow back due to the new areas of shade provided by the new bridges. • Impact along Truckee River is greater than Alternatives 2 and 3 due to more bridges crossing the river (Figure 3.9-2). • **Construction.** An additional 0.18 acre of vegetation along the Truckee River would be temporarily disturbed during construction. This vegetation would grow back after construction.	• Permanently affects 0.11 acre of trees and other vegetation along the banks of the Truckee River. This permanent impact is due to areas where vegetation would not grow back due to the new areas of shade provided by the new bridges. • **Construction.** An additional 0.08 acre of vegetation along the Truckee River would be temporarily disturbed during construction. This vegetation would grow back after construction. Alternative 1 would affect more river habitat than Alternatives 2 and 3 because it would have more bridges crossing the Truckee River and would require clearing a larger construction corridor to install bridge embankments and piers.	

Figure 3.9-1. Upland Wildlife Habitat Impacts

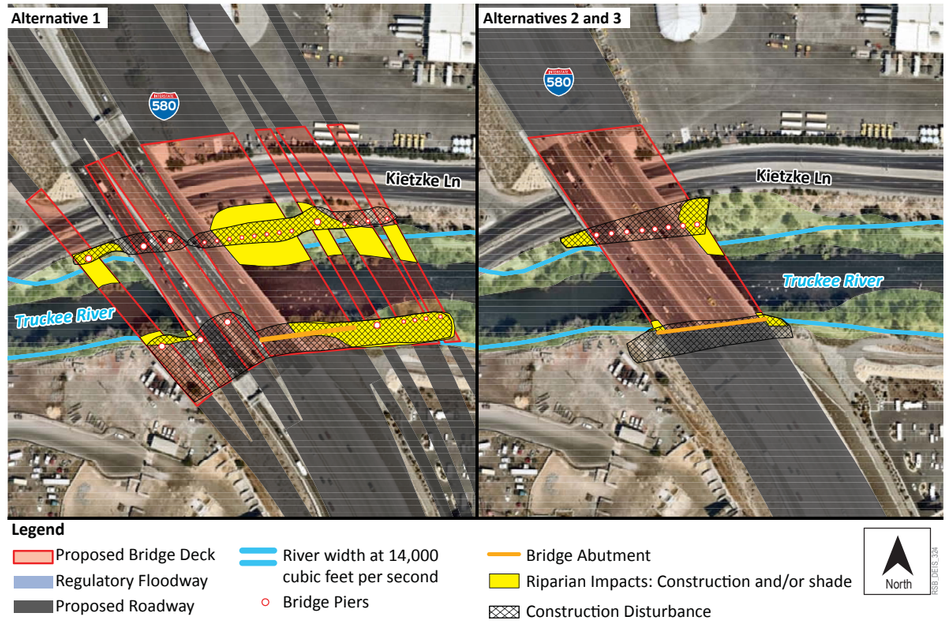


Alternatives 1, 2, and 3 would affect 12.1 acres of vegetation in the undeveloped area next to US 395 north of Clear Acre Lane.

Table 3.9-1. Vegetation, Wildlife, and Fish Impacts (continued)

	No Build Alternative	Alternative 1	Alternative 2 (Preferred Alternative)	Alternative 3
Wildlife Impacts	No impact	The loss of 12.1 acres of wildlife habitat with Alternatives 1, 2, and 3 would force the more mobile wildlife inhabiting the affected habitat to move to similar adjacent habitat. The edge impacts along US 395 at the north end of the project (Figure 3.9-1) would have minor effects on wildlife because there would still be habitat outside the project footprint to provide cover for breeding, foraging, and resting. Given the current amount of development, any wildlife in the study area have adapted to urban areas and tolerate high levels of human activity, so no adverse impacts are expected to the wildlife species in the study area, including the sensitive species mentioned above. Animals displaced by the project that inhabit the Truckee River corridor would move upstream or downstream to similar habitat. Riverbank habitat is more limited than upland habitat; therefore, there are fewer opportunities for river-corridor species to move to another location than for upland species. However, Alternatives 1, 2, and 3 would not result in an appreciable loss of any species that rely on riverbank habitat. The only known wildlife movement corridor in the study area is the Truckee River corridor, where wildlife pass under the freeway and avoid conflicts with traffic. Because mammals, amphibians, and reptiles will continue to use their movement corridors, vehicle-animal collisions after construction are likely to increase as traffic volumes steadily increase. Because the No Build Alternative and Alternatives 1, 2, and 3 would have similar future (2040) traffic volumes, the frequency of wildlife collisions and impacts on wildlife would be similar among all alternatives. Indirect impacts to wildlife caused by collisions would not adversely affect the continued abundance of the wildlife species in the study area. **Construction.** Swallow nests may be adversely affected by bridge demolition during construction. NDOT would survey bridge undersides for swallow nests. A variety of bats may use the area for roosting and foraging. Foraging activities for bats may be affected if construction occurs at night using bright lights.		

Figure 3.9-2. Truckee River Habitat Impacts



Alternative 1 would affect more river habitat than Alternatives 2 and 3 because it includes more bridges crossing the Truckee River, which would require clearing a larger construction corridor.

Table 3.9-1. Vegetation, Wildlife, and Fish Impacts (continued)

	No Build Alternative	Alternative 1	Alternative 2 (Preferred Alternative)	Alternative 3
Fish Impacts	Because the No Build Alternative would not treat water flowing off the freeway like Alternatives 1, 2, and 3, it would not have the same water quality benefits as those alternatives.	Alternatives 1, 2, and 3 would involve building new bridges over the Truckee River. These bridges would cross over the Truckee River without any supports (piers) in the river. The existing I-580 bridge over the Truckee is supported by a large concrete pier within the water. Under Alternatives 1, 2, and 3, NDOT would remove that pier. Alternatives 1, 2, and 3 would have a positive indirect effect on fish because the stormwater basins proposed with the alternatives would remove some pollutants in freeway runoff before it enters the Truckee River. The potential improvements to water quality would benefit fish and other aquatic plants and animals in the Truckee River. Rising river temperatures have a negative impact on Lahontan cutthroat trout and cui-ui. Although the project would remove trees and shrubs on the banks of the Truckee River, this would not cause the river temperature to increase. Furthermore, while the proposed bridges over the Truckee River with Alternatives 1, 2, and 3 would be wider than the existing I-580 bridge and would provide more shade, the additional shade would also not affect the temperature of the Truckee River.		Alternatives 1, 2, and 3 would not have a long-term impact on the Lahontan cutthroat trout, but NDOT determined the project may adversely affect this fish species when the I-580 bridge pier is removed from the Truckee River.
Sensitive Species Impacts	Because the No Build Alternative would not treat water flowing off the freeway like Alternatives 1, 2, and 3, it would not have the same water quality benefits for the Lahontan cutthroat trout. The No Build Alternative would not alter conditions within the Truckee River to benefit invasive species to the detriment of the Lahontan cutthroat trout.	Alternatives 1, 2, and 3 could affect one federally protected species, the Lahontan cutthroat trout. The three alternatives would not have a long-term impact on the Lahontan cutthroat trout. Because of the project's potential impact during construction on the Lahontan cutthroat trout, the federal Endangered Species Act requires NDOT to formally consult with the U.S. Fish and Wildlife Service and prepare a Biological Assessment for that species (Vogt 2017). A Biological Assessment, which documents an agency's conclusions regarding the effects of its proposed actions on protected resources, is required when a project may affect a federally protected species. NDOT prepared a Biological Assessment and sent it to the U.S. Fish and Wildlife Service in March 2018 (see Appendix D.10). The Biological Assessment provides a detailed description of the project's potential impacts on the Lahontan cutthroat trout. Alternatives 1, 2, and 3 would have a positive indirect effect on the Lahontan cutthroat trout because of the potential water quality improvement in the Truckee River caused by the stormwater basins described earlier, in the Sensitive Species subsection of Existing Conditions. Alternatives 1, 2, and 3 would not alter conditions within the Truckee River to benefit invasive species to the detriment of the Lahontan cutthroat trout. Based on the Biological Assessment, the U.S. Fish and Wildlife Service completed a Biological Opinion for the Lahontan cutthroat trout. A Biological Opinion states whether the proposed activity will jeopardize the continued existence of a listed species. In September 2018, the U.S. Fish and Wildlife Service determined that the project would not jeopardize the continued existence of the Lahontan cutthroat trout (see Appendix D.10). Alternatives 1, 2, and 3 may also affect the five mollusk species on NNHP's At-Risk Species List when the I-580 bridge pier is removed from the Truckee River. Alternatives 1, 2, and 3 would not indirectly affect the mollusk species because stormwater mitigation measures described in Section 3.8, Water Resources, would avoid or minimize adverse impacts to water quality in the Truckee River that could affect mollusks. Alternatives 1, 2, and 3 would not alter conditions within the Truckee River to benefit invasive species to the detriment of the mollusk species. Alternatives 1, 2, and 3 would eliminate suitable habitat, which would also potentially affect these other NNHP At-Risk Species: • Soft lupine is the only NNHP special-status plant species with potential habitat in the study area. • Lewis's woodpecker may use large snags for nesting. If large snags along the Truckee River are removed to construct the new bridge, active nests could be affected. Bats roost along the Truckee river in abandoned buildings, trees with large cavities, and bridge undersides. Under Alternatives 1, 2, and 3, some of these potential roosting spots would be removed. As a result, there could be adverse impacts to roosting colonies of bats. The following bat species may be affected by the project: big brown bat, spotted bat, hoary bat, California myotis, western small-footed myotis, little brown myotis, fringed myotis, long-legged myotis, Yuma myotis, and canyon bat. **Construction.** NDOT determined that the project may adversely affect the Lahontan cutthroat trout during construction when the I-580 bridge pier is removed from the Truckee River. NDOT would temporarily dewater part of the Truckee River to create a dry work zone to remove the I-580 bridge pier from the river. Construction impacts to the protected Lahontan cutthroat trout would occur through direct contact during dewatering and fish salvage activities. Bridge construction could also startle fish and cause them to avoid the area during construction. More information about the potential to remove the Lahontan cutthroat trout from the proposed dewatered area around the I-580 bridge pier is found in the Biological Assessment in Appendix D.10. Sedimentation in the river, hazardous material spills into the river, or short-term removal of habitat during construction may impact Nevada Natural Heritage Program tracked species (listed in Table 3-2 of Appendix D.11, Vegetation, Wildlife, and Fish). Bird species may avoid the area during construction due to temporary habitat removal. If the American water shrew or Preble's shrew (which are both on Nevada Natural Heritage Program's At-Risk Species List) inhabit the part of the Truckee River that would be disturbed during construction, some of those individuals would likely be lost. This is not expected to affect the survivability of the species in the study area.		Alternatives 1, 2, and 3 would not result in an appreciable loss of any species that rely on riverbank habitat.

MEASURES TO MINIMIZE AND MITIGATE ADVERSE VEGETATION, WILDLIFE, AND FISH IMPACTS

From early in the alternatives development phase, NDOT has refined the design of Alternatives 1, 2, and 3 to avoid or minimize adverse effects on vegetation, wildlife, and fish while also meeting the project's purpose and need. Table 3.9-2 describes mitigation measures.

Table 3.9-2. Mitigation Measures for Vegetation, Wildlife, and Fish Impacts

	Mitigation All Alternatives
Vegetation	During design, NDOT will evaluate the feasibility of planting native vegetation within the right-of-way, including areas where existing pavement will be permanently removed. In addition, NDOT will install erosion-control best management practices and stormwater management facilities to protect vegetation from water-related erosion. **Construction.** Stream banks will be regraded and revegetated to pre-project conditions or better. The contractor will develop and follow a Noxious Weed Management Plan to prevent the establishment and spread of Nevada State listed noxious weeds per Nevada Revised Statute 555. The management plan will include mapping of existing noxious weed populations; appropriate eradication/control methods based on weed type and location; applicator certification; monitoring and retreatment as necessary; and methods for keeping equipment, personnel, staging areas, construction and excavation sites, and roadways clear of noxious weed plants and seeds. The plan will also address the treatment of weeds in topsoil salvage material.
Wildlife	No long-term mitigation measures needed. **Construction.** NDOT will require nesting bird surveys between March 1 and July 31 (migratory bird nesting season) and prior to the removal of trees and vegetation to minimize impacts to active nests. The survey will be performed no more than 7 days before the proposed tree or vegetation removal date. If active nests are identified, NDOT will protect them in place with a buffer and limit construction until the young leave the nest. All bridges and buildings will be inspected for the presence of roosting bats or nesting swallows prior to demolition. Measures will be taken to prevent nesting or roosting on structures prior to demolition. If nesting swallows or roosting bats are identified, then they will not be disturbed until the young leave the nest or roost.
Sensitive and Protected Species	No long-term mitigation measures needed. **Construction.** NDOT will survey large snags along the Truckee River that will be removed to construct the proposed I-580 bridge to determine whether Lewis's woodpeckers or other species of migratory birds are nesting there. The survey will be performed no more than 7 days before the proposed tree removal date. If active nests are identified, NDOT will protect them with a buffer and limit construction until the birds leave the nest. NDOT will implement the measures the U.S. Fish and Wildlife Service identified in its September 2018 Biological Opinion for the Lahontan cutthroat trout (in Appendix D.10). • The in-river work area is estimated to be 0.65 acre. • To minimize impacts on the Lahontan cutthroat trout, NDOT's contractor will develop a fish salvage plan that follows the National Marine Fisheries Service fish salvage protocols. Lahontan cutthroat trout and other fish that do not migrate out of the temporary river diversion will be moved manually through coordinated efforts with NDOT's contractor and NDOT biologists. Qualified fisheries biologists will move the Lahontan cutthroat trout to a safe place in the river. This process will comply with any additional protocols requested by U.S. Fish and Wildlife Service staff. NDOT will report the completion of the move to the Fish and Wildlife Service within 30 days after it is completed. • In accordance with NDOT requirements, water isolated from the diverted Truckee River channel will slowly drain out of the work zone at 1 to 3 inches per hour to allow fish to move downstream. • Work within the Truckee River is restricted to July 1 through September 30 to avoid the Lahontan cutthroat trout and cui-ui spawning seasons, as well as the spawning seasons for other fish species.

Table 3.9-2. Mitigation Measures for Vegetation, Wildlife, and Fish Impacts (continued)

	Mitigation All Alternatives
Sensitive and Protected Species (continued)	To eliminate the possibility of invasive species introduced to the Truckee River, NDOT will require construction equipment to be inspected for invasive species and prohibit the equipment from entering another water body for a minimum of 5 days. All equipment used in or near the water will be pressure-washed prior to use. The contractor will be made aware of New Zealand mudsnail, and NDOT will provide them a protocol to reduce risk of spreading. • Fueling areas will be at least 100 feet from the river. • Implementing best management practices, such as silt fences or erosion-control products, will minimize impacts due to sedimentation, hazardous material spills, or short-term habitat loss during construction. • Best management practices will be implemented to prevent debris or contamination from the bridge deck work. • Water quality turbidity samples will be collected daily during the construction period upstream and downstream of the work area. Work will be suspended if a downriver sample exceeds 10 nephelometric turbidity units above the upriver sample. • All other measures in the Biological Opinion will be implemented (see Appendix D.10). If other agencies identify measures in plans they approve (e.g., Truckee River diversion plan) or permits (Sections 404 and 401 of the Clean Water Act and Section 408 of the Rivers and Harbors Act of 1899), NDOT will implement them before or during construction.

VEGETATION, WILDLIFE, AND FISH REFERENCES

Buckley, Chris. 2016. *Living with Urban Wildlife*. http://www.kolotv.com/content/news/Living-With-Urban-Wildlife-364755171.html. Accessed January 22, 2018.

Freese, Mark. 2018. Personal communication (email) from Mark Freese (Nevada Department of Wildlife) to Denny Mengel (Jacobs) confirming that the Truckee River corridor is the only major wildlife movement corridor through the study area. February 12.

Hawks, T. 2016. *Federal Aid Job Progress Report F-20-51, 2015, Truckee River, Western Region, Nevada Department of Wildlife, Statewide Fisheries Management*.

Hottle, D. 2017a. *Truckee River fish passage to help Lahontan cutthroat*. https://www.fws.gov/cno/newsroom/featured/2017/pilot_peak_lahontan_cutthroat_trout/sidebar.html. Accessed December 15, 2018.

Hottle, D. 2017b. 'Monster' Lahontan cutthroat making a comeback. https://www.fws.gov/cno/newsroom/featured/2017/pilot_peak_lahontan_cutthroat_trout/. Accessed December 15, 2018.

Simpson, Nova O. 2017a. Personal communication (email) from Nova Simpson (NDOT) to Denny Mengel (Jacobs) confirming that there is no steamboat buckwheat habitat in the project area. June 5.

Simpson, Nova O. 2017b. Personal communication (email) from Nova Simpson (NDOT) to Denny Mengel (Jacobs) to confirm that NDOT, U.S. Fish and Wildlife Service, and Nevada Department of Wildlife agree that the in-river work period will be July 1 to September 31. December 5.

Simpson, Nova O. 2018. Personal communication (email) from Nova Simpson (NDOT) to Denny Mengel (Jacobs) stating the migratory bird nesting season in the study area and that there are no reports of eagle nesting in the study area, but they may be present periodically. January 29.

Vogt, Sean. 2017. Personal communication (email) from Sean Vogt (U.S. Fish and Wildlife Service) to Nova Simpson (NDOT) informing NDOT that formal consultation will be required for both Lahontan cutthroat trout and cui-ui. July 11.

PAGE LEFT INTENTIONALLY BLANK