D.10 BIOLOGICAL OPINION

Biological Opinion

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Environmental Services, Room 104
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Subject: Mixed Consultation on the Proposed I-80/I-580/US 395 Spaghetti Bowl Interchange Reconstruction Project, Reno, Nevada

Dear Mr. Cooke:

The U.S. Fish and Wildlife Service (Service) received your biological assessment (BA) on March 27, 2018, for the proposed I-80/I-580/US 395 Spaghetti Bowl Interchange Reconstruction Project (Project) in Reno, Nevada. The BA addressed the proposed Project's effects to federally-listed as endangered cui-ui (*Chasmistes cujus*) and federally-listed as threatened Lahontan cutthroat trout (LCT; *Oncorhynchus clarkii henshawi*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 *et seq.*) [Federal Highway Administration (FHWA) and Nevada Department of Transportation (NDOT) 2018]. The NDOT has been designated as the non-Federal representative by the FHWA under the ESA (S. Cooke, Environmental Services Chief, NDOT *in litt.* 2018). The NDOT has requested concurrence on their determination that the proposed Project is not likely to adversely affect cui-ui and has requested initiation of formal consultation for their may affect, is likely to adversely affect determination for LCT. Critical habitat has not been designated for cui-ui or LCT; therefore, none will be affected.

The Service has reviewed the proposed Project and evaluation of effects as detailed in the BA (FHWA and NDOT 2018). The Service concurs with the determination that the proposed Project may affect, but is not likely to adversely affect cui-ui. Our concurrence is based on the project description and accompanying effects analysis provided in the BA (FHWA and NDOT 2108); in particular, the timing and location of the proposed Project make it unlikely that cui-ui will occur

near the action area during the time of in-river work. The reasoning for this is that cui-ui cannot migrate upstream of Derby Dam currently, over 20 miles downstream of the proposed Project location.

Therefore, unless new information reveals effects of the proposed action in a manner or to an extent not considered, or a new species is listed, no further consultation is necessary for this action for cui-ui. Thus, cui-ui will not be discussed further in this document. If analysis of nearby site-specific projects reveals that they may adversely affect this listed species, this would constitute new information requiring reinitiation of consultation. In addition, if planned passage projects occur prior to the proposed Project beginning, and there is evidence that cui-ui are migrating into metropolitan Reno, reinitiation of consultation would be an appropriate response.

In completing this biological opinion (BO), the Service utilized the following: (1) The BA, dated March 15, 2018, for the project (FHWS and NDOT 2018); (2) past section 7 consultations regarding relevant bridge and infrastructure projects in the immediate area; and (3) information and reference material located at the Reno Fish and Wildlife Office (Reno FWO).

Consultation History

Communication regarding the proposed Project began on March 22, 2017, when the NDOT contacted the Service; NDOT corresponded several times between March 2017 and March 2018 with the Service and other agencies regarding the proposed Project and the potential impacts to cui-ui and LCT (for more detailed information see Section 1.2.1 Informal Consultation History, FHWA and NDOT 2018). The consultation began on March 27, 2018 when the BA was officially received by the Service; it was officially due on August 9, 2018. However, the Service was unable to complete the consultation by then and officially communicated this with the NDOT on August 20, 2018 *via* a phone message. Communication between the Service and NDOT occurred again in response to an email sent by NDOT on September 4, 2018; the Service agreed with NDOT's request to complete this BO by the end of September 2018.

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DESCRIPTION OF THE PROPOSED ACTION

The entire interchange Project is scheduled to begin in 2019 and to be completed by 2035. The purpose of the Project is to upgrade the interchange system to accommodate a growing populace, which will reduce traffic and accidents on the highway. The NDOT are considering three preliminary project alternatives, with no preferred alternative currently identified. The only in-river work to occur as a result of the proposed Project, regardless of which final alternative is selected, is the removal of an existing bridge pier to the mudline; this bridge carries I-580 north- and south-bound traffic over Kietzke Lane and the Truckee River (Figure 1). This BO focuses only on the I-580 bridge pier removal and other bridge work that may affect LCT in and adjacent to the Truckee River and its riparian area; this work will require only one season (July 1 to

September 30) to complete [see Section 2.0 Proposed Action of the BA (FHWA and NDOT 2018)]. Then in-river work window of July 1 to September 30 avoids the majority of normal LCT migrating/spawning activities.

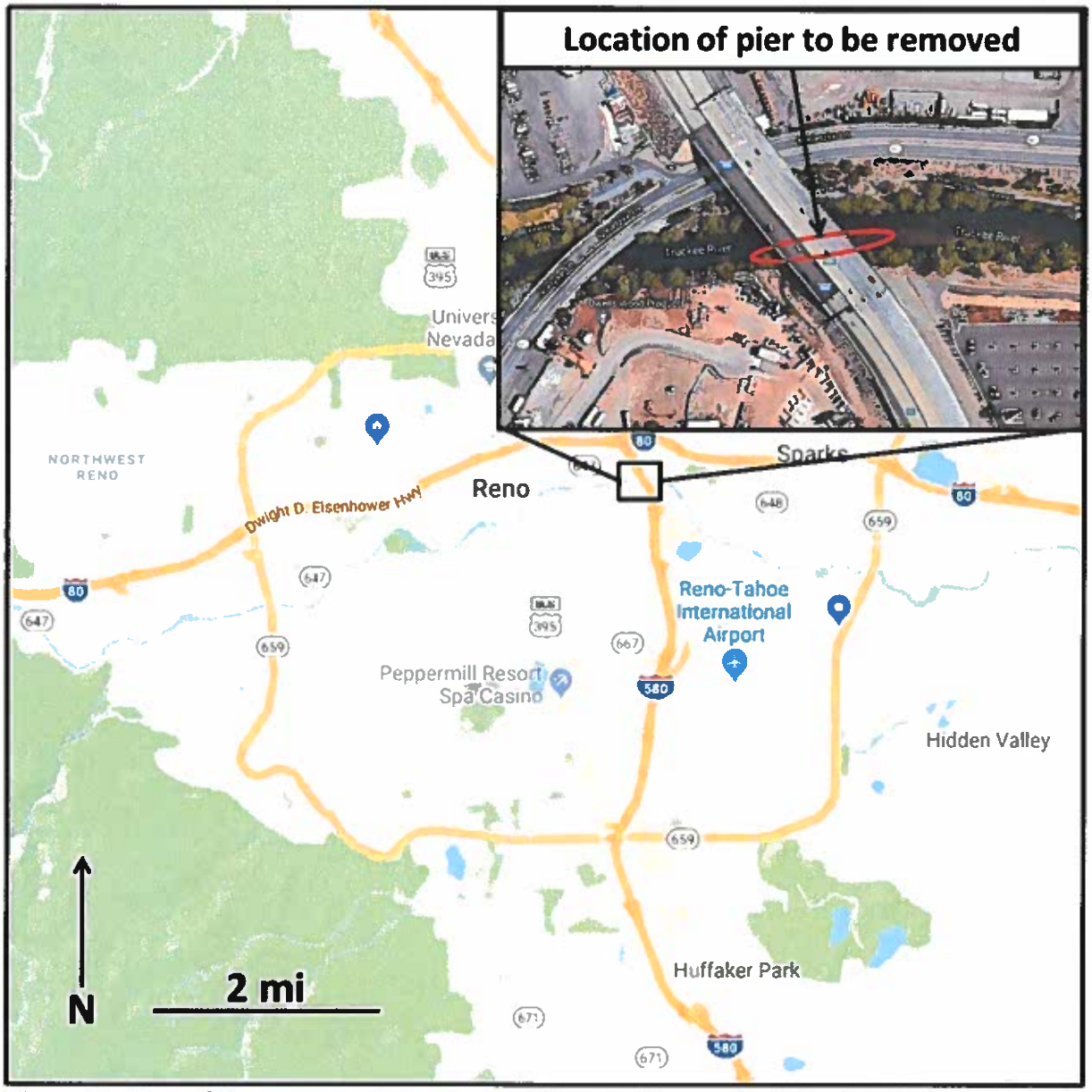

Figure 1. Map of Reno metropolitan area, with inset of image depicting location of bridge pier to be removed by the proposed Project.

The Project "action area" includes all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the proposed action (50 CFR 402.02). Therefore, the action area for this BO is the limits of the in-river work area and associated

riparian area, in addition to where effects of visual, noise, and vibration disturbances may extend upriver an additional 300 feet and sediment downriver extends an additional 2,600 feet (Service 2017).

Between 2019 and 2025, NDOT will select a year to schedule the removal of the existing pier within the Truckee River that supports the I-580 Bridge. Pier removal will require one season of in-river work including the diversion of the Truckee River from approximately half of the river channel to create a dry work zone around the existing pier. The in-river work area (area to be dewatered) is anticipated to be approximately 0.65 acre (28,000 square feet). To isolate the work area and to create the dry work zone, NDOT proposes to divert the stream by placing large sand bags with impermeable geotextile liners and/or precast concrete barrier rails on small, impermeable sand bags in the stream channel; this will require heavy machinery to enter the river and those machines will need space to operate (approximately 50 feet of additional buffer). Water will be drained out slowly (1 to 3 inches per hour) to reduce disturbance and turbidity and to allow fish, including LCT, to volitionally move from the dewatering section of stream. None-the-less, only half of the river channel will be impacted by the proposed Project.

The NDOT is proposing to salvage fish, including LCT, trapped within the dewatered work area, and those fish will be relocated to nearby suitable habitat. Experienced NDOT contractors will perform the salvage work through dip-netting and electrofishing, following National Marine Fisheries Service (NMFS) fish salvage protocols (NMFS 2000) to reduce impacts on all fish species.

To minimize the effects of the Project, NDOT is proposing all in-river construction to be timed to avoid potential LCT spring migrating and spawning activities; in-river construction activities would be scheduled from July 1 through September 30. In addition, all equipment used in or near the in-river work area would be fueled at least 100 feet from the river and spills would be addressed in accordance with standard spill control procedures as described in the BA (FHWA and NDOT 2018). All equipment in or near the in-river work area will also be pressure washed off-site to remove accumulated grease and oil from the machinery, as well as minimize the potential introduction of non-native plant and invertebrate species. Lastly, the contractor will be made aware of New Zealand mudsnails and provided a protocol to reduce the risk of spreading this non-native species within the Truckee River and to other waterbodies.

A full list of Project regulatory requirements, including a Storm Water Pollution Prevention Plan (SWPPP), water quality monitoring/sampling plan, and best management practices (BMPs) can be found within Section 2.2 Regulatory Requirements and Best Management Practices of the BA (FHWA and NDOT 2018), and terms to be included in the U.S. Army Corps of Engineers'(ACOE) permit are forthcoming. Briefly, the NDOT will require the use of a suite of BMPs to ensure the minimization of pollutant/chemical discharges, degradation of water quality, the potential spread or introduction of non-native plant and animal species, streambank disturbance and destabilization, and degradation of riverine habitat within the Truckee River during the proposed action. This includes appropriate BMPs to ensure that bridge deck work does not result in debris/material entering the Truckee River. In addition, the Project will be monitored through a water sampling program that will document the implementation and

effectiveness of the Project's BMPs. A water quality monitoring program that meets Nevada Division of Environmental Protection's (NDEP) state water quality standards for turbidity will occur; daily samples will be taken from one upriver and one downriver sampling location when in-river work occurs. If turbidity at the downriver location exceeds 10 nephelometric turbidity units (NTUs) above turbidity at the upriver location, in-river work will cease; work can only continue after a subsequent downriver sample is below 10 NTUs above the upriver location and samples cannot be taken sooner than 15 minutes after the initial test. If a visible plume is generated during in-river construction activities, additional compliance sampling will occur immediately according to the above guidelines.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATION

Section 7(a)(2) of the ESA requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02).

The jeopardy analysis in this BO considers the effects of the proposed Federal action, and any cumulative effects, on the rangewide survival and recovery of the listed species. It relies on four components: (1) The Status of the Species, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the species..

STATUS OF LAHONTAN CUTTHROAT TROUT RANGEWIDE

Lahontan cutthroat trout is an inland subspecies of cutthroat trout endemic to the Lahontan Basin of northern Nevada, eastern California, and southern Oregon (Behnke 1979, 1992). Lahontan cutthroat trout inhabit lakes, rivers, and streams, and are obligatory river/stream spawners. Generally, adults migrate to spawning sites and spawn from April through July, depending on a variety of environmental conditions (Service 2009). Lahontan Cutthroat trout pair up, display courtship, lay eggs in redds (nests), and chase intruders away; eggs hatch from 4 to 6 weeks, and fry (recently hatched fish) emerge from redds in 13-23 days (Lea 1968; Rankel 1976). Fry seek refuge upon emergence along shoreline within gravel/cobble or other cover; by early fall, fry have developed into fingerlings (2-3 inches), which may school together in shallow pools (Service 2009). Generally, recently emerged fry from lacustrine-adapted LCT populations tend to move out of spawning sites and into lakes shortly after emergence (Cowan 1991; Rissler *et al.* 2006). However, it is known that LCT can remain in nursery rivers/streams, if suitable stream flow and temperature is present, for a prolonged period of time.

Lahontan Cutthroat trout was federally-listed as endangered on October 13, 1970 (Service 1970), and reclassified as threatened under the ESA on July 16, 1975, to facilitate management and allow regulated angling (Service 1975). The combined impacts of loss of habitat, non-native fish species introductions and management, and habitat fragmentation were the primary reasons LCT were listed and remain threatened (Service 2009). Currently, LCT are found throughout their historical range (most of northern Nevada, a portion of southern Oregon, and portion of the eastern Sierras in California) with the exception of the Susan River watershed, albeit in a very fragmented way, occupying less than 10 percent of the historical habitat. The main objectives of recovery for LCT rangewide are to remove, manage, and/or minimize impacts from non-native species, improve water quality and flow, restore and reconnect suitable habitats, and reintroduce resilient populations into historically occupied waters (Service 1995).

The following information is summarized from the Recovery Plan for the Lahontan Cutthroat Trout (Service 1995). Rangewide, this species is still threatened by loss of habitat, non-native species introductions and management, and habitat fragmentation, but some progress has been made to recover LCT. Within Pyramid Lake and the Truckee River, LCT was very abundant historically, and the largest population rangewide was found there. Large-scale commercial fishing operations harvested 100,000s of pounds of LCT annually starting in the mid-19th century. In addition, upriver storage and diversions of water in the Truckee River began to reduce inflow to Pyramid Lake, slowly reducing the lake elevation. Several dams were constructed in response to growing demands for water for agricultural, municipal, and industrial purposes. In response, insufficient flows over the river delta to Pyramid Lake to attract spawning LCT, in addition to reduced water and habitat quality due to channelization, low flows, high stream temperatures, and timber harvesting and grazing along the river, resulted in large declines of the remaining LCT population due to significant reductions in the number and timing of spawning runs. Lastly, industrial and sewage waste were dumped directly into the Truckee River until the 1930s. These combined effects resulted in the extirpation of the LCT endemic to Pyramid Lake and the mainstem of the Truckee River by 1944.

After the extirpation of LCT from Pyramid Lake, several different strains of LCT (not endemic to Pyramid Lake) were stocked in the lake into the 1980s to provide sport fishing opportunities (Coleman and Johnson 1988). In the late 1970s and 1980s, stocking of non-Pyramid Lake strain LCT continued, however, natural reproduction did not occur (Sigler *et al.* 1983). During this time, researchers begin to study a population of LCT that had been stocked in streams in the Pilot Peak mountain range of Utah several decades before; it was thought that these fish were transplanted to this area from Pyramid Lake because they had similar physical traits as the endemic Pyramid Lake strain and it was commonplace to translocate fish in the late 1800s and early 1900s. A description of the majority of the genetic research related to Pyramid Lake LCT can be found within the Short-Term Action Plan for LCT in the Truckee River Basin (Truckee River Basin Recovery Implementation Team 2003). It was confirmed through a variety of genetic techniques that the LCT translocated to the Pilot Peak mountain range in Utah were most closely related to fish extirpated from the Pyramid-Truckee-Tahoe system through comparison with historical museum and archive collections. Beginning in the early 2000s, the Lahontan National Fish Hatchery Complex (LNFHC) began producing this strain for stocking of Pyramid Lake. Throughout this time, improvements to water storage and management, water and habitat

quality, water availability, and dam facilities created the opportunity for LCT to spawn in the lower Truckee River again for the first time since before 1944. Since 2014, LCT has been regularly migrating out of Pyramid Lack to spawn in the lower river below Derby Dam, which is currently an upstream barrier to fish migration. Lahontan cutthroat trout will likely rely on the action area to complete a portion of its life cycle once fish passage over Derby Dam is accomplished, which may occur as early as 2022. However, the exact completion date of the planned passage projects is still unknown; if all of these projects are completed before the proposed Project begins, LCT from Pyramid Lake will have the ability to migrate and spawn within the proposed Projects action area.

ENVIRONMENTAL BASELINE

Status of the Species in the Action Area

Over the last decade, LCT has been stocked in the Truckee River from Crystal Peak Park (Verdi, NV) downriver to the Wadsworth Bridge (Nixon, NV) for recovery purposes and recreational angling. Currently, up to 70,000 LCT are allocated for stocking annually in April and/or May (water flow dependent) from Crystal Peak Park downriver to McCarran Ranch (approximately 31 miles of the river) and anglers are regularly catching these fish throughout the summer months into the early fall. However, sampling events by the Nevada Department of Wildlife (NDOW) and the Service have only rarely detected LCT throughout this area, which indicates that the majority of the fish may move up or downriver where possible, or do not survive. However, LCT are present in the action area, especially following annual stocking events, and can be present throughout summer and into the fall. Lastly, although some suitable spawning substrates exist in this section of the Truckee River, there is currently no evidence that natural spawning is occurring in the action area. Therefore, because spawning is not known to occur as of today in this area of the Truckee River, redds, young-of-year (YOY), or juvenile LCT are not expected to occur in the action area; however, due to planned passage projects in the future, there is the potential these life stages could occur in the river at the time the proposed Project begins.

Factors Affecting the Species within the Action Area

The following summary is derived from Section 3.0 Existing Environment of the BA (FHWA and NDOT 2018), which includes some information regarding the habitat characteristics, and other resources within the action area. In short, the natural vegetation communities associated with the Truckee River are disturbed and altered due to urban, agricultural, and industrial land use activities spanning 15 miles upstream and more than 30 miles downstream of the Project action area. Vegetation consisting of several riparian species are intermittently dispersed along the river channel. The river and riparian area in the immediate vicinity of the proposed Project is altered due to the existing bridge infrastructure footprint and surrounding urban development, including a large freeway interchange overhead.

The existing pier structure supports a highway in the center of a medium-sized metropolitan area. In-river habitat in the immediate area is degraded and lacks complexity; the river channel is heavily armored at the bridge and throughout the metropolitan area. However, many locations up

and downstream of the Project action area are high quality fisheries, with high use by recreational anglers. In addition, restoration work has occurred up and downstream of the Project action area over the last several decades, which has improved water quality and quantity, as well as habitat quality. Thus, increases in fish abundance, including LCT, in the Reno metropolitan area have occurred over the last several years.

EFFECTS OF THE ACTION

The NDOT is proposing activities that have the potential to disturb, injure, or kill LCT. Because of the current status of LCT within the action area, only sub-adult and adult LCT are the life-stages likely to be affected by the proposed action.

The following analysis describes the activities that may affect the sub-adult and adult LCT that potentially occur in the action area.

Effects of In-river Work

Lahontan cutthroat trout could be disturbed, crushed, pinched, or buried by heavy machinery when entering the river during the installation or removal of the temporary diversion structures. This species generally orients to the substrate to hold and hide in interstitial spaces, making them susceptible to being disturbed, crushed or buried. This may result in disturbance, injury, or death of any LCT present at the time of the work. Given that sub-adult and adult fish are the only life-stages anticipated to be present, it is likely that many of them will simply swim away when in-river work begins. However, any LCT that do not move and instead hide in interstitial spaces of rocks or debris may be crushed or buried by heavy machinery during installation/removal of the temporary diversion structures.

River dewatering activities could trap or strand LCT within the diversion structures. Although the diversion area will be slowly dewatered to facilitate the volitional movement of fish out of the area, reducing the likelihood of injury or mortality, some LCT may still be trapped in pools or stranded on the riverbed. To reduce the number of LCT trapped, stranded, or killed through dewatering, the NDOT will salvage fish, including LCT, by dipnetting or electrofishing them out of the pools and moving them to suitable habitat up or downstream of the dewatered area. The Service believes that the disturbance, injury, or death of stranded LCT from dewatering and associated fish salvaging activities is minimized by Project timing, when fewer fish are likely to occur in the action area, and by proper salvaging techniques to remove any fish that do not volitionally move.

In-stream activities may disrupt LCT passage until stream diversion activities are completed. However, the effects of this disruption are expected to result in only temporary, minimal effects on LCT migration, feeding, or sheltering activities, because NDOT proposes to maintain fish passage in half of the river during construction activities.

Effects of Sediment

Turbidity is the measure of the relative clarity of water and it increases with increasing sediment loads. Silt and sand may be mobilized during the installation and/or removal of the diversion structures and the dewatering and rewatering of the work area, which could increase turbidity within the action area. In addition, removal of trees and shrubs and recontouring of the banks to provide access to work areas will temporarily destabilize sections of the riverbank, potentially adding sediment to the river.

The introduction of sediment and resulting increase in turbidity can have multiple levels of effects on aquatic animals, especially fish (Table 2). High (acute) levels of turbidity can have lethal effects on LCT, while sustained, moderate (chronic) levels can cause reductions in feeding success, growth, survival, resistance to diseases, habitat availability, or the ability to home or migrate (Newcombe and Jensen 1996; Lloyd *et al.* 1987). Bash *et al.* (2001) further summarizes the effects of turbidity on salmonid populations through physiological, behavioral, or habitat effects. Physiological responses to increased turbidity include gill trauma, and alteration of blood chemistry and osmoregulation, all of which may result in death to decreased reproduction and growth rates, with subsequent population declines. Behavioral responses include avoidance, breakdown of territoriality, homing, and migration, and a reduction in feeding rates due to multiple factors related to habitat effects. Lastly, habitat effects of increased turbidity include: increased embeddedness, reduction in habitat complexity and abundance, and loss of refugia, all of which can subsequently contribute to decreased primary production, loss of spawning habitat, and reductions in prey abundance and diversity.

Table 2. Summary of adverse effects to fish resulting from elevated sediment levels.

Impact Type	Description
Gill trauma	Clogs gills which impedes circulation of water over the gills and interferes with respiration. This can also affect blood chemistry and osmoregulation.
Prey base	Disrupts both habitat for and reproductive success of macroinvertebrates and other fish that spawn and rear downstream of the construction activities.
Feeding efficiency	Reduces visibility and impacts feeding rates and prey selection, reducing growth rates.
Habitat	Fills pools, simplifies and reduces suitable foraging, spawning, rearing, and refuge habitat.
Physiological	Increases stress, resulting in decreased immunological. competence, growth, and reproductive success.
Behavioral	Results in avoidance and abandonment of preferred habitat, which can result in a variety of effects.

The Service anticipates several pulses of sediment, and subsequently increased turbidity, during the installation and removal of the temporary diversion structures and the dewatering and rewatering activities. The Service also expects that runoff from disturbed riparian and upland

areas and water seepage from the dewatered in-river work areas will also contribute additional sediment to the action area. It is expected that some Project-generated sediments may be transported downstream of the in-river work area, but will largely be contained due to regulatory requirements (SWPPP and BMPs, including silt screens, impermeable geotextile liners, and daily water quality monitoring during in-river construction, and meeting NDEP's water quality standards) as well as occurring during lower-flow conditions. It is also important to note that timing, intensity, natural background conditions, and a variety of others factors, including differences in the ability of LCT to withstand certain levels of turbidity, all influence the overall effect of increased turbidity on this species. Because NDOT will minimize the amount of sediment suspended in the steam column through their dewatering and project minimization measures, the Service does not anticipate that the effects of sediment generated will have lethal or chronic effects on sub-adult or adult LCT. In addition, LCT are expected to swim to other suitable habitat nearby to avoid the acute effects of increased sedimentation.

The proposed Project may introduce sediment that settles into sub-adult and adult holding and hiding habitat. Lahontan cutthroat trout generally require cool, clear water that is relatively silt-free in river or stream habitats; optimal habitat contains a 1:1 pool-riffle ratio, with both rocky riffle-run and slow, deep areas that contain abundant in-stream cover, well vegetated banks, and a consistent water supply (Bjornn and Reiser 1991; Hickman and Raleigh 1982).

Sediment-producing activities, as described above, will result in temporary disturbance of the stream channel, but are not expected to result in long-term impacts to in-river conditions. Since the river will be slowly released out of and back into the dewatered section, the amount of sediment that is suspended and then settles into the substrate will be small. It is expected that high seasonal flows the next winter/spring will wash and redistribute any deposited sediment downstream, resulting in no discernable effects to sub-adult and adult holding or hiding habitat. Only small, temporary reductions in food and habitat availability for LCT are anticipated to occur in the in-river work area and immediately downriver of the diversion structure, and the Service expects conditions to return to baseline within a few weeks of project completion, as river flow quickly reintroduces aquatic organisms back into the dewatered section.

Other construction projects that disturb stream or river banks have demonstrated that increases in turbidity can adversely affect species up to 2,600 feet downstream from the disturbance location (Foltz *et al.* 2008, 2013). However, impacts of turbidity likely will not occur beyond approximately 1,300 feet downriver (Foltz *et al.* 2008, 2013) due to the NDOT's regulatory requirements that decrease the amount of sediment and turbidity, such as dewatering of the impacted area/sediment source, implementation of SWPPP and other BMPs, and the natural settling of sediment. Also, NDOT will monitor sediment columns to ensure that NV state water quality standards are not exceeded. Therefore, there is very little likelihood that sediment concentrations will be intense enough or of long enough duration to cause adverse biological affects to LCT. Also, any sub-adult and adult LCT in the action area will likely swim away from a sediment plume to avoid being directly impacted, as stated previously.

While some effects may occur to habitat in the short-term, the river will remain unchanged from the proposed removal of the pier structure in the long-term. Lastly, improved interchange/ highway infrastructure due to the proposed Project will likely benefit LCT habitat in the long-term through improved water quality due to better storm-water conveyance and reduction in road contamination runoff.

Effects of Toxic Chemicals

Chemical or toxin contamination could occur from a variety of sources during the subsequent dewatering and rewatering activities, in-river pier removal, and bridge deck construction. First, the construction could result in the disposition of asphalt or other construction-related materials or toxins into the river from the bridge deck. Next, sediment laden with toxic fuels or trace metals could be mobilization during installation and removal of temporary diversion structures and dewatering/rewatering activities. In addition, accidental release of pollutants from heavy equipment (*e.g.* petroleum products) or along channel banks could also contaminate the action area. Lastly, groundwater that could contain contaminants is expected to seep into the work area after initial dewatering.

Chemical or toxin contaminants can have numerous effects on aquatic animals, especially fish. Much is known about the effects of containments on salmonids (*e.g.,* LCT) and other fish. In general, the effects of heavy metal or petroleum contamination are similar for all fish species due to the fact that many of their sensitive organs are in constant contact with their environment. A review of the effects of heavy metals on salmonids by Price (2013) indicates that heavy metals can have a variety of effects on individuals, from death (lethal exposure) to reductions in swimming speed, feeding rates, predation success, territoriality, growth and reproduction rates, olfaction, and impairment of development, mobility, and cellular functions over time (sublethal exposure). Similarly, a variety of effects, from lethal to sublethal, occur to fish when exposed to varying levels of petroleum contamination (Malins 1977).

Although trace elements and metals have been found in the Truckee River (likely a result of past mining and sewage treatment activities) (NDOT 2017), a high level of uncertainty in whether or not contaminates exist in the immediate work area makes it difficult to discern expected levels of exposure from the proposed Project. The Service anticipates that exposure to toxic chemicals that could negatively affect LCT may occur from this type of project. To reduce this potential, the NDOT will implement the aforementioned regulatory requirements, SWPPP, and BMPs. With BMPs in place, the Service anticipates only short-term, sublethal effects to a small number of sub-adult and adult LCT to occur. Once again, because these effects are temporary in nature and not chronic, most fish, including LCT, will likely swim away to avoid acute effects and return when conditions improve.

Effects of Fish Displacement

Fish, including LCT, may be displaced due to visual, noise, and vibration disturbances from a variety of mechanisms. Partial and full barriers to fish movement have been recognized as one of the main reasons for listing LCT (Service 1995). Displacement from spawning or migratory

habitat can result in disruption of LCT life-cycle, which can result in a variety of effects, including: reductions in survival, abundance, and reproduction, as well as the potential of long-lasting genetic effects that are difficult to discern. Displacement of LCT from visual, noise, and vibration disturbances could occur, but are unlikely to adversely affect LCT due to the urban setting (*i.e.*, species existing in the action area are already accustomed to disturbances) and lower levels and short duration of noise/vibrations associated with this particular type of project. Passage for LCT will be maintained in half the river channel at all times during in-river work allowing for their movement out of the action area. While LCT may be displaced, the Service does not expect adverse effects to result due to LCT's ability to flee the disturbance to other suitable habitat nearby. Also, LCT displacement will only occur for a short period of time (July 1 – September 30) and will be temporary.

Summary of Effects

The potential effects of the proposed Project on LCT analyzed in this BO include disturbance, injury, and death. The likely effects include crushing or burying of LCT thus injuring or killing them while installing or removing temporary stream diversion structures, and killing or injuring them during fish salvage activities. Although sediment and toxic chemicals may enter the stream, and LCT may be temporarily displaced during stream diversion activities, the proposed minimization measures will result in insignificant or discountable effects on LCT because LCT are likely to move away from those temporary and short in duration impacts.

Additionally, because in-river work will occur during July 1 through September 30, when habitat conditions may limit the number of LCT that could occur in the project area, these effects will impact less individuals. The Service anticipates that adverse effects of the proposed action will only occur in the short-term and will not result in population-level impairment.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this BO. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the ESA.

The action area is within the metropolitan area of Reno, Nevada. Beyond the proposed Project, the State of Nevada has no scheduled or planned projects within the action area that are reasonably certain to occur. However, the City of Reno and Washoe County will continue to maintain local infrastructure (roads and river trails) to support the existing and growing populace. Fishing within the Truckee River is regulated by NDOW, and annual stocking of LCT and other trout species to support the recreational fishery is expected to continue. The cumulative effects associated with the described future activities, combined with the effects of the proposed action, are not expected to result in measureable effects to LCT in the action area.

CONCLUSION

The conclusion of this BO is based on full implementation of the of the Project regulatory requirements, including a SWPPP, water quality monitoring/sampling plan, and BMPs as presented in the BA (FHWA and NDOT 2018), and the forthcoming terms to be included in the U.S. Army Corps of Engineers'(ACOE) permit.

After reviewing the current status of LCT, the environmental baseline for the action area, the effects of the proposed Federal action, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of LCT. No critical habitat has been designated for this species; therefore none will be affected.

We base our conclusion on the following:

1) The reduction of several LCT is inconsequential to overall species survival and recovery because the loss of relatively few, non-reproducing sub-adult or adult LCT will not affect the overall population.

2) Although the proposed action will likely displace LCT temporarily from the action area, LCT passage will be maintained throughout the construction period. In addition, the proposed Project will likely result in improved habitat condition in the long-term by upgrading the interstate infrastructure.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

In June 2015, the Service finalized new regulations implementing the incidental take provisions of section 7(a)(2) of the ESA. The new regulations also clarify the standard regarding when the Service formulates an Incidental Take Statement [50 CFR 402.14(g)(7)], from "...if such take may occur" to "...if such take is reasonably certain to occur." This is not a new standard, but

merely a clarification and codification of the applicable standard that the Service has been using and is consistent with case law. The standard does not require a guarantee that take will result; only that the Service establishes a rational basis for a finding of take. The Service continues to rely on the best available scientific and commercial data, as well as professional judgment, in reaching these determinations and resolving uncertainties or information gaps.

Additional regulations adopted in 2015 allow for Incidental Take Statements to rely on the use of "surrogates" for estimating the amount of take that is reasonably certain to occur as a result of the proposed action in certain circumstances. To use a surrogate to estimate take, the following criteria must be met: (1) the Incidental Take Statement must describe the causal link between the surrogate and the take of the listed species; (2) the Incidental Take Statement must explain why it is not practical to express the amount or extent of anticipated take or to monitor take-related impacts in terms of individuals of the listed species; and (3) the Incidental Take Statement must set a clear standard for determining when the level of anticipated take of the listed species has been exceeded.

We anticipate that LCT could be taken as a result of the proposed action. We expect that incidental take to be in the form of harm due to injury or killing of some sub-adult and adult LCT. Harm due to injury and death is anticipated as a result of in-river work (*e.g.*, entering the river with heavy machinery, placing diversion structures, dewatering, salvaging) that my crush, bury, strand, capture, or otherwise directly injure or kill individual LCT.

We cannot quantify the precise number of LCT that may be taken as a result of the proposed action because surveying fish in the Truckee River is challenging due to the size and clarity of the river. In addition, predicting river conditions (i.e. temperature, flow) at the time of the proposed action is not possible because of the unpredictable nature of seasonal snow pack, rains, and temperatures. Moreover, the presence of LCT within the action area is a relatively new phenomenon even when river conditions are appropriate, and an adequate data set over time does not currently exist. Finding a dead or wounded LCT as a result of the Project would be difficult and unlikely (*e.g.,* fish may be crushed and killed, and then swept downriver without being seen). Consequently, we are unable to reasonably anticipate the actual number of LCT that would be taken by the proposed Project.

Since we are unable to reasonably estimate the number of individual LCT that will be incidentally taken, the Service is providing a surrogate measure for take. The surrogate measure for take is based on the following:

> The area where LCT could be crushed, buried, stranded, captured, or otherwise directly injured or killed: 54,625 square feet or 1.25 acres = (area of upstream diversion + area of diversion under bridge + area of downstream diversion) with the addition of a 50-foot wide buffer around diversion area to allow for heavy machinery to place materials and for slight shifting of diversion structure depending on conditions; this calculation is assuming an average Truckee River width of 130 linear feet (Figure 2).

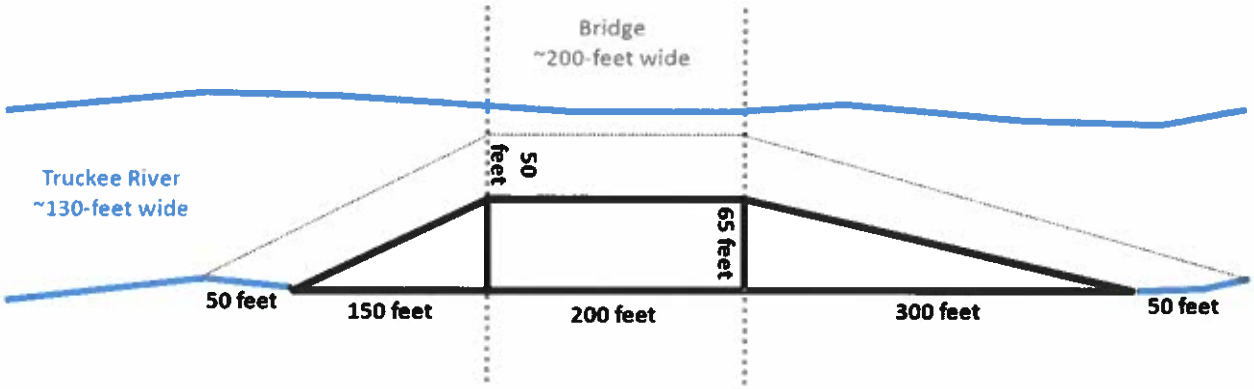

Figure 2. Graphic depicting the measurements used to calculate the area where LCT could be harmed or killed as a result of the proposed action. Note: not to scale.

EFFECT OF TAKE

In the accompanying BO, the Service determined that this level of incidental take is not likely to result in jeopardy to LCT. No critical habitat has been designated for this species; therefore, no destruction or adverse modification of critical habitat will occur.

The reasonable and prudent measures listed below, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action.

REASONABLE AND PRUDENT MEASURES

The measures described below are non-discretionary, and must be undertaken by the NDOT or made binding conditions of any grant or permit issued to a NDOT contractor, as appropriate, for the exemption in section 7(o)(2) to apply. The NDOT has a continuing duty to regulate the activity covered by this incidental take statement. If the NDOT, (1) Fails to assume and implement the terms and conditions, or (2) fails to require the consultant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impacts of incidental take, NDOT must report the progress of the action and its impacts on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The Service believes the following Reasonable and Prudent Measures (RPMs) are necessary and appropriate to minimize the impacts of the incidental take of LCT:

RPM 1. Integrate all BMPS, conservation measures, and minimization measures described in the BA (FHWA and NDOT 2018).

RPM 2. Monitor and report in compliance with the Terms and Conditions (below).

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the ESA, NDOT must comply with the following Terms and Conditions, which implement the RPM described above, and outline reporting and monitoring requirements. These Terms and Conditions are non-discretionary.

To implement RPM 1, NDOT shall:

1. Implement all Project-related "Regulatory Requirements and BMPs" (FHWA and NDOT 2018).

2. Perform in-river construction activities only between July 1 and September 30.

3. Meet the water quality monitoring requirements of all applicable permits and certifications.

4. Immediately halt construction activities, and identify and rectify the sources of any violations in instances when permits or certifications are violated. The NDOT must implement corrective actions before construction activities can resume.

5. Ensure NMFS electrofishing guidelines (NMFS 2000) are used when salvaging LCT from the in-river work area.

To implement RPM 2, NDOT shall:

1. Implement all Project-related "Regulatory Requirements and BMPs" (FHWA and NDOT 2018).

2. Collect, analyze, and report data and results for identified water quality parameters of upriver and downriver turbidity levels during the construction season as specified (in terms of methods, timing, and sampling location) in the applicable water quality permits and certifications.

    - Daily reports will be provided to the Service *via* email to Sean Vogt (sean_vogt@fws.gov) within 24 hours in instances when the turbidity standards exceed applicable ACOE permits, or expected take. The report should include remediation measures implemented to reduce the Project's contributions.

    - Summary reports displaying results for all water quality parameters identified in applicable water quality permits and certifications.

3. Provide copies of all reports related to the proposed Project to the Reno FWO:

Field Supervisor
U.S. Fish and Wildlife Service
1340 Financial Boulevard, Suite 234
Reno, Nevada 89502
Telephone: (775) 861-6300

The Service expects that the take of LCT previously described will not be exceeded as a result of the proposed action. The RPMs, with their implementing Terms and Conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the Project, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the RPMs provided. The NDOT must immediately provide an explanation of the causes of the exceeded take and review with the Service the need for possible modification of the take statement of RPMs and Terms and Conditions.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), NDOT must report the progress of the proposed actions and the impact on the species to the Service as specified in this incidental take statement. The NDOT shall prepare a monthly report describing progress of the proposed Project, including implementation of the associated Terms and Conditions and impacts to LCT. A final report is to be submitted within 3 months after the proposed action is completed. The reports include the following:

1. The construction activities in terms of schedule and work completed;

2. Compliance with identified "Regulatory Requirements and BMPs" and their effectiveness;

3. Water quality monitoring results showing the Project's contributions during the construction in accordance with applicable water quality permits and certifications. The reports should specifically address Project contributions to turbidity and its attenuation throughout the action area over sampling events;

4. Deviations from proposed Project's design or procedures; and

5. Recommendations for changes to Project-related activities that could potentially reduce negative effects to LCT and their habitat to be implemented during ongoing or future projects.

DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), upon locating a dead or injured LCT, initial notification within 3 working days of its finding must be made by telephone and in writing to the Reno FWO (775-861-6300). The report must include the date,

time, location of the carcass, a photograph, cause of death or injury, if known, and any other pertinent information.

The NDOT must take care in handling injured animals and ensure effective treatment and care before release, and in handling dead specimens to preserve biological material in the best possible state, if applicable. Injured fish are to be documented and then released into suitable habitat outside of the in-river work area. Dead fish are to be disposed of according to local and State regulations.

REINITIATION NOTICE

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) The amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. If planned passage projects in the Truckee River are completed prior to the onset of this Project, and there is evidence that LCT are migrating into and spawning in the Reno metropolitan area, this would constitute new information that may affect LCT in a manner or to an extent not considered in this opinion. In addition, in instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact me or Sean Vogt at (775) 861-6330.

Sincerely,

Carolyn W. Swed
Field Supervisor

Cc:
Environmental Program Manager, Federal Highway Administration – Nevada Division, U.S. Department of Transportation, Carson City, Nevada
Northern Nevada Biological Supervisor, Environmental Services Division, Nevada Department of Transportation, Carson City, Nevada
Senior Program Manager, U.S. Army Corps of Engineers – Sacramento Division, Reno, Nevada

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Biological Assessment

Biological Assessment

I-80/I-580/US 395
Spaghetti Bowl Interchange Reconstruction
Washoe County, Nevada

Federal Highway Administration, Nevada Division

Nevada Department of Transportation

March 15, 2018

CONTENTS

Appendix

Figures

Tables

ACRONYMS AND ABBREVIATIONS

BA	Biological Assessment
BMP	best management practice
cfs	cubic feet per second
Corps	U.S. Army Corps of Engineers
DPS	distinct population segments
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FR	Federal Register
iPaC	Information, Planning, and Conservation System
LCT	Lahontan cutthroat trout
LID	low-impact design
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NNHP	Nevada Natural Heritage Program
NTU	nephelometric turbidity units
NZMS	New Zealand mud snail
Spaghetti Bowl Project	Spaghetti Bowl (I-80/I-580/US 395) Reconstruction Project
SWPPP	stormwater pollution prevention plan
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

1.1 PROJECT OVERVIEW AND NEED FOR THE PROJECT

The Spaghetti Bowl (Interstate 80/Interstate 580/U.S. Highway 395 [I-80/I-580/US 395]) is a freeway-to-freeway interchange that was constructed between 1969 and 1971, when Washoe County had a population of about 130,000 people. At that time, about 90,000 vehicles per day used the Spaghetti Bowl. In 2015, the combined population of Reno and Sparks was about 327,000 people and the population of Washoe County was about 435,000 people (U.S. Census Bureau 2016). About 260,000 vehicles per day used the Spaghetti Bowl in 2016, making it is the busiest interchange in northern Nevada.

The Spaghetti Bowl's 1960s-era design is obsolete for several reasons:

- **Interchange ramps are spaced too closely to one another.** Vehicles entering or exiting the freeway at these closely spaced interchanges must cross paths with other vehicles traveling in the same direction, sometimes across two or more lanes of traffic, which is referred to as weaving. In general, short "weave segments," like those found in the Spaghetti Bowl, result in increased congestion.

- There are five locations on I-80, I-580, and US 395 in and around the Spaghetti Bowl where a freeway lane ends. These "lane drops" are bottlenecks that cause congestion.

- There are four low-speed ramps in the Spaghetti Bowl that do not have the capacity to accommodate existing traffic volumes. These low-speed ramps are bottlenecks and are regularly congested during rush hour.

These deficiencies create congestion, contribute to a higher-than-average crash rate, and delay drivers. Based on data Nevada Department of Transportation (NDOT) prepared for the project's Draft Environmental Impact Statement there is on average one injury crash in or around the Spaghetti Bowl each day. The average delay for drivers is anticipated to increase by 53 percent between 2016 and 2040 if no improvements are made to the freeway system in the project area (Federal Highway Administration [FHWA] and NDOT 2016). The Spaghetti Bowl Reconstruction Project (Spaghetti Bowl Project) is designed to address the obsolete design of the interchange, improve safety, and reduce travel delays by eliminating lane drops, improving ramp spacing, and replacing the low-speed loop ramps with new ramps that have more capacity and allow safe travel at higher speeds.

The project area (which encompasses the area that proposed construction activities would occur within) includes the Spaghetti Bowl, each of the four legs of the freeway-to-freeway system, and 16 service interchanges that connect the freeways to local roads.

The project area is in Washoe County, Nevada, within the cities of Reno and Sparks and has the following limits:

- I-80 between Keystone Avenue on the west and McCarran Boulevard on the east, a distance of approximately 5 miles.

- I-580/US 395 between Meadowood Mall Way on the south and Parr Avenue/Dandini Boulevard on the north, a distance of approximately 7 miles (Figure 1).

Per the Bureau of Land Managements' Public Land Survey System, the project area falls within the following:

- Township 19, Range 19, Sections 1, 2, 10, 11, 25, and 36
- Township 19, Range 20, Sections 4, 5, 6, 7, 8, 9, 18, 19, 30, and 31
- Township 20, Range 19, Sections 25, 26, and 36
- Township 20, Range 20, Section 31

The proposed alignment is partially within the Truckee River floodplain, where I-580 crosses the Truckee River south of the I-80/I-580/US 395 interchange. This Biological Assessment (BA) addresses potential impacts on federally protected species resulting from the Spaghetti Bowl Project.

The lead agencies for this project are NDOT and FHWA.

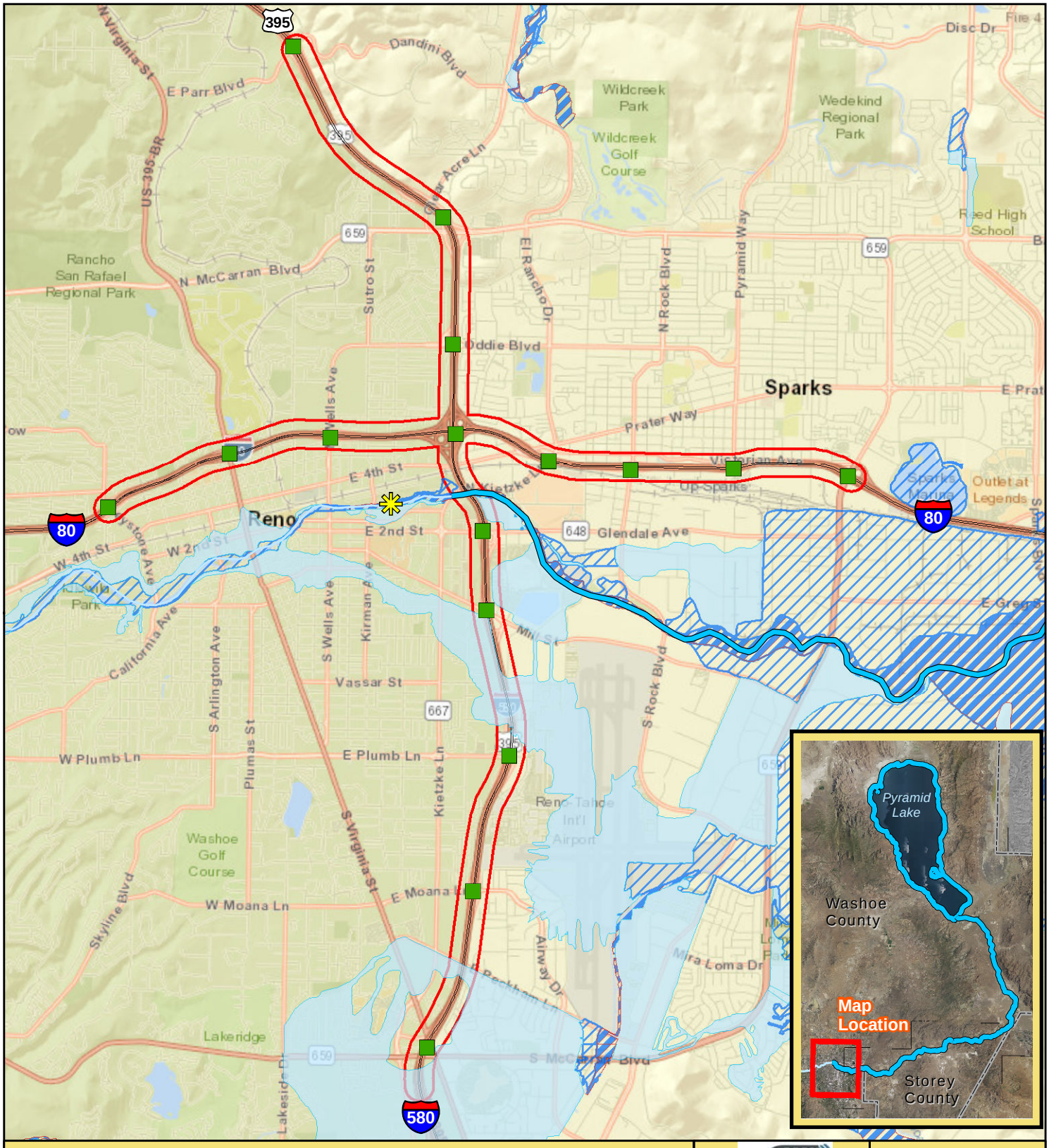
1.2 CONSULTATION HISTORY AND SPECIES COVERED

Under Section 7(c) of the Endangered Species Act (ESA), any federal agency (action agency) providing funding, oversight, or having the responsibility of issuing a permit(s) for the construction and/or operation of a "project" must consult with either the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (i.e., the regulatory agencies) to assess whether the actions of that federal agency would affect any federally listed species under the protection and management jurisdiction of those two regulatory agencies.

Section 7 regulations do not specifically refer to consultation "steps". However, the following steps provide a general guide to the structure of the consultation process that is detailed later in this section of the BA:

1. Once the project area is defined, the action agency or its representative (NDOT) requests or submits a "species list" from the USFWS to determine if a consultation is required.

2. The action agency determines if the proposed action may affect the Section 7 resource. If there is a "no effect," the process ends for that resource.



LEGEND:

- Truckee River/Pyramid Lake: Biological Assessment Action Area
- Gaging Station 10348000
- Project Interchange
- Project Area (500 feet from Project center line)

Flood Zone

- Floodway Areas in Zone AE
- Zone AE: 1% annual chance of flood
- Zone X: 0.2% annual chance of flood

SPAGHETTI BOWL PROJECT

Reno/Sparks
Washoe County
Nevada

FIGURE 1
PROJECT AREA

0 0.5 1
MILES

N

Data Sources: CH2M, NDOT

BASE MAP SOURCE: ESRI

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3. The action agency determines if the proposed action is likely to affect the Section 7 resource.

4. The action agency initiates consultation with the USFWS if the proposed action may affect Section 7 resources. The USFWS will then determine, through a Biological Opinion, if "reasonable and prudent alternatives" are required for the project or if "no destruction or adverse modification" will occur.

The FHWA will assist the project with federal funding. As a result, analysis and construction of the project requires Section 7 consultation with the USFWS. To fulfill this requirement, NDOT is preparing this BA for the FHWA to submit to the USFWS.

On May 22, 2017, June 5, 2017, and again on December 12, 2017, NDOT submitted a request for an official species list to identify potential ESA-protected species within the general vicinity of the project area through the USFWS's online Information, Planning, and Conservation System (iPaC) (see Table 1 and Appendix A for the December 12, 2017, listed species). According to the information in iPaC, five federally protected species may potentially occur within the general vicinity of the project area:

- North American wolverine (*Gulo gulo luscus*) – Federally listed as a Proposed Threatened species
- Cui-ui (*Chasmistes cujus*) – Federally listed as an Endangered species
- Lahontan cutthroat trout (*Oncorhynchus clarkii* ssp. *henshawi*) – Federally listed as a Threatened species
- Steamboat buckwheat (*Eriogonum ovalifolium* var. *williamsiae*) – Federally listed as an Endangered species
- Webber's Ivesia (*Ivesia webberi*) – Federally listed as a Threatened species

1.2.1 Informal Consultation History

- **3/22/17:** NDOT invited the USFWS to be a participating agency.
- **5/10/2017:** The USFWS replied to the NDOT invitation and indicated that the Lahontan cutthroat trout (LCT) is the only federally protected species under the ESA known to inhabit the project area.
- **5/31/17:** The June 5, 2017, species list was discussed with the USFWS for confirmation. Although it was originally thought that LCT was the only federally protected species known to inhabit the project area, the USFWS determined that LCT and cui-ui could be in the action

Table 1. ESA-Listed Species with Potential to Occur in the Project Area and Action Area

Common Name	Scientific Name	ESA Regulatory Status	General Habitat Description	Potential to Occur	Determination
Mammals					
North American wolverine	*Gulo gulo luscus*	Proposed Threatened	Occurs in mixed conifer, red fir, lodgepole forests. May also use subalpine conifer, alpine dwarfshrub, wet meadow, and montane riparian habitats. Prefer areas with low human disturbance. Shelters in caves, hollows in cliffs, logs, rock outcrops, and burrows, generally in denser forest stages. Dens in caves, cliffs, hollow logs, cavities in the ground, and under rocks.	None. There is no suitable habitat in the action area or project area. In addition, human activity in the project area likely precludes this species' presence. No known observations in the action area.	No Effect
Plants					
Webber's Ivesia	*Ivesia webberi*	Threatened	Shallow shrink-swell clay soils with a gravelly surface layer over volcanic, generally andesitic bedrock, on mid-elevation benches and flats.	None. There is no suitable habitat in the project area where ground-disturbing activities will occur. No known observations in the action area.	No Effect
Steamboat buckwheat	*Eriogonum ovalifolium* var. *williamsiae*	Endangered	The only known habitat is located in Steamboat Hills near south Reno. Found on young, shallow, poorly developed, dry soils derived from siliceous opaline sinter	None. There is no suitable habitat in the project area where ground-disturbing activities will occur. No known observations in the action area.	No Effect

Table 1. ESA-Listed Species with Potential to Occur in the Project Area and Action Area

Common Name	Scientific Name	ESA Regulatory Status	General Habitat Description	Potential to Occur	Determination
			precipitated by past thermal spring flows, in open areas with sparse *Atriplex confertifolia*, *Sarcobatus vermiculatus*, and *Chrysothamnus nauseosus*.		
Fish					
Lahontan cutthroat trout	*Oncorhynchus clarkii* ssp. *henshawi*	Threatened	Large terminal alkaline lakes, alpine lakes, slow meandering rivers, mountain rivers, and small headwater tributary streams. Known from drainages of the Truckee River, Humboldt River, Carson River, Walker River, Quinn River, and several smaller rivers in the Great Basin.	High. LCT are known to occur in the project area and action area, including the Truckee River and Pyramid Lake. Stocking of LCT is known to occur in the upper Truckee River.	May Affect, Likely to Adversely Affect
Cui-ui	*Chasmistes cujus*	Endangered	Only known to occur in Pyramid Lake and the lower Truckee River below Derby Dam, within the Pyramid Lake Paiute Reservation.	High. Cui-ui are not known to occur in the project area but are found downstream within the action area.	May Affect, Not Likely to Adversely Affect

Source: USFWS official species list letter, December 12, 2017

- area[1] or downstream of the project area; formal consultation would be appropriate for LCT and informal consultation would be appropriate for cui-ui (Simpson 2017a, Starostka 2017; see Appendix C). USFWS has not designated critical habitat for either fish species in the project area. Due to the presence of listed species in the action area that may be affected by the project, formal Section 7 consultation is required.

- **6/5/17:** NDOT confirmed that there is no habitat for North American wolverine, Webber's ivesia, or Steamboat buckwheat (Simpson 2017b; Appendix C). Therefore, a No Effect letter has been prepared to explain why consultation is not required for these three species (Appendix D) and they will not be discussed further in this BA.

- **6/7/17:** NDOT received a list of known occurrences of endangered, threatened, candidate, and/or at-risk plant and animal taxa recorded on or near the Spaghetti Bowl Project from NNHP (Appendix B).

- **7/11/2017:** USFWS determined that both LCT and cui-ui should be addressed with a formal consultation (Vogt 2017; see Appendix C).

- **11/3/17:** NDOT requested agreement from NDOW that the proposed list of NNHP sensitive species to be addressed for the Spaghetti Bowl Project is complete (Mengel 2017a).

- **11/28/17:** NDOW confirmed that the proposed list of NNHP-sensitive species to be evaluated is complete (Freese 2017; see Appendix C).

- **12/5/17:** NDOT, USFWS, and Nevada Department of Wildlife (NDOW) agreed that the in-stream work period will be from July 1 through September 31 to avoid fish spawning periods (Simpson 2017c; see Appendix C).

- **12/16/17:** NDOT requested clarification from USFWS on what chemical constituents in Pyramid Lake contribute to species decline (Mengel 2017b; see Appendix C).

- **12/17/17:** NDOT requested from USFWS a suggested rewatering rate that would apply after the river diversion is removed and if spawning gravel is placed in the dewatered area for natural redistribution downstream (Mengel 2017c; see Appendix C).

- **12/19/2017:** NDOT requested from NDOW the known distribution of LCT in the Truckee River (Mengel 2017d; see Appendix C)

- **12/19/17:** NDOW informed NDOT that the entire Truckee River is considered "occupied" LCT habitat below Mogul (Hawks 2017; see Appendix C).

[1] See Section 1.3 for the definition of the action area.

- **1/3/2018:** USFWS replied that spawning gravel would not be needed, that a 3-inch/hour dewatering and rewatering rate at the diversion is acceptable, and that total dissolved solids/alkalinity, natural mercury, and arsenic are constituents that have degraded Pyramid Lake (Vogt 2018a).

- **2/9/2018:** NDOT informally submitted the draft BA for an informal USFWS review by Sean Vogt.

- **3/6/2018:** Sean Vogt/USFWS, suggested NDOT conduct informal consultation on the cui-ui, instead of formal consultation as previously thought. In-river construction timing, as stated in the BA, minimizes the potential for direct or indirect impacts to cui-ui (Vogt 2018b).

1.3 ACTION AREA

The action area includes all areas that the federal action may directly or indirectly affect. It is not merely the immediate area involved in the action. The action area is the extent within which suspended sediments or reduced water quality might occur as a result of the project near or within the Truckee River, as well as the extent that impacts relative to noise from construction may extend above and beyond existing conditions. Project construction and operation could increase the amount of sedimentation and roadway constituents that enter Truckee River and Pyramid Lake. Any increase in sedimentation or other pollutants could affect water quality. Additionally, new impervious surfaces can alter the amount of flow to a water body, particularly during storm events, and may disrupt floodplain functions. Therefore, the action area for this project is the terrestrial and aquatic footprint of the construction activities (project area) as well as the aquatic habitat in the Truckee River beginning at the farthest upstream portion of the project area and continuing downstream to and including Pyramid Lake (Figure 2). Listed species of concern may occur both in the Truckee River and Pyramid Lake.

1.4 SUMMARY

The sections below provide descriptions of the following:

- Proposed action
- Biology and life cycle of LCT and cui-ui
- Existing environment of the action area
- Effects of the proposed action
- Determinizations of effects

LCT and cui-ui were evaluated relative to potential impacts and changes to water quality in the Truckee River and Pyramid Lake that may result from the project. Currently, LCT is the only federally listed species likely to be found in the Truckee River within the project area, but planned fish passage projects on the Truckee River will likely result in the presence of migrating LCT and cui-ui in the project area as migration in the river becomes possible (see Sections 4.1.2 and 4.2.2 for discussions of range and distribution of LCT and cui-ui).

It is expected that there will be temporary impacts on the quality of water entering the Truckee River and, potentially, Pyramid Lake during construction and until disturbed soils have stabilized. However, construction best management practices (BMPs) will be implemented to minimize the release of sediment and contaminants to the Truckee River to the greatest extent practicable. Water quality monitoring is discussed in Section 2.2.3, Water Quality Monitoring and Sampling Plan.

Operations of the project are expected to maintain or possibly improve water quality in the Truckee River and Pyramid Lake over the long-term by adding sediment basins and structural controls with low-impact design (LID) features that will treat, at a minimum, the water that passes over the added paved areas within the project area. Additional discussion of the proposed water quality facilities is provided in Section 5.1.2.1, Stormwater Operations.

LEGEND:

- Truckee River/Pyramid Lake: Biological Assessment Action Area
- Derby Dam
- Project Area (500 feet from Project center line)

SPAGHETTI BOWL PROJECT

Reno/Sparks
Washoe County
Nevada

FIGURE 2
BIOLOGICAL ASSESSMENT ACTION AREA

0 5 10
MILES

N

Data Sources: CH2M, USFWS NWI

BASE MAP SOURCE:USDA NAIP 2015

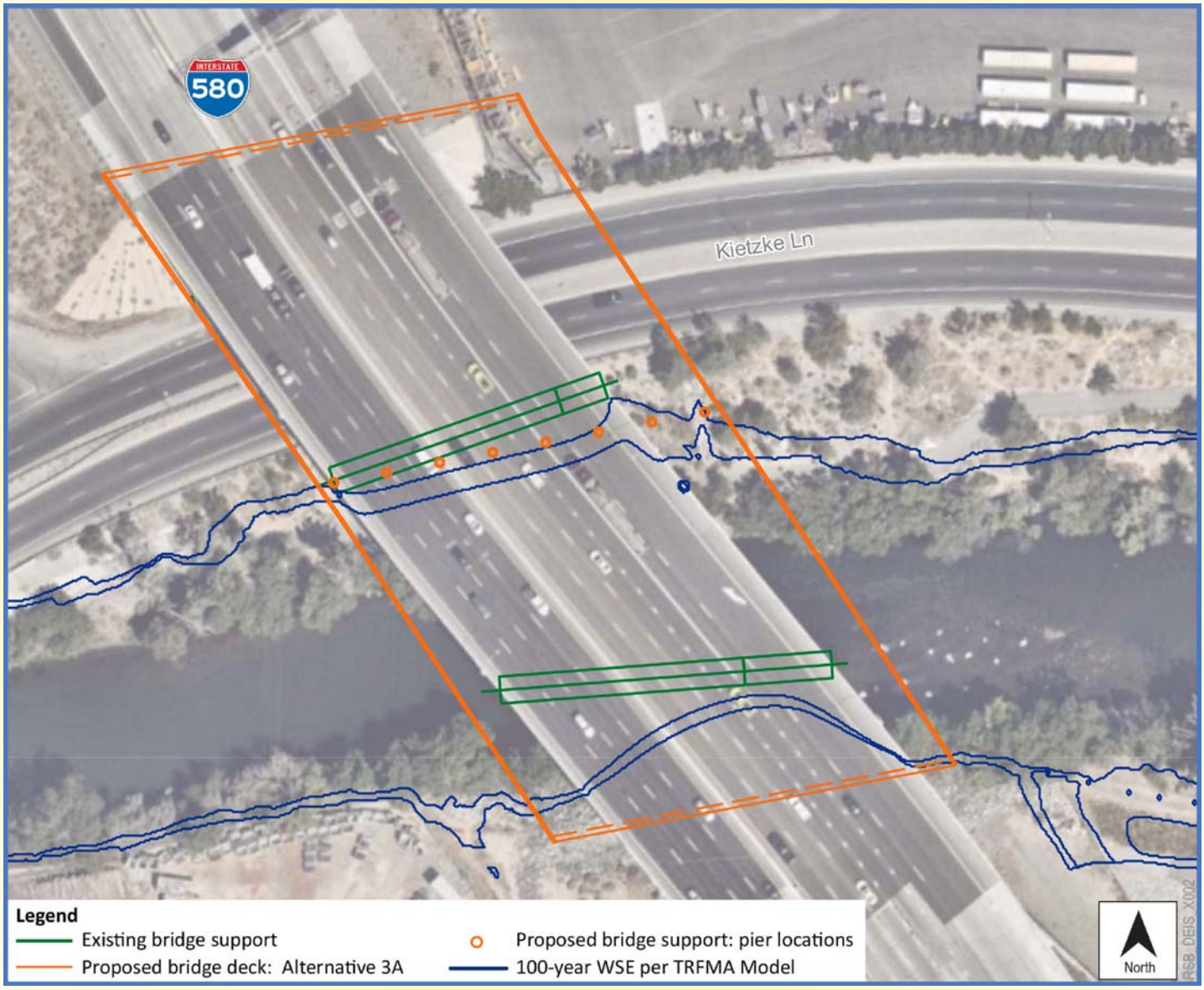
\\mspfpp01\Proj\684384_RENO_BowlGIS\MapDocs\T&E\REPORT_BAIFig2_RSB_8X11P_T&E_BioAssessActionArea.mxd CS031687 1/6/2018 4:44:54 PM

2.0 PROPOSED ACTION

NDOT and the FHWA are studying several alternatives along I-580/US 395 from the Meadowood Mall Way interchange on the south to the Parr Boulevard/Dandini Boulevard interchange on the north and along I-80 between Keystone Avenue on the west and McCarren Boulevard on the east. The alternatives would bring the freeway up to current standards, improve operations and safety, and increase capacity. They would also reduce travel delays in the I-80 and I-580/US 395 corridors and in the freeway-to-freeway interchange that connects these two freeways (known locally as the "Spaghetti Bowl"). Reconstruction of the interchanges could include new or modified ramps and frontage roads on new alignments.

2.1 DESCRIPTION OF PROJECT ELEMENTS

Three preliminary project alternatives are being considered and are presented on the following pages. A preferred alternative has not yet been identified. However, regardless of the final alternative chosen for construction, the only work proposed below the ordinary high-water mark would be the removal of the existing bridge pier to the mudline. The proposed bridge work would be consistent for all alternatives (Figure 3), and, therefore, all potential effects to listed species and effect determinations described in this BA would be the same for all three alternatives.



Reno/Sparks
Washoe County
Nevada

FIGURE 3
BRIDGE DECK EFFECTS

Data Sources: CH2M, NDOT

BASE MAP SOURCE:USDA NAIP 2015

2.1.1 Alternatives

2.1.1.1 Alternative 1

Alternative 1 would keep all existing access between the local roads and freeway system while maximizing traffic movement through the Spaghetti Bowl interchange by:

- Using longer sweeping ramps with more gradual curves to increase ramp speed (up to 50 miles per hour) in the Spaghetti Bowl. This would increase the footprint of the interchange compared to its current footprint.

- Reconstructing the Wells Avenue, Oddie Boulevard, Second Street/Glendale Avenue, Mill Street, Prater Way, Rock Boulevard, and Pyramid Way interchanges into configurations that "braid" (see inset for a description of braided ramps).

2.1.1.2 Alternative 2

Alternative 2 would modify the access between the local roads and freeway system, and it would reduce the project footprint compared to Alternative 1, by:

- Reconstructing the Spaghetti Bowl into a configuration similar to the existing configuration, including converting the south-to-east and north-to-west low-speed loop ramps to longer ramps with more gradual curves that allow higher speeds and increase capacity to meet or exceed the minimum design speed standards.

- Reconstructing the Wells Avenue and Oddie Boulevard interchange so that its on- and off-ramps are braided with the adjacent Spaghetti Bowl ramps. At these locations, freeway access would be limited to the freeway on which the interchange is located. The Oddie Boulevard interchange would provide access to US 395, and the Wells Avenue interchange would provide access to I-80.

- Reconstructing the Second Street/Glendale Avenue interchange and then braiding the ramps with the adjacent Spaghetti Bowl ramps and Mill Street ramps.

- Relocating the I-80/Fourth Street/Prater Way interchange and the Rock Boulevard interchange to Kietzke Lane and then braiding the Kietzke Lane interchange on- and off-ramps with the adjacent Spaghetti Bowl ramps.

- Reducing the Spaghetti Bowl's footprint compared to Alternative 1 by modifying interchanges and reducing on- and off-ramp connections.

2.1.1.3 Alternative 3

Alternative 3 would modify the access between the local roads and freeway system and reduce the project footprint compared to Alternative 1 and Alternative 2 by:

- Reconstructing the system interchange into a configuration similar to the existing configuration, while increasing capacity to meet or exceed the minimum design standards.
- Reconstructing the Wells Avenue, Oddie Boulevard, and Second Street/Glendale Avenue interchanges as partial clover loop ramp configurations to increase interchange separation between those interchanges and the Spaghetti Bowl.
- Eliminating the I-580/Fourth Street/Prater Way interchange to increase interchange separation from Rock Boulevard.
- Modifying the Mill Street interchange to access I-580 indirectly via frontage road connections to the Second Street/Glendale Avenue interchange to increase interchange separation from the Spaghetti Bowl and Plumb Lane.
- Reducing the project footprint, compared to Alternative 2 and Alternative 3, by modifying service interchanges to increase spacing and minimize the need for ramp braiding.

2.1.2 Construction Components

There is approximately 269 acres of impervious surface in the project area, made up of existing paved areas along the freeway and ramps. The proposed roadway alternatives would increase this paved area by as much as 22 percent. As discussed in Section 5.1.2.1, Stormwater Operations, most runoff discharged from the existing project area is untreated. Therefore, permanent LID structural controls would be provided to treat runoff in excess of this added paved area. Sediment basins would likely be the primary means to treat the additional paved infrastructure.

2.1.3 Operation Components

2.1.3.1 Stormwater System Design and Operation

A stormwater pollution prevention plan (SWPPP) would be developed before construction of the preferred alternative, meeting the requirements for NDOT, Nevada Division of Environmental Protection, and U.S. Army Corps of Engineers (Corps) Clean Water Act Section 404 and Section 401 permitting.

2.1.3.2 Summary of Hydrologic/Hydrology Changes

New bridge supports would be needed in overbank areas of the Truckee River. The supports would be built above the ordinary-high watermark, as defined by the Corps, during normal low-flow periods. NDOT would remove the existing I-580 bridge pier in the Truckee River to the mudline. There would be no water surface elevation increases in the Truckee River or adverse impacts on the established Federal

Emergency Management Agency (FEMA) floodway and flood zone. The project would ensure that Truckee River hydraulics meet the requirements to obtain Section 401 and Section 404 permits from the Corps. In addition, the project would provide permanent BMPs, in compliance with the NDOT's statewide Municipal Separate Storm Sewer System permit, to treat discharges resulting from the addition of impervious areas.

2.1.4 Truckee River Diversion

NDOT's contractor would develop a river diversion plan and dewatering plan and submit it to the USFWS, the Corps, and NDOT Environmental Services Division for review and approval at least 30 days before construction. Partnering agencies have 10 working days to respond if they have concerns.

The temporary river diversion would be installed to divert Truckee River flows from approximately half of the river channel (north or south), creating a dry work zone within the river channel around the existing pier. The estimated limits of the river diversion would begin 150 feet upstream and end 300 feet downstream from the existing in-stream pier. The in-river work period will be from July 1 through September 30.

In accordance with NDOT requirements, water isolated from the diverted river channel would be allowed to drain out of the in-stream work zone at a rate of 1 to 3 inches of water depth per hour. This slow release will allow isolated fish to move downstream and out of the in-stream work zone. A fish salvage operation coordinated by the contractor, with oversight by NDOT biologists, would remove all fish from the in-stream work zone during dewatering. Section 2.2.6, Biological Requirements, describes fish salvage operations. All equipment would be cleaned offsite before entering the river. All rock encountered onsite would be recycled, if feasible. Once work is completed (as described below), flow will be returned to the river at a rate of 1 to 3 inches of water depth behind the diversion per hour.

NDOT allows contractors to make design modifications to the dewatering plan based on current river conditions. However, the contractor will build upon a conceptual design developed by NDOT and presented in a BMP plan developed during the final design. It is anticipated that the temporary river diversion will be comparable to the common construction method of placing a portable precast concrete barrier rail on gravel bags, with an impermeable geotextile liner to seal off the work zone (nontoxic materials would be used, such as 10-mil polyethylene sheeting or similar). Large sand bags may also be considered as a diversion method, an approach that has proven effective on other river projects. The USFWS, Corps, and NDOT Environmental Services Division would review and approve the final design at least 30 days before construction. Partnering agencies have 10 working days to respond if they have concerns. Copies of the approved temporary diversion plan and the dewatering plan would be distributed to the appropriate federal and state agencies.

2.2 REGULATORY REQUIREMENTS AND BEST MANAGEMENT PRACTICES

2.2.1 Water Quality

To prevent accidental physical harm to cui-ui, LCT, or the riverine environment during construction activities, several water pollution control measures are required and would be performed in accordance with federal and state permit requirements (Table 2). In support of these permits, several water quality components and BMPs would be developed:

- SWPPP (stormwater pollution prevention plan)
- Temporary river diversion plan
- Water quality monitoring plan
- Temporary pollution control measures
- Permanent pollution control measures
- General housekeeping measures (fueling equipment would be included in these measures)
- Equipment cleaning prior to entering the river
- Spill prevention, control, and cleanup procedures

Table 2. Regulatory Permit Requirements

Permit Type	Issuing Authority	Responsible Applicant
CWA Section 404 Nationwide Permit(s)	Corps Reno Regulatory Field Office	NDOT
CWA Section 408 Authorization	Corps Sacramento District/ Carson Truckee Water Conservation District	NDOT
Construction General Permit (Construction Stormwater Permit)	Nevada Division of Environmental Protection and/or U.S. Environmental Protection Agency	Contractor
Temporary Working in Waterways Permit	Nevada Division of Environmental Protection	Contractor

2.2.1.1 Stormwater Pollution Prevention Plan

The SWPPP, which would be developed by NDOT's contractor, would identify potential stormwater pollution sources and appropriate BMPs to prevent or reduce, to the maximum extent possible, pollutant discharges to the Truckee River. The SWPPP would address the following areas:

- Erosion and sediment control
- Streambank stabilization
- Dewatering controls
- General housekeeping measures

2.2.1.2 Water Quality Monitoring and Sampling Plan

NDOT or its consultant would monitor the project as per a water sampling program and would provide a narrative report describing the project. The report would include photographs that document project activities, such as implementation of sediment and erosion management BMPs. The photographs would include "before, during, and after" documentation of the work, such as potential vegetation removal and bank stabilization activities. If required, bank stabilization activities would entail placement of riprap or other hard armoring. The photographs would be taken from established locations identified in the water sampling program. The photographs and the narrative report would be submitted to the USFWS and NDOT Environmental Services Division within 30 days of the completion of the project. Partnering agencies have 10 working days to respond if they have concerns. A record of the water quality sampling and analysis will be submitted to the NDOT Environmental Services Division monthly.

The NDOT-designated contractor will collect water quality turbidity samples in the Truckee River, at locations approved by NDOT, to comply with the monitoring requirements. One sample would be collected upstream from the work area and one downstream from the work area. Samples would be collected in the centroid of flow in the main channel of the river. Daily measurements in the river would be recorded in a log and copies included with daily monitoring reports. One background sample from upstream and one from downstream of the work area would be collected before work begins in the river. Daily samples would be collected upstream and downstream from the work area when there is active construction work in the river and stream zone. Sampling is not required when equipment is not in the river and no project work is occurring. Work would cease when turbidity at the downstream sampling location is 10 nephelometric turbidity units (NTU) greater than the turbidity level at the upstream sampling location and would not resume until a subsequent test indicates turbidity level is less than 10 NTU above the turbidity level at the upstream sampling location. Subsequent tests would occur no sooner than 15 minutes after the initial test.

If a visible sediment plume is generated during the initial river diversion setup, compliance sampling would occur at the downstream sampling location. Work would cease when turbidity at the downstream sampling location is 10 NTU greater than the turbidity level at the upstream sampling location and would not resume until a subsequent test indicates the turbidity level is less than 10 NTU above the turbidity level at the upstream sampling location. Subsequent tests would occur no sooner than 15 minutes after the initial test.

If a visible plume is generated after the initial river diversion setup, a grab sample would be immediately collected from the center of the plume and analyzed for turbidity. The width and depth of the plume would be estimated at that time and recorded. If the turbidity level at the downstream sampling location is 10 NTU above the turbidity level at the upstream sampling location, work would cease immediately. Measures would be implemented to remedy the situation, and NDOT's contractor would notify the NDOT Environmental Services Division immediately for consultation regarding implementation of additional BMPs. The BMPs would be evaluated and inadequacies addressed. Sampling at the downstream sampling location would occur no sooner than 15 minutes after work ceases. Work may

resume when turbidity results at the downstream sampling location are less than 10 NTU above the turbidity level at the upstream sampling location.

2.2.1.3 Equipment Contamination, Fueling and Spill Control, and Cleanup

To minimize the potential for contaminant releases into the Truckee River during construction, all equipment would be fueled and maintained at a designated fueling location that is a minimum of 100 feet away from the river. Spills would be addressed in accordance with standard spill control procedures. All equipment working within the river area would be visually inspected daily for petroleum, hydraulic, or other leaks. To control contamination from accumulated grease and oil on the machinery and minimize the potential of introducing noxious weeds, NDOT's contractor would pressure wash all equipment before the equipment enters the Truckee River.

2.2.1.4 Best Management Practices

BMPs would be implemented to minimize erosion, sedimentation, and other potential sources of water pollution in accordance with the Construction Site BMP Manual (NDOT 2006). Table 3 lists typical BMPs that could be used. Please refer to the NDOT manual for complete descriptions.

Table 3. List of BMPs from the NDOT Construction Site BMP Manual

Best Management Practice Title	NDOT BMP Reference No.	Description of the BMP
Dewatering Operation	NS-2	Dewatering operations are practices that manage pollutants when non-stormwater and stormwater must be removed from the work site.
Clear Water Diversion	NS-5	Clear water diversions consist of various structures (e.g., berm and aqua barriers) and measures that intercept clear surface water upstream from a project site, transport it around the work area, and discharge it downstream with minimal water quality degradation by either the project construction operations or the construction of the diversion.
Vehicle and Equipment Cleaning	NS-8	Vehicle and equipment cleaning procedures and practices are used to minimize or eliminate the discharge of pollutants from vehicle and equipment cleaning operations. Cleaning stations will be located away from storm drain inlets, drainage facilities and watercourses. These areas must also be bermed in an impermeable material.
Vehicle and Equipment Maintenance	NS-10	Vehicle and equipment maintenance procedures and practices are designed to prevent the discharge of fuel spills and leaks into storm drains or to watercourses.

Table 3. List of BMPs from the NDOT Construction Site BMP Manual

Best Management Practice Title	NDOT BMP Reference No.	Description of the BMP
Material and Equipment Use Over Water	NS-13	Procedures for the proper use, storage, and disposal of the materials and equipment on barges, boats, temporary construction pads, or similar locations that minimize or eliminate the discharge of potential pollutants to a watercourse.
Structure Demolition and Removal Over or Adjacent to Water	NS-15	Procedures to protect water bodies from debris and wastes associated with structure demolition or removal over or adjacent to watercourses.
Geotextiles, Mats, Plastic Covers and Erosion Control Blankets	SS-7	Geotextiles, mats, plastic covers and erosion control blankets are used to temporarily stabilize disturbed soil and protect soils from erosion by wind or water.
Streambank Stabilization	SS-12	These procedures typically apply to all construction projects that disturb or occur within stream channels and their associated riparian areas.
Wind Erosion Control	SS-13	Dust or wind erosion control consists of applying water, soil stabilizers, dust palliatives, or other soil stabilization BMPs to prevent or minimize dust.
Silt Fence	SC-1	A silt fence is a temporary linear sediment barrier.
Sediment Logs	SC-5	A sediment log is placed on the toe and face of slopes to intercept runoff and reduce its flow velocity.
Gravel Bag Berm	SC-6	A gravel bag berm forms a barrier across a slope to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide some sediment retainment.
Stockpile Management	WM-3	Stockpile management procedures are designed for stockpiles of soil, paving materials such as Portland cement, aggregate sub-base or premixed aggregate, and pressure-treated wood.
Spill Prevention and Control	WM-4	These are procedures and practices implemented to prevent and control spills in a manner that minimizes or prevents the discharge of spilled material to the drainage system or watercourses.
Construction Debris and Liter Management	WM-5	Solid waste management procedures and practices are designed to minimize or eliminate the discharge to the drainage system or watercourses as a result of

Table 3. List of BMPs from the NDOT Construction Site BMP Manual

Best Management Practice Title	NDOT BMP Reference No.	Description of the BMP
		the creation, stockpiling, or removal of construction site wastes.
Concrete and Paving Curing	NS-12	Concrete and pavement curing is used on bridges, retaining walls, and pump houses using both chemical and water.
Concrete Finishing	NS-14	Concrete finishing methods are used for bridge deck rehabilitation, sound walls, paint removal, curing compound removal, and final surface.

Source: NDOT (2006)

2.2.2 Biological Requirements

NDOT's contractor would develop a fish salvage plan to be submitted to the USFWS, the Corps, and the NDOT Environmental Services Division for final approval a minimum of 30 days before construction. Partnering agencies have 10 working days to respond if they have concerns. Fish that do not migrate out of the temporary river diversion would be relocated through coordinated efforts with NDOT's contractor and NDOT biologists. The specific method would be determined in consultation with the USFWS. Fish salvage activities would be performed under the guidance of a qualified fisheries biologist, would comply with any additional protocols requested by USFWS staff, and would be reported within 30 days of the salvage activities.

Work within the Truckee River would not occur during the months of October through June. This period is based on the LCT and cui-ui spawning seasons, as well as the spawning seasons for other fish species found within the Truckee River. Work within the waters of the Truckee River is restricted to July 1 through September 30, per agreements between NDOT, NDOW, and USFWS (Simpson 2017c; see Appendix C).

3.0 EXISTING ENVIRONMENT

This section describes the aquatic resources associated with the action area. The stream channel, floodplain, riparian areas, and associated wetlands have a pivotal role in the quality of water in the Truckee River and Pyramid Lake. The Spaghetti Bowl Project is not expected to have impacts on fish habitat in the Truckee River or Pyramid Lake, other than what may occur relative to removal of the in-stream bridge pier, and/or impacts related to water quality and possibly water quantity that may be associated with an increase in impervious surfaces. A detailed description of the aquatic environment is necessary to evaluate potential impacts on the listed species and is described below.

3.1 TRUCKEE RIVER

3.1.1 Fish Resources

NDOW periodically samples fish populations in the Truckee River. The latest survey in 2015 used a combination of electroshocking surveys, volunteer angler surveys, and a mail-in angler questionnaire to estimate the condition of the fishery resource, angler days, and fishing success in the river (Hawks 2016).

The 2015 NDOW survey of the Truckee River found the following salmonids: nonnative brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss*), and native mountain whitefish (*Prosopium williamsoni*).

The following native, non-salmonids were also identified:

- Paiute sculpin (*Cottus beldingii*)
- Lahontan redside (Richardsonius egregious)
- Speckled dace (Rhinichthys osculus)
- Mountain sucker (Catostomus platyrhynchus)
- Tahoe sucker (Catostomus tahoensis)
- Tui chub (*Gila bicolor*)

Undesirable species, including three green sunfish (*Lepomis cyanellus*), one largemouth bass (*Micropterus salmoides*), and three fathead minnows (*Pimephales promelas*), were also collected. No LCT or cui-ui were found during the survey (Hawks 2016).

3.1.2 In-Stream Habitat

The primary in-stream determinants of habitat quality in the Truckee River that pertain to this project are the quality and quantity of water. Water quality in the river is influenced by the quality of water brought by tributaries and discharges along the river and by sediment input to the river, which can be contaminated with various constituents harmful to fish and other aquatic life. Contaminants that accumulate on public and private lands, parking lots, streets and other roadways can be transported directly to the Truckee River via municipal storm drains (NDOT 2017). The U.S. Geological Survey (USGS)

and others have reported high concentrations of metals and polycyclic aromatic hydrocarbons in river sediments from the Reno-Sparks metropolitan area, and contamination extends from Reno to at least 20 miles downstream at Tracy, Nevada (Higgins et al. 2006). National Water Quality Assessment scientists documented elevated contaminant concentrations in fish and aquatic invertebrates and noted a higher incidence of lesions, hemorrhagic septicemia, and external parasites in fish collected in this reach (Higgins et al. 2006). In 1999, USFWS biologists monitoring LCT survival and stocking success in the lower Truckee River also reported a high incidence of external anomalies in fish from the reach of the river downstream from Reno; external anomalies again included external lesions, hemorrhagic septicemia, and external parasites (Higgins et. al 2006).

Several potential sources of contamination to the lower Truckee River have been identified, including treated municipal wastewater, commercial sump pumping discharges, and dewatering operations (Higgins et al. 2006). Under low-flow conditions, these discharges (particularly treated municipal wastewater) account for most of the flow in the lower Truckee River (Higgins et al. 2006). Several nonpoint source discharges, such as stormwater runoff, urban runoff, agricultural return flows, and groundwater inflow, have also been identified as potential contaminant sources in the lower Truckee River (Higgins et al. 2006). These include both water soluble contaminants and contaminated sediments (Higgins et al. 2006). However, the relative contribution of contaminants in point and nonpoint source discharges is uncertain (Higgins et al. 2006).

There are multiple USGS stream-gaging stations in the watershed (USGS 2017). The station closest to the project area is Station 10348000, 0.5 mile upstream from the project area (see Figure 1). The station is located on the left bank, adjacent to Scott Island, about 700 feet downstream from the Kirman Avenue bridge and 0.4 mile upstream from the Kietzke Lane bridge. The period of record is from 1906 to 2016. Data show a pattern of lower streamflow in the fall and early winter months, a gradual increase during the mid-winter and early spring months, and a peak during May and June (Table 4). Intense rain and rain-on-snow events can also produce occasional high-magnitude, short-duration peaks at various times throughout the year, although they rarely occur between July and September. There are many diversions above the station. Flows at this station are regulated by:

- Lake Tahoe
- Martis Creek, Donner Lake, Independence Lake, Prosser Creek, Stampede, and Boca reservoirs
- Several power plants

Table 4. Mean Monthly Flows (cfs) in the Truckee River near Reno (USGS gage 10348000)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
624	686	849	1,160	1,430	1,010	432	262	258	283	397	534

Notes:
Period of record: water years 1906–2016 (excluding 1922 through 1924, 1927 through 1929, 1935 through 1942, 1944 through 1945)

Flows in the Truckee River near Reno range from 258 cubic feet per second (cfs) in September to 1,430 cfs during the snow-melt runoff period in May.

Since construction in 1905 of Derby Dam (east of Clark, Nevada, and located approximately 24.5 miles downstream from the project area [see Figure 2]), the Truckee River discharge into Pyramid Lake has substantially decreased. Derby Dam diverts water for agricultural use in the Carson River watershed, a major watershed south of the lower Truckee River. Increasing urbanization has also reduced water flow into Pyramid Lake. The flow reduction significantly affects the character of the lower Truckee River ecosystem and of Pyramid Lake. The result has been a periodic disconnect between the lake and the Truckee River for migrating fish coming out of Pyramid Lake. Under current conditions, the lake fluctuates around a highly altered hydrograph and sometimes results in the exposure of a significant delta area created from Truckee River sediment-laden water at the inflow to the lake, which makes fish passage difficult (USFWS 2003).

Habitat in the project area is likely used for foraging and movement up and down the river.

3.1.3 Pyramid Lake

3.1.3.1 Fishery Resources

About 26 fish species have been documented in Pyramid Lake. As with the lower Truckee River, the fish community includes both cool-water and warm-water species, along with a variety of native and nonnative fish, including trout, suckers, chubs, dace, sunfish, and bullheads (Vigg 1981). Cui-ui and LCT are found in Pyramid Lake.

3.1.3.2 Aquatic Habitat

Pyramid Lake is an alkaline lake with no outflow, and it is considered a “terminal” lake (i.e., does not flow into the sea). Historically, water levels in Pyramid Lake fluctuated in response to dry and wet hydrologic cycles. At higher lake level elevations (3,862 feet), water from Pyramid Lake would overflow into Winnemucca Lake, located directly east of Pyramid Lake. Elevations of both Winnemucca Lake and Pyramid Lake remained relatively stable until the early 1900s. Winnemucca Lake is now a dry lakebed because of reductions of inflow from the Truckee River that have resulted in a permanent decrease in the elevation of Pyramid Lake, which declined 85 feet in surface elevation between 1910 and 1965 (USFWS 2003).

Point and nonpoint sources of pollution affect all fisheries in Pyramid Lake (Paiute Tribe Natural Resources Department 2017). Tertiary-treated effluent from the Truckee Meadows Water Reclamation Facility, urban storm runoff, agricultural return flows, septic tanks, and mining activities (present and historical) affect surface waters on the Lower Truckee River and Pyramid Lake. Water pollution, compounded by upstream diversions and subsequent low flows have increased bacteria levels. This has led to periodic advisories about fish consumption due to contaminants in the fish, such as metals and other constituents that bioaccumulate in the food chain.

4.0 BIOLOGY AND LIFE HISTORY OF LCT AND CUI-UI

This section provides information on the life history, range and distribution, and reasons for decline of the federally listed LCT and cui-ui in the project and action areas. It also provides information about recovery efforts. The following information was collected from published and unpublished literature, 5-year review reports, and recovery plans.

4.1 LAHONTAN CUTTHROAT TROUT

Under the ESA, the U.S. Department of Interior listed the LCT as an endangered species in 1970 and reclassified it as a threatened species in 1975 (40 Federal Register [FR] 29863–29864). The LCT was petitioned to be delisted in 2008, but the USFWS rejected the delisting request (73 FR 52257–52260). Hatchery and native fish are both included in the listing.

The USFWS identified three distinct population segments (DPS) of the LCT:

1. The Western DPS (Truckee, Carson, and Walker rivers)
2. The Eastern DPS (Humboldt River)
3. The Northwestern DPS (Quinn River and Black Rock Desert)

LCT in the action area belong to the Western DPS. However, for ESA regulatory purposes, the USFWS does not distinguish among the DPS designations because there are no separate rulings on listing specific DPSs of LCT.

4.1.1 Life History

Optimal stream habitat for LCT is relatively clear, cold water with silt-free substrate to maintain viable populations (USFWS 2017a). Their habitat typically includes a variety of micro-habitats including in-stream cover such as boulders and woody debris, and slow deep water. LCT lacustrine habitat varies from alpine lakes to desert terminal lakes such as Pyramid Lake. They can live in lakes with high alkalinity and total dissolved solids (USFWS 1995). LCT that migrate into lakes have historically reached up to 41 pounds but recently have ranged from 13 to 15 pounds (NDOT 2017). LCT can live from 5 to 9 years in lakes but are usually less than 6 years old in streams (USFWS 2009).

LCT reproduce in the spring and are obligatory stream spawners, sometimes migrating large distances to find adequate spawning areas (NDOT 2017). For example, they have migrated up to 100 miles from Pyramid Lake into the Truckee River (USFWS 1995). LCT can spawn in headwater reaches, tributary streams, and small, intermittent tributary streams (USFWS 2009). Lake LCT spawn in riffles and tail ends of pools in tributaries (USFWS 1995). Spawning usually occurs from April through July; LCT become

sexually active at age 3 in streams and between age 3 and 4 in lakes (USFWS 2009). LCT lay between 600 and 8,000 eggs per female in streams but only 100 to 300 eggs in lakes (USFWS 1995).

Stream-resident LCT feed on drifting terrestrial and aquatic insects. In lakes, small LCT feed largely on insects and zooplankton; larger LCT feed mostly on fish. Fish in the diet of Pyramid Lake LCT become more important when the LCT reach approximately 8 inches. When the Pyramid Lake LCT reach a length of approximately 20 inches, fish comprise 100 percent of their diet (USFWS 2009).

4.1.2 Range and Distribution

LCT historically occupied a variety of water bodies, including large freshwater and alkaline lakes and small alpine lakes, major rivers and tributaries, and small alpine streams in the Lahontan Basin of northern Nevada, eastern California, and southern Oregon. These areas include the Truckee, Carson, Walker, Susan, Humboldt, Quinn, Summit Lake/Black Rock Desert, and Coyote Lake watersheds and represented the largest range of any inland trout species of western North America (USFWS 2009).

LCT currently occupy approximately 641 stream miles; 588 stream miles in their historical range and 53 stream miles outside their historical range. Five lakes have LCT populations where they occurred historically, but only two have self-sustaining populations. Stocking programs maintain all other lake populations, including some outside their historical range (USFWS 2009).

In the Truckee River Basin, LCT occurred historically from California headwaters to Pyramid Lake (USFWS 2009). LCT currently occupy approximately 111,063 acres of lake habitat and 97 miles of stream habitat (NDOT 2017). LCT were extirpated in Pyramid Lake around 1944, but a stocking program initiated after the 1940s returned LCT to the lake (USFWS 1995).

In the period between 1995 and 2009, LCT were introduced or established in 12 new waters, extirpated from 32 waters, and continue to be found in 147 waters (USFWS 2009). Artificial breeding programs maintain LCT population in some historical range waters, such as the Truckee River and Lake Pyramid in the action area (USFWS 2009). There are currently an estimated 1.5 million individuals in the Pyramid Lake/Truckee River and tributaries system (Simpson 2017e).

4.1.3 Presence in the Action Area

LCT occur throughout the Truckee River within Nevada. USFWS curtailed stocking LCT from 2011 through 2015 (Hawks 2017; see Appendix C). According to NDOW, the USFWS considers the entire Truckee River below Mogul “occupied,” because USFWS resumed LCT stocking throughout the reach in 2016 and continued it in 2017 (Hawks 2017 and 2018; see Appendix C). Hatchery LCT occur in the Truckee River in the project area, but native LCT are not known to be present. LCT do not spawn in the project area because Derby Dam prevents upstream movement. Natural spawning occurs below Derby Dam and in some California tributaries of the Upper Truckee River (Simpson 2017d). LCT also occur in Pyramid Lake, both from hatchery stocking by Tribal hatcheries and from reproduction in the lower Truckee River below Derby Dam (Hottle 2017a).

The Pyramid Lake LCT range recently expanded. The Pilot Peak strain of LCT was once thought extinct but has made a comeback through two decades of conservation actions by the USFWS's Lahontan National Fish Hatchery Complex and Pyramid Lake Paiute Tribe. The heavy 2015-2016 snowpack in the Sierra Nevada range resulted in record-high spring flows in the Truckee River, allowing the LCT to move upriver into areas they have not accessed since the 1930s. When the Derby Dam is rehabilitated in the next few years to allow fish passage, these fish will be able to move farther up into the action area (Hottle 2017a).

Presence of native LCT in the project area is likely to change due to the upcoming fish passage improvement projects described in Section 4.1.5, Recovery Efforts. These projects have implications for the Spaghetti Bowl Project because native LCT could be able to enter the project area through migration from upstream or downstream native populations.

4.1.4 Reason for Decline

The LCT Recovery Plan identifies four threats to LCT (USFWS 1995):

1. Degraded and/or limited habitat
2. Displacement and/or hybridization with nonnative trout
3. Competition from nonnative fishes
4. Decreased viability

One of the leading causes of cutthroat trout population declines in the western United States is habitat fragmentation, which reduces the total habitat available, reduces habitat complexity, and prevents gene flow. As populations become isolated through fragmentation, they become more susceptible to extinction. Approximately 72 percent (52 populations) of LCT conservation populations occur in short stream segments (less than 5 miles) or are completely isolated. Fragmentation has occurred in the Truckee River basin and LCT in Pyramid Lake can no longer migrate into the upper Truckee River or Lake Tahoe for spawning due to irrigation diversion facilities and other man-made river obstructions (USFWS 2009).

Nonnative fish, especially salmonids, which compete and hybridize with LCT, are the greatest threat to LCT throughout their range. Nonnative salmonids and other nonnative fish have been introduced through the LCT historical range since the late 1800s. Introduction of nonnative trout has caused most of the LCT population extirpations since the mid-1990s. Brook trout are the predominant competitor with LCT (USFWS 2009).

Aquatic invasive species such as *Mysis* shrimp, New Zealand mud snails (*Potamopyrgus antipodarum*; NZMS), and quagga mussels (*Dreissena rostriformis bugensis*) also threaten LCT recovery. Mysis shrimp have been particularly harmful in lakes in the Lake Tahoe basin. None of these are a problem yet in the

action area, but the NZMS in the Truckee River could become more of a threat (USFWS 2009; Crookshanks 2014).

4.1.5 Recovery Efforts

To address threats to Truckee River basin and Pyramid Lake LCT identified in Section 4.1.4, Reason for Decline, the USFWS 1995 recovery plan recommended that long-range options for water and other uses in the Truckee River basin should be determined through development of a Truckee River basin ecosystem plan. It also recommended that lacustrine LCT population viability be evaluated and determine if remnant Pyramid Lake strain in other waters could be transplanted back into Pyramid Lake (NDOT 2017).

Another important recovery effort currently under way is to improve LCT movement in the Truckee River through construction of fish-passage at several dams that currently block within-stream movement and upstream movement from Pyramid Lake (Hottle 2017b). Four dams blocking LCT passage will be rehabilitated from 2018 through 2022 through the Truckee River Fish Passage Project, which is a joint effort between the USFWS and the Truckee Meadows Water Authority. The first to be addressed will be the Steamboat Ditch Diversion near Verdi, Nevada, upstream of the project area. The three remaining projects are the Verdi Power Dam in 2019, the Washoe Highlands Dam in 2021, and the Fleisch Diversion Dam in 2022. The Derby Dam will also be rehabilitated in the next several years (Hottle 2017a).

4.2 CUI-UI

The U.S. Department of Interior listed the cui-ui as an endangered species under the ESA in March 1967 (32 FR 4001). This sucker is only found in Pyramid Lake and the lower Truckee River; both locations are within the action area. The cui-ui can live longer than 40 years and can weigh over 7.5 pounds (NDOT 2017).

Although critical habitat has not been designated for cui-ui, the Truckee River from Hunter Creek in western Reno to and including Pyramid Lake has been identified as essential habitat (USFWS 1992). This area also most likely represents the historical occupied habitat of the cui-ui (NDOT 2017). According to the USFWS (1992), this designation was substantiated by the following:

- Truckee River point and nonpoint sources for pollutants mostly occur from Reno downstream.
- Numerous sources divert the greatest volume of water from the Truckee River from Reno downstream.
- The Truckee River downstream from Reno has had the most habitat alteration.
- There are unconfirmed reports that cui-ui spawned upstream in the Truckee River to approximately 5 miles east of Reno (Lockwood).

4.2.1 Life History

The cui-ui is a large, omnivorous (i.e., feeds on both fauna and flora) fish that resides in lake and stream habitats. Lake habitat is used for larval rearing and by juveniles and adults. Cui-ui primarily use stream habitat for spawning (USFWS 1992). Juvenile and adult cui-ui are usually found at depths between 60 and 100 feet within Pyramid Lake. Juveniles tend to concentrate at the north and south ends of the lake. Cui-ui are most active in the summer and generally do not show any migration behavior within the lake. Larvae use the shallow littoral zone (i.e., close to shore) until late summer, when they disperse into deeper water but still remain segregated from adults (USFWS 1992).

Cui-ui migrate up the lower Truckee River to spawn beginning in April or May, depending upon timing of runoff, river access, and water temperature. A high-volume spring runoff may attract more spawners and promotes egg ripening (USFWS 1992). Migrating adults must pass through Marble Bluff Fish Facility and above Marble Bluff Dam (between Pyramid Lake and Derby Dam) to access suitable spawning habitat. Spawning occurs over gravel. Cui-ui do not build nests, instead broadcasting their adhesive eggs, which stick to gravel, over a large area. Eggs hatch 1 to 2 weeks after spawning and larvae are swept downstream to Pyramid Lake shortly after hatching. Adult cui-ui typically become sexually active at 8 to 10 years of age but may become so as early as 5 years old (USFWS 2017b, 1992).

Cui-ui larvae feed primarily on zooplankton and chironomid larvae. Adults mostly consume zooplankton (i.e., cladocerans and copepods). Juvenile cui-ui feed on zooplankton (i.e., cladocerans, copepods, and ostracods), chironomid larvae, and algae. Adults may also feed on chironomid larvae and ostracods (USFWS 1992; NDOT 2017).

4.2.2 Range and Distribution

Cui-ui lived in Lake Lahontan until 5,000 to 10,000 years ago. As that lake disappeared due to declining water levels, cui-ui remained only in Pyramid and Winnemucca lakes. Cui-ui disappeared from Winnemucca Lake in the 1930s when it dried up due to water diversion from the Truckee River and a drought (USFWS 1992).

4.2.3 Presence in the Action Area

Cui-ui only occur in the action area from Pyramid Lake to Derby Dam on the Truckee River and in Pyramid Lake. There are no fish passage facilities at Derby Dam that would allow spawning migrations of cui-ui to pass west from that point. As a result of the future proposed fish passage projects described in Section 4.1.5, Recovery Efforts, cui-ui would have access to reaches upriver in the action area. It is highly unlikely that cui-ui will be in the Truckee River during the in-river work period of July 1 through September 30. If they were to occur in the project vicinity it would likely be in April during spawning. Any fry in the Truckee River would likely emerge no later than the end of May and would return to Pyramid Lake within several weeks of emergence. All life stages of cui-ui would be anticipated to be out of the Truckee River by July (Vogt 2018b).

4.2.4 Reason for Decline

Upstream storage of water in and diversion of water from the Truckee River reduces inflow to Pyramid Lake and helps cause the decline of the cui-ui population. Timber harvesting and irrigated agriculture in the basin during the 19th century altered water runoff quantity and quality into the Truckee River. However, the largest diversion of Truckee River water occurred in 1905 with the completion of Derby Dam, a key feature of the Newlands Project. Increasing water demands from industry, agriculture, and municipalities further altered the volume and timing of river flows. All these factors combined to disrupt cui-ui reproduction (USFWS 1992).

4.2.5 Recovery Efforts

There have been two recovery plans for the cui-ui, with the most recent completed in 1992 (USFWS 1992). The original recovery plan was completed in 1978, updated in 1980, and revised in 1983 (NDOT 2017). The 1978 plan's objective was to "restore the species to a non-endangered status and reclassify from endangered to threatened," but there was no quantification of what the requirements for reclassification would be (NDOT 2017).

The ultimate objective of the 1992 plan was to continue to move toward delisting, and finally to delist, the species. The path to delisting would first involve reclassification to threatened from endangered.

To be considered for reclassification, the following criteria must be met (USFWS 1992):

- Species has an 85 percent probability of persisting for 200 years.
- 45,000 acre-feet of additional annual Truckee River inflow or an equivalent benefit has been secured at a minimum rate of 5,000 acre-feet/year.
- Numbers of adults and year classes of juveniles and adults are stable or increasing for 15 years.

The criteria for delisting include the following (USFWS 1992):

- Species has an 85 percent probability of persisting for 200 years.
- 65,000 acre-feet of additional annual Truckee River inflow or an equivalent benefit has been secured at a minimum rate of 5,000 acre-feet/year.
- Numbers of adults and year classes of juveniles and adults are stable or increasing for 15 years.
- Specified standards for lake and river water quality has been achieved for 15 years.
- Rehabilitation of the lower Truckee River floodplain has occurred.
- 300,000 adult cui-ui can pass Marble Bluff Fish Facility and Numana Dam each spawning run.

- Funding has been secured for various water storage and fish passage maintenance and operation facilities.
- A brood stock hatchery refuge has been established.

A variety of other actions contribute to the recovery effort (NDOT 2017):

- Except for a heavily regulated sport fishery, harvest of cui-ui not allowed
- Development of cui-ui propagation techniques and construction of the David Koch Cui-ui Hatchery
- Construction of the Marble Bluff Dam and Fish Facility and the Pyramid Lake Fishway
- Stampede Reservoir construction, which helped reestablish Truckee River flows
- Management of Stampede Reservoir release and operation of the Marble Dam facilities to maximize spawning runs
- Regulation of the Newlands Project Water Diversion to provide more flow into Pyramid Lake

5.0 EFFECTS OF THE PROPOSED ACTION

This section describes the potential direct effects, indirect effects, interrelated and interdependent effects, and cumulative effects of project construction (short-term) and operation (long-term) on federally listed cui-ui and LCT. Direct effects are changes related to a project that occur at the same time or place as the proposed action. Indirect effects are foreseeable changes in the environment that occur later in time or beyond the immediate project area. An interrelated activity is an activity that is part of a larger proposed action and is dependent on the larger proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the larger proposed action under consultation. The proposed Reno Spaghetti Bowl Interchange Reconstruction Project is the larger proposed action when considering interrelated and interdependent activities. For the purposes of consultation under the ESA, cumulative effects are the effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of an action subject to consultation. The effects are assessed relative to existing conditions and whether these effects are expected to appreciably reduce the likelihood of species survival and recovery.

As described earlier in this report, LCT may occur in the project area because they have been stocked in the upper portions of the Truckee River and in Pyramid Lake as a result of the combined efforts of federal, state, and tribal agencies. Cui-ui typically only occur in Pyramid Lake, except for successful spawning seasons when they can be found in the Lower Truckee River. As discussed in Section 4.1.5, Recovery Efforts, several dams that block fish passage will be rehabilitated to allow LCT and cui-ui migration in the near future, with some of the LCT becoming resident fish in the project area or with LCT and Cui-ui moving through it during spawning runs. These fish passage efforts will increase the possibility that the project would have an impact on individual LCT.

Resident LCT are known to dwell in the project and action areas, and there is a risk of encountering them. As planned future fish passage improvements on the Truckee River are completed, the probability of LCT or cui-ui to be in the project area will increase. Because there is not sufficient research or data to determine their presence or absence during the construction period, NDOT must assume presence of cui-ui and LCT in the project and action areas. However, cui-ui would not be expected to be in the project area during the in-water work from July 1 through September 30. Therefore, any potential for effects to this species is considered discountable.

5.1 DIRECT EFFECTS

This section describes the potential direct effects that would occur during construction and operation of the project.

5.1.1 Construction

5.1.1.1 Sedimentation

Pollutants or added sediments that would be transported to the Truckee River through stormwater or water used onsite for dust control are not anticipated. Potential pollution from sedimentation would be controlled through proper implementation of the combined construction BMPs presented in Section 2.2, Regulatory Requirements and Best Management Practices.

These BMPs include:

- Erosion control products
- Fiber rolls
- Silt fences
- Landscaping

In areas where work would occur near water, temporary structures such as check dams, sediment traps, dikes, or ditches may be used to trap sediment and prevent it from moving into the Truckee River. However, an unusually large storm event could result in temporary increases in sediment because most temporary facilities are designed for average conditions. If this were to occur, accumulated sediment would be removed from the structures and disposed of offsite or incorporated into the fill material to be capped under the roadway.

In areas where in-water work would occur, a water diversion would be installed and the construction site would be isolated from live water. NDOT would direct the contractor to construct and maintain barriers to isolate and confine in-water work areas to prevent sediment, petroleum products, chemicals, and other liquids and solids from entering waters of the United States during construction. Section 2.1.4, Truckee River Diversion, describes this activity. The greatest potential for sediment release would be during installation and removal of the water diversion and associated infrastructure. However, any releases associated with the installation and removal of the water diversion are expected to be small.

Given the application of these construction BMPs in uplands, along streambanks, and in water, it is expected that increased sedimentation in the Truckee River and Pyramid Lake would be minimal and would not persist after construction is completed.

5.1.1.2 Hazardous Spills

The potential for hazardous spills from the construction site directly into the Truckee River would be eliminated or minimized to the greatest extent practicable by following the spill prevention guidelines presented in Section 2.2.4, Equipment Contamination, Fueling and Spill Control, and Cleanup, and in Section 2.2.5, Best Management Practices. Therefore, there is an extremely low risk that hazardous materials originating from construction equipment would enter the Truckee River and Pyramid Lake.

5.1.1.3 Habitat Access

Diverting stream flow from the bridge pier area during pier removal would isolate habitat around the pier and prevent access by LCT. Given the small area of the enclosure relative to the amount of habitat available in the Truckee River, this impact is expected to be minimal and short-term. Shoreline and bridge construction activity could also startle fish and result in avoidance of the area during construction activity.

5.1.1.4 Fish Salvage

Direct contact during fish salvage activities may be required to remove fish including LCT, that do not move out of the dewatered area on their own. The ESA defines *take* as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." Fish salvage efforts may result in harm, harassment, and potentially mortality of LCT. Therefore, fish salvage activities may result in take of this species, if present.

5.1.1.5 Introduction of Invasive Species

Although the extent and distribution of the NZMS is not completely understood, resource agencies have evidence that the Truckee River watershed is at risk of infestation. The snail is a macroinvertebrate and is an aquatic nuisance. The limited research to date has found native macroinvertebrate populations decrease in response to NZMS invasions (Montana State University, Bozeman 2017), likely because NZMS outcompete resident macroinvertebrate populations for food and nutrients. This can disrupt the food chain by reducing food available for native fisheries.

The NZMS has a high reproductive potential and no native predators in the Truckee River system. From Painted Rock upstream to the Nevada–California border, NDOW surveyed 26 transects in the Truckee River for NZMS in 2013 (Crookshanks 2014). A total of 679 NZMS were collected at the 13 transects where NZMS were documented. The survey shows that the current NZMS distribution on the Truckee River spans from Mustang upstream to Mayberry Park, a distance of approximately 18 miles (Crookshanks 2014).

To eliminate the possibility of additional NZMS being introduced to the Truckee River system by the project, construction equipment will be kept out of the river. If, for an unforeseen reason, construction equipment must enter the river, the equipment would be inspected for NZMS and would not be allowed to enter another water body for a minimum of 5 days. These practices are expected to eliminate the potential introduction of the NZMS into the Truckee River system as a result of project activities.

5.1.1.6 Shading and Removal of Riparian Vegetation

As shown on Figure 3, the new bridge over the Truckee River would be larger than the existing bridge. The deck surface area would increase by approximately 8,871 square feet. There would also be approximately 4,053 square feet of riparian vegetation removed as part of the new bridge construction. There would be a slight loss of shading from riparian vegetation removal but an increase in shading from the new bridge deck. This would result in a net increase of 4,818 square feet of shading on the river. The

lost riparian vegetation would re-establish itself through regeneration after construction is complete. There would be a temporary loss of organic matter input by vegetation falling into the river until riparian vegetation recovers. There would be no increase in river temperature due to construction.

Impacts due to shading and removal of vegetation would be minimal.

5.1.2 Operation

5.1.2.1 Stormwater Operations

A major operational feature of any road project is the stormwater system. An important function of a stormwater system is to adequately drain water from impervious surfaces throughout a project area and then treat it to achieve sediment and pollutant levels required by local and federal regulations. The proposed project would result in a net increase of impervious surfaces of up to 22 percent within the project footprint, as described in Section 2.1.2, Construction Components.

The existing freeway and interchange drainage systems were built in compliance with the NDOT and FHWA drainage criteria in place at the time of construction. Per these standards, design criteria vary according to the elements to be protected and the frequency and severity of the storm events, as described below:

- A design for a 25-year storm is used for roadway (onsite) drainage features. The main purpose of onsite drainage facilities is to mitigate the risk of vehicle hydroplaning. Onsite facilities include storm drains, curbs, gutters, and roadside swales.

- A design for a 50-year storm is used for drainage facilities that protect the overall freeway infrastructure from runoff developed in offsite tributary areas. These flows cross, or are conveyed alongside, the roadway via cross culverts, channels, local street surface flows, and local storm drain systems.

- A design for a 100-year storm is used to ensure global drainage patterns remain unaltered and to ensure adequate mitigation is provided to prevent adverse impacts to surrounding properties.

The current criteria for the 25-, 50-, and 100-year storms, described above, remain. In addition, current requirements include mitigation of discharged sediment and pollutants that results from an increase in paved and disturbed areas, based on a design for a 2-year storm.

Although revetment exists to prevent erosion of ditches and storm drain outlets during 25- and 50-year events, few existing facilities have been constructed with the specific purpose of mitigating sediment or pollutants, as required by current standards. The proposed storm drain system would meet current NDOT and FHWA standards for onsite and offsite runoff. Facilities will maintain existing condition drainage patterns and discharge locations to the extent practical.

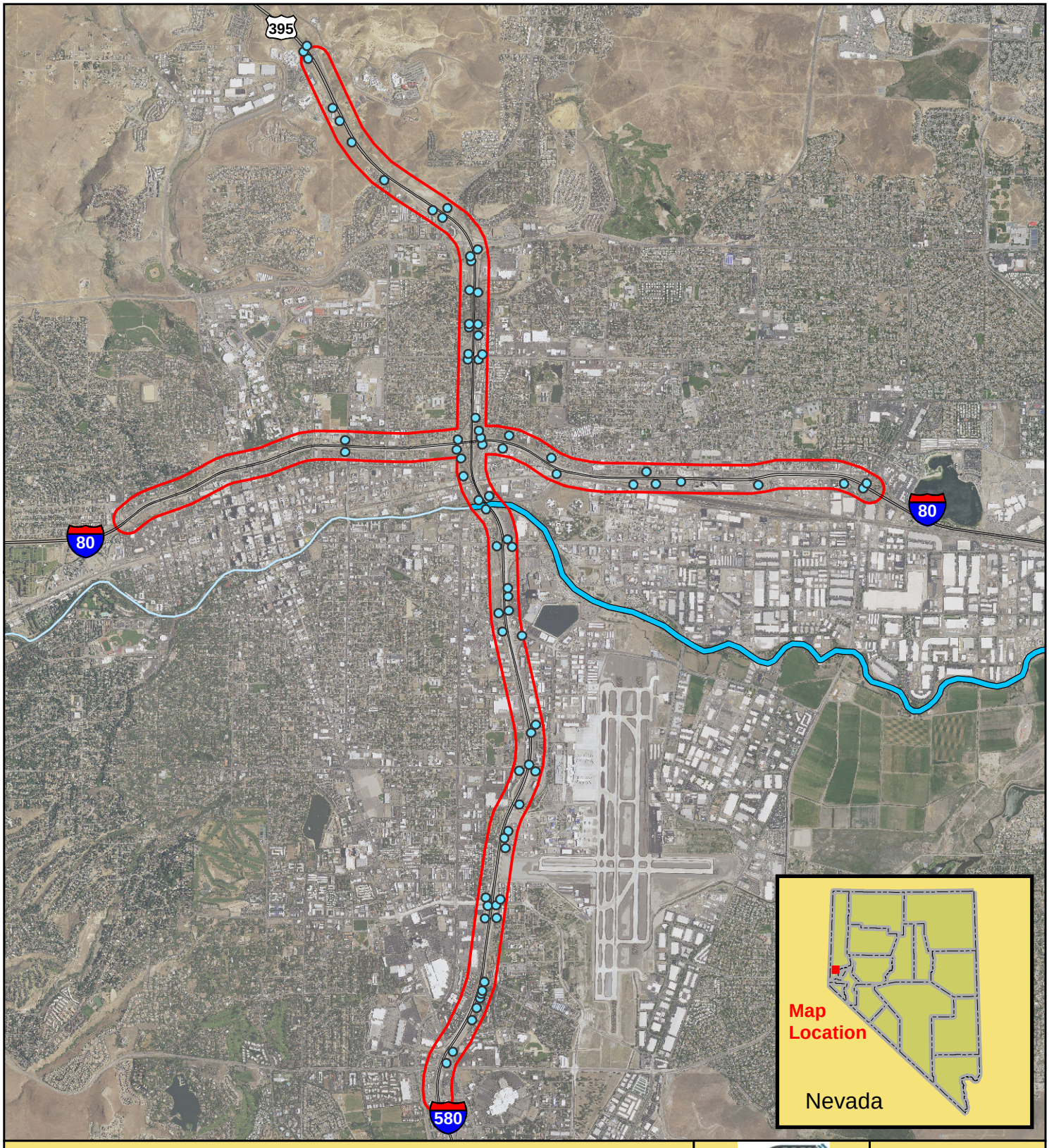
In addition, project drainage systems would include structural controls that meet the requirements of NDOT's statewide National Pollution Discharge Elimination System Separate Storm Sewer System permit, issued by the Nevada Division of Environmental Protection. At a minimum, these facilities would mitigate sediment and pollutants from added pavement and disturbed areas. These facilities would be designed based on a 2-year, 24-hour event conforming with the standards of the NDOT Stormwater Division and as defined in the *Truckee Meadows Regional Storm Water Quality Management Program – Truckee Meadows Structural Controls and Low Impact Development Manual*, 2015 update (NCE 2015).

Based on direction from the NDOT Stormwater Division, preliminary design, as related to the Draft Environmental Impact Statement should include treatment of all paved surfaces associated with the freeway and interchanges. This provides a conservative design with respect to right-of-way and cost impacts and exceeds minimum stormwater requirements. Final project development will provide, at a minimum, treatment of additional paved and disturbed areas, and all treatment as currently proposed may not be included.

Structural controls would include approximately 80 water quality sediment basins distributed throughout the project area (Figure 4). These basins are designed to intercept and detain runoff from 2-year storms from paved and disturbed areas of the project before release into existing drainage systems. A controlled drawdown over a 48-hour period will allow sediment and pollutants to fall out of suspension and remain within the basins. Periodic maintenance of these basins would be required to remove and properly dispose of these collected materials.

Where it is not feasible to construct water quality basins due to hydraulic constraints or significant right-of-way restrictions, installation of in-water water quality separator structures may be considered. Installation of these structural controls, however, would be limited due to increased maintenance requirements. Source control measures, such as gravel mulch and landscaping elements, would also be implemented to reduce sediment and pollutant discharges.

The proposed stormwater system would, at a minimum, mitigate road-borne contaminants from additional paved areas and would result in no negative impact during a 2-year storm event.



LEGEND:

- Proposed Water Quality Basin
- Truckee River/Pyramid Lake: Biological Assessment Action Area
- Project Area (500 feet from Project center line)

SPAGHETTI BOWL PROJECT

Reno/Sparks
Washoe County
Nevada

FIGURE 4
PROPOSED WATER QUALITY BASINS

0 0.5 1
MILES

N

Data Sources: CH2M, USFWS NWI

BASE MAP SOURCE:USDA NAIP 2015

\\mspfpp01\Proj\684384_RENO_BowlGIS\MapDocs\T&E\REPORT_BA\Fig4_RSB_8X11P_T&E_Basins.mxd CS031687 1/6/2018 4:18:49 PM

Additionally, the stormwater system would result in an overall reduction of contaminants for smaller storms events, and it would provide an overall improvement compared with existing discharges. Therefore, due to the addition of these facilities, there would be a reduction in the amount of sediment and contaminants entering the Truckee River and Pyramid Lake from the overall stormwater runoff from the impervious surface.

5.1.2.2 Truckee River Hydraulics and Hydrology

There is no change expected in the hydrology or river hydraulics with implementation of the project.

5.2 INDIRECT EFFECTS

5.2.1 Sedimentation

As discussed in Section 5.1.1.1, application of construction BMPs would minimize the potential for sediment and pollutants to enter the action area downstream of the construction site. Therefore, increased sedimentation in the Truckee River and Pyramid Lake would be minimal.

5.2.2 Hazardous Spills

As discussed in Section 5.1.1.2, the project would follow spill prevention guidelines to eliminate or greatly reduce the potential for hazardous spills to enter the action area downstream of the construction site. Therefore, the risk of toxic spills in the Truckee River and Pyramid Lake would be extremely low.

5.2.3 Introduction of Invasive Species

Practices that avoid introduction of NZMS by construction equipment would eliminate the possible introduction of this invasive species into the Truckee River or Pyramid Lake downstream of the construction site.

5.2.4 Stormwater Operations

Installation of the proposed stormwater treatment system would likely reduce the amount of sediment and road-borne pollutants entering the Truckee River and Pyramid Lake from the project area, compared to existing conditions.

5.3 INTERELATED AND INTERDEPENDENT EFFECTS

This BA includes all known project effects, which are limited to the direct temporary and permanent effects of disturbing banks and substrate (of the stream channel), shifts in the spatial contribution of flow to Bear and Ashland Creeks, work area isolation, and noise associated with construction in the action area. Interrelated or interdependent actions would not occur as a result of the proposed project.

5.4 CUMULATIVE EFFECTS

Cumulative effects are defined in Title 50 Part 402.02 of the Code of Federal Regulation as "those effects of future State or private activities, not involving Federal activities that are reasonably certain to occur within the action area of the Federal action subject to consultation." Projects listed in this section are other State of Nevada or local government projects, as specified in the definition of cumulative effects under the ESA.

5.4.1 Nixon Bridge and Verdi Bridge Scour Projects

The NDOT Nixon Bridge and Verdi Bridge scour projects are planned for the 2018 and 2019 construction seasons. NDOT anticipates these projects will be completed before the in-water work of the Spaghetti Bowl Project begins sometime after 2020. In the event the Nixon Bridge or Verdi Bridge projects are delayed and occur concurrently with the Spaghetti Bowl Project, the total area of excluded habitat not accessible by LCT would increase. Given the small area of the dewatered areas relative to the amount of habitat available in the Truckee River, the cumulative impacts are expected to be minimal, short-term, and therefore insignificant. Additionally, fish salvage activities at multiple projects occurring at the same time may increase the effects of harassment if the same fish were to be handled at multiple project sites. Overall, the mitigation proposed for all NDOT projects would minimize cumulative effects to the greatest extent practical.

5.4.2 Truckee River Flood Management Project

The Truckee River Flood Management Authority is implementing the Truckee River Flood Management Project, the primary goal of which is to create a more resilient community by reducing flood damages. Recreational and ecosystem restoration features will be incorporated within the footprint of the flood protection infrastructure. Environmental enhancement elements include the following:

- Replacing bridges to increase Truckee River channel capacity
- Excavating floodplain terraces to improve floodwater storage
- Restoring ecosystem functions and creating habitat for native species

Some construction has been completed and more is planned as funding becomes available. Approximately 7.6 miles of the Truckee River channel has already been restored. If flood control in-channel work is conducted during the time of the Spaghetti Bowl Project's in-river construction, areas of habitat exclosure would increase and sediment entering the Truckee River could increase. However, given the small area of the exclosure required for the Spaghetti Bowl Project relative to the amount of habitat available in the river, and BMPs to prevent erosion, this impact is expected to be minimal, short-term, and therefore insignificant. Overall permanent cumulative effects would be positive in that the improved river hydraulics with the Spaghetti Bowl Project in combination with the Truckee River Flood Management Project would contribute to the overall health of the Truckee River.

5.4.3 USFWS Fish Passage Projects

The USFWS is planning several fish passage projects upstream and downstream from the project area that would interact with the Spaghetti Bowl Project. If a fish passage project is completed before the in-water work associated with the Spaghetti Bowl Project, the possibility of LCT being in the project area during the timeframe of in-water disturbance activities, and hence potential take, would be higher.

6.0 CONCLUSIONS AND DETERMINATIONS OF EFFECTS

The following are the effect determinations for the threatened LCT and the endangered cui-ui for consideration by the USFWS. These determinations were made based on the assessment of the potential impacts the Spaghetti Bowl Project may have on these fish species, with consideration given to the proposed actions of the project and all of the BMPs and impact avoidance measures anticipated to be implemented.

6.1 LAHONTAN CUTTHROAT TROUT

The FHWA has determined that the project may have the following impacts to LCT within the Truckee River and Pyramid Lake:

- Stocked LCT are known to occur in the Truckee River in the project area. Additionally, with the planned fish passage improvement projects it is possible migratory LCT from Pyramid Lake could move into and through the action and project areas in the near future.

- Constructing the project would result in disturbance to upland areas and streambanks that contribute to in-water sediment within the Truckee River, with the potential to increase sediment loads to the Truckee River that could later be carried down to the delta area in Pyramid Lake. This delta area, at the entrance to the lake, sometimes presents a migration barrier because of the buildup caused by sediment deposition. Additional sediment could contribute to degradation of the habitat conditions for LCT, in the river, and at the entrance area to the lake. These effects only have the potential to occur over the short-term, and they would not persist once construction is completed.

- Using construction equipment adjacent to the river would increase the risk of hazardous spills entering the Truckee River. If a substantial spill were to occur, it could directly adversely affect LCT and/or their resources. These effects only have the potential to occur over the short-term, and they would not persist once construction is completed.

- Using construction equipment near or in the Truckee River presents a known risk of introducing additional numbers of a nonnative invasive aquatic species (e.g., NZMS), which are already present in the river. The invasive species could then propagate in the Truckee River, and possibly Pyramid Lake, and affect food resources for LCT.

- The project would generate a permanent substantial amount of impervious surface adjacent to the Truckee River floodplain, potentially subjecting the river to higher flows and increased contaminated runoff from the roadway, which could degrade LCT habitat in the Truckee River. However, BMPs and proposed stormwater management facilities would minimize this effect. The proposed stormwater facilities would also treat runoff from existing impervious surfaces that does not currently receive

treatment, thereby potentially improving water quality over the long-term, compared to existing conditions.

- The project would include dewatering of the in-water construction zone and implementation of a fish salvage operation.
- The dewatered area would deny access to riverine habitat until construction is completed.
- NDOT may be required to handle LCT that do not move out of the dewatered area on their own. Take related to fish salvage efforts may result in harm, harassment, and potentially mortality (although this is not anticipated).

Therefore, the FHWA recommends the following determination for the project relative to LCT in the action area: ***May Affect, Likely to Adversely Affect.***

6.2 CUI-UI

The FHWA has determined that the project may have the following impacts to cui-ui within the Truckee River and Pyramid Lake:

- With the planned fish passage improvement projects, it is possible migratory cui-ui could move into and through the action and project areas in the near future. However, they would not be expected to be in the project area during the in-water work from July 1 through September 30.
- Constructing the project would result in disturbance to upland areas and streambanks that contribute to in-water sediment within the Truckee River, with the potential to increase sediment loads to the Truckee River that could later be carried down to the delta area in Pyramid Lake. This delta area, at the entrance to the lake, sometimes presents a migration barrier because of the buildup caused by sediment deposition. Additional sediment could contribute to degradation of the habitat conditions for cui-ui, in the river, and at the entrance area to the lake. These effects only have the potential to occur over the short-term, and they would not persist once construction is completed.
- Using construction equipment near or in the Truckee River presents a known risk of introducing additional numbers of a nonnative invasive aquatic species (e.g., NZMS), which are already present in the river. The invasive species could then propagate in the Truckee River, and possibly in Pyramid Lake, and affect food resources for cui-ui.

Therefore, the FHWA recommends the following determination for the project relative to cui-ui in the action area: ***May Affect, Not Likely to Adversely Affect.***

7.0 REFERENCES

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Vogt, S. 2018a. USFWSa. Personal communication (email) to Denny Mengel/CH2M HILL that spawning gravel would not be needed, 3 inches/hour de-watering and re-watering rate at the diversion is acceptable, and that total dissolved solids/alkalinity. natural mercury, and arsenic are constituents that have degraded Pyramid lake. January 3.

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APPENDIX A
USFWS SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
Phone: (775) 861-6300 Fax: (775) 861-6301
http://www.fws.gov/nevada/

In Reply Refer To: December 21, 2017
Consultation Code: 08ENVD00-2017-SLI-0398
Event Code: 08ENVD00-2018-E-00335
Project Name: 74020 I-80 Reno Spaghetti Bowl

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list indicates threatened, endangered, proposed, and candidate species and designated or proposed critical habitat that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act of 1973, as amended (ESA, 16 U.S.C. 1531 et seq.), for projects that are authorized, funded, or carried out by a Federal agency. Candidate species have no protection under the ESA but are included for consideration because they could be listed prior to the completion of your project. Consideration of these species during project planning may assist species conservation efforts and may prevent the need for future listing actions. For additional information regarding species that may be found in the proposed project area, visit http://www.fws.gov/nevada/es/ipac.html.

The purpose of the ESA is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be

prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Guidelines for preparing a Biological Assessment can be found at: http://www.fws.gov/midwest/endangered/section7/ba_guide.html.

If a Federal action agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this species list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally listed, proposed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally, as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation, for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the attached list.

The Nevada Fish and Wildlife Office (NFWO) no longer provides species of concern lists. Most of these species for which we have concern are also on the Animal and Plant At-Risk Tracking List for Nevada (At-Risk list) maintained by the State of Nevada's Natural Heritage Program (Heritage). Instead of maintaining our own list, we adopted Heritage's At-Risk list and are partnering with them to provide distribution data and information on the conservation needs for at-risk species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. In addition, in order to avoid future conflicts, we ask that you consider these at-risk species early in your project planning and explore management alternatives that provide for their long-term conservation.

For a list of at-risk species by county, visit Heritage's website (http://heritage.nv.gov). For a specific list of at-risk species that may occur in the project area, you can obtain a data request form from the website (http://heritage.nv.gov/get_data) or by contacting the Administrator of Heritage at 901 South Stewart Street, Suite 5002, Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your request is being obtained as part of your coordination with the Service under the ESA. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address.

Furthermore, certain species of fish and wildlife are classified as protected by the State of

Nevada (http://www.leg.state.nv.us/NAC/NAC-503.html). You must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (NDOW) to take, or possess any parts of protected fish and wildlife species. Please visit http://www.ndow.org or contact NDOW in northern Nevada (775) 688-1500, in southern Nevada (702) 486-5127, or in eastern Nevada (775) 777-2300.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Service's wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

The Service's Pacific Southwest Region developed the Interim Guidelines for the Development of a Project Specific Avian and Bat Protection Plan for Wind Energy Facilities (Interim Guidelines). This document provides energy facility developers with a tool for assessing the risk of potential impacts to wildlife resources and delineates how best to design and operate a bird- and bat-friendly wind facility. These Interim Guidelines are available upon request from the NFWO. The intent of a Bird and Bat Conservation Strategy is to conserve wildlife resources while supporting project developers through: (1) establishing project development in an adaptive management framework; (2) identifying proper siting and project design strategies; (3) designing and implementing pre-construction surveys; (4) implementing appropriate conservation measures for each development phase; (5) designing and implementing appropriate post-construction monitoring strategies; (6) using post-construction studies to better understand the dynamics of mortality reduction (e.g., changes in blade cut-in speed, assessments of blade “feathering” success, and studies on the effects of visual and acoustic deterrents) including efforts tied into Before-After/Control-Impact analysis; and (7) conducting a thorough risk assessment and validation leading to adjustments in management and mitigation actions.

The template and recommendations set forth in the Interim Guidelines were based upon the Avian Powerline Interaction Committee's Avian Protection Plan template (http://www.aplic.org/) developed for electric utilities and modified accordingly to address the unique concerns of wind energy facilities. These recommendations are also consistent with the Service's wind energy guidelines. We recommend contacting us as early as possible in the planning process to discuss the need and process for developing a site-specific Bird and Bat Conservation Strategy.

The Service has also developed guidance regarding wind power development in relation to prairie grouse leks (sage-grouse are included in this). This document can be found at: http://www.fws.gov/southwest/es/Oklahoma/documents/te_species/wind%20power/prairie%20gr
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Migratory Birds are a Service Trust Resource. Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918, as amended (MBTA; 16 U.S.C. 703 et seq.), we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to avoid potential destruction of bird nests or young, or birds that breed in the area. Such

destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Guidance for minimizing impacts to migratory birds for projects involving communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

If wetlands, springs, or streams are are known to occur in the project area or are present in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (ACOE) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the ACOE's Regulatory Section regarding the possible need for a permit. For projects located in northern Nevada (Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, and Washoe Counties) contact the Reno Regulatory Office at 300 Booth Street, Room 3060, Reno, Nevada 89509, (775) 784-5304; in southern Nevada (Clark, Lincoln, Nye, and White Pine Counties) contact the St. George Regulatory Office at 321 North Mall Drive, Suite L-101, St. George, Utah 84790-7314, (435) 986-3979; or in California along the eastern Sierra contact the Sacramento Regulatory Office at 650 Capitol Mall, Suite 5-200, Sacramento, California 95814, (916) 557-5250.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

The table below outlines lead FWS field offices by county and land ownership/project type. Please refer to this table when you are ready to coordinate (including requests for section 7 consultation) with the field office corresponding to your project, and send any documentation regarding your project to that corresponding office. Therefore, the lead FWS field office may not be the office listed above in the letterhead.

Lead FWS offices by County and Ownership/Program

County	Ownership/Program	Species	Office Lead*
Alameda	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO

Alameda	All ownerships but tidal/estuarine	All	SFWO
Alpine	Humboldt Toiyabe National Forest	All	RFWO
Alpine	Lake Tahoe Basin Management Unit	All	RFWO
Alpine	Stanislaus National Forest	All	SFWO
Alpine	El Dorado National Forest	All	SFWO
Colusa	Mendocino National Forest	All	AFWO
Colusa	Other	All	By jurisdiction (see map)
Contra Costa	Legal Delta (Excluding ECCHCP)	All	BDFWO
Contra Costa	Antioch Dunes NWR	All	BDFWO
Contra Costa	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Contra Costa	All ownerships but tidal/estuarine	All	SFWO
Del Norte	All	All	AFWO
El Dorado	El Dorado National Forest	All	SFWO
El Dorado	LakeTahoe Basin Management Unit		RFWO
Glenn	Mendocino National Forest	All	AFWO
Glenn	Other	All	By jurisdiction (see map)
Humboldt	All except Shasta Trinity National Forest	All	AFWO
Humboldt	Shasta Trinity National Forest	All	YFWO
Lake	Mendocino National Forest	All	AFWO

Lake	Other	All	By jurisdiction (see map)
Lassen	Modoc National Forest	All	KFWO
Lassen	Lassen National Forest	All	SFWO
Lassen	Toiyabe National Forest	All	RFWO
Lassen	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Lassen	BLM Alturas Resource Area	All	KFWO
Lassen	Lassen Volcanic National Park	All (includes Eagle Lake trout on all ownerships)	SFWO
Lassen	All other ownerships	All	By jurisdiction (see map)
Marin	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Marin	All ownerships but tidal/estuarine	All	SFWO
Mendocino	Russian River watershed	All	SFWO
Mendocino	All except Russian River watershed	All	AFWO
Modoc	Modoc National Forest	All	KFWO
Modoc	BLM Alturas Resource Area	All	KFWO
Modoc	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Modoc	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Modoc	All other ownerships	All	By jurisdiction (See map)
Mono	Inyo National Forest	All	RFWO

Mono	Humboldt Toiyabe National Forest	All	RFWO
Napa	All ownerships but tidal/estuarine	All	SFWO
Napa	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Nevada	Humboldt Toiyabe National Forest	All	RFWO
Nevada	All other ownerships	All	By jurisdiction (See map)
Placer	Lake Tahoe Basin Management Unit	All	RFWO
Placer	All other ownerships	All	SFWO
Sacramento	Legal Delta	Delta Smelt	BDFWO
Sacramento	Other	All	By jurisdiction (see map)
San Francisco	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Francisco	All ownerships but tidal/estuarine	All	SFWO
San Mateo	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Mateo	All ownerships but tidal/estuarine	All	SFWO
San Joaquin	Legal Delta excluding San Joaquin HCP	All	BDFWO
San Joaquin	Other	All	SFWO
Santa Clara	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta	BDFWO

		smelt	
Santa Clara	All ownerships but tidal/estuarine	All	SFWO
Shasta	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Shasta	Hat Creek Ranger District	All	SFWO
Shasta	Bureau of Reclamation (Central Valley Project)	All	BDFWO
Shasta	Whiskeytown National Recreation Area	All	YFWO
Shasta	BLM Alturas Resource Area	All	KFWO
Shasta	Caltrans	By jurisdiction	SFWO/AFWO
Shasta	Ahjumawi Lava Springs State Park	Shasta crayfish	SFWO
Shasta	All other ownerships	All	By jurisdiction (see map)
Shasta	Natural Resource Damage Assessment, all lands	All	SFWO/BDFWO
Sierra	Humboldt Toiyabe National Forest	All	RFWO
Sierra	All other ownerships	All	SFWO
Siskiyou	Klamath National Forest (except Ukonom District)	All	YFWO
Siskiyou	Six Rivers National Forest and Ukonom District	All	AFWO
Siskiyou	Shasta Trinity National Forest	All	YFWO
Siskiyou	Lassen National Forest	All	SFWO
Siskiyou	Modoc National Forest	All	KFWO

Siskiyou	Lava Beds National Volcanic Monument	All	KFWO
Siskiyou	BLM Alturas Resource Area	All	KFWO
Siskiyou	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Siskiyou	All other ownerships	All	By jurisdiction (see map)
Solano	Suisun Marsh	All	BDFWO
Solano	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Solano	All ownerships but tidal/estuarine	All	SFWO
Solano	Other	All	By jurisdiction (see map)
Sonoma	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Sonoma	All ownerships but tidal/estuarine	All	SFWO
Tehama	Mendocino National Forest	All	AFWO
Tehama	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Tehama	All other ownerships	All	By jurisdiction (see map)
Trinity	BLM	All	AFWO
Trinity	Six Rivers National Forest	All	AFWO
Trinity	Shasta Trinity National Forest	All	YFWO
Trinity	Mendocino National Forest	All	AFWO
Trinity	BIA (Tribal Trust Lands)	All	AFWO

Trinity	County Government	All	AFWO
Trinity	All other ownerships	All	By jurisdiction (See map)
Yolo	Yolo Bypass	All	BDFWO
Yolo	Other	All	By jurisdiction (see map)
All	FERC-ESA	All	By jurisdiction (see map)
All	FERC-ESA	Shasta crayfish	SFWO
All	FERC-Relicensing (non-ESA)	All	BDFWO

***Office Leads:**

AFWO=Arcata Fish and Wildlife Office

BDFWO=Bay Delta Fish and Wildlife Office

KFWO=Klamath Falls Fish and Wildlife Office

RFWO=Reno Fish and Wildlife Office

YFWO=Yreka Fish and Wildlife Office

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
(775) 861-6300

Project Summary

Consultation Code: 08ENVD00-2017-SLI-0398

Event Code: 08ENVD00-2018-E-00335

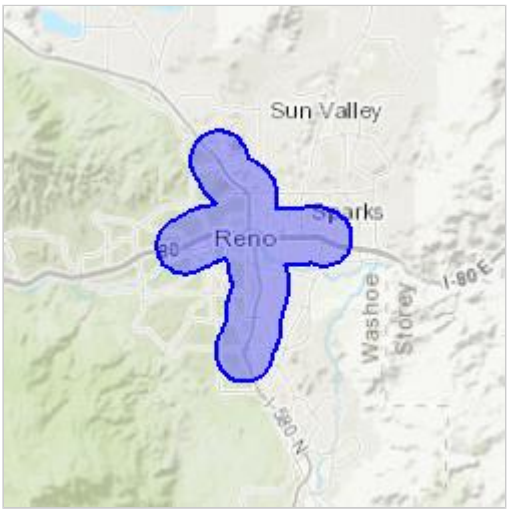
Project Name: 74020 I-80 Reno Spaghetti Bowl

Project Type: TRANSPORTATION

Project Description: Redesign and expansion of the Reno Spaghetti Bowl. Interstate intersections between I-80 and I-580.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.523857255512766N119.7859655418151W



Counties: Washoe, NV

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
North American Wolverine *Gulo gulo luscus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5123	Proposed Threatened

Fishes

NAME	STATUS
Cui-ui *Chasmistes cujus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/456	Endangered
Lahontan Cutthroat Trout *Oncorhynchus clarkii henshawi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3964 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/233/office/14320.pdf	Threatened

Flowering Plants

NAME	STATUS
Steamboat Buckwheat *Eriogonum ovalifolium var. williamsiae* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/413	Endangered
Webber's Ivesia *Ivesia webberi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4682	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S

JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or are known to have particular vulnerabilities in your project location. To learn more about the levels of concern for birds on your list, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your specific project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the E-bird data mapping tool (search for the scientific name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain time-frame) and the E-bird Explore Data Tool (perform a query to see a list of all birds sighted in your county or region and within a certain time-frame). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC), but is of concern in this area either because of the Eagle Act, or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Mar 20 to Sep 15
Black Swift *Cypseloides niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Brewer's Sparrow *Spizella breweri*	Breeds

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9291	May 15 to Aug 10
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31
Golden Eagle *Aquila chrysaetos* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/1680	Breeds Apr 1 to Aug 31
Green-tailed Towhee *Pipilo chlorurus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9444	Breeds May 1 to Aug 10
Long-billed Curlew *Numenius americanus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds Apr 1 to Jul 31
Lewis's Woodpecker *Melanerpes lewis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Pinyon Jay *Gymnorhinus cyanocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9420	Breeds Feb 15 to Jul 15
Sagebrush Sparrow *Artemisiospiza nevadensis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 15 to Jul 31

Sage Thrasher *Oreoscoptes montanus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9433	Breeds Apr 15 to Aug 10
White Headed Woodpecker *Picoides albolarvatus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9411	Breeds May 1 to Aug 15
Willow Flycatcher *Empidonax traillii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482	Breeds May 20 to Aug 31
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Williamson's Sapsucker *Sphyrapicus thyroideus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8832	Breeds May 1 to Jul 31

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeas

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

FRESHWATER EMERGENT WETLAND

- PEMB
- PEMC
- PEMA
- PEMFx
- PEMCx

FRESHWATER FORESTED/SHRUB WETLAND

- PFOB
- PSSB
- PFOC
- PSSC
- PSSA

FRESHWATER POND

- PUBHx
- PUBFx
- PABHx
- PUBHh
- PUBKx

LAKE

- L1UBHx

OTHER

- PUSAh
- PUSAx
- PUSCx

RIVERINE

- R3USA
- R3UBH

APPENDIX B
NNHP SENSITIVE SPECIES COMMUNICATION AND DATA

Nevada Natural Heritage Program

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
Nevada Natural Heritage Program

Brian Sandoval
Governor

Bradley Crowell
Director

Kristin Szabo
Administrator

06 June 2017

Nova Simpson
Environmental Services Division
Nevada Department of Transportation
1263 South Stewart Street
Carson City, NV 89701

RE: Data request received 05 June 2017

Dear Ms. Simpson:

We are pleased to provide the information you requested on endangered, threatened, candidate, and/or at risk plant and animal taxa recorded on or near the 74020, Reno Spaghetti Bowl Project in Washoe County. We searched our database and maps for the following, a two kilometer radius around shapefile provided including:

Township 20N Range 19E Sections 23-25, 35, and 36
Township 20N Range 20E Sections 30-32
Township 19N Range 19E Sections 01-03, 09-13, 24-26, 35, and 36
Township 19N Range 20E Sections 03-10, 17-20, and 29-31

The enclosed printout lists the taxa recorded within the given area. Please be aware that habitat may also be available for, the Osprey, *Pandion haliaetus*, a Taxon determined to be Critically Imperiled by the Nevada Natural Heritage Program. The Lahontan cutthroat trout, *Oncorhynchus clarkii henshawi*, a Federally Threatened Taxon, the cui-ui, *Chasmistes cujus*, a Federally Endangered Taxon, and the California floater, *Anodonta californiensis*, a Nevada Bureau of Land Management and a United States Forest Service (Region 5) Sensitive Species, occur in the Truckee River and should be considered if disturbances are anticipated in the area. The Nevada Department of Wildlife (NDOW) manages, protects, and restores Nevada's wildlife resources and associated habitat. Please contact Bonnie Weller, NDOW GIS Biologist (775) 688-1439, to obtain further information regarding wildlife resources within and near your area of interest. Removal or destruction of state protected flora species (NAC 527.010) requires a special permit from Nevada Division of Forestry (NRS 527.270).

Please note that our data are dependent on the research and observations of many individuals and organizations and in most cases are not the result of comprehensive or site-specific field surveys. Natural Heritage reports should never be regarded as final statements on the taxa or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Thank you for checking with our program. Please contact us for additional information or further assistance.

Sincerely,

Eric S. Miskow
Biologist/Data Manager

At Risk Taxa Recorded Near the 74020 Reno Spaghetti Bowl Project Area in Washoe Co.

Compiled by the Nevada Natural Heritage Program for the Nevada Department of Transportation
06 June 2017

Scientific name	Common name	Usfws	Blm	Usfs	State	Srank	Grank	UTM E	UTM N	Loc Uncert	Uncert Dist (m)	Last Obs
Plants												
Cusickiella douglasii	Douglas draba					S4	G4G5	256760.61	4386630.84	Estimated	1609	1905-02-10
Diplacus ovatus	Steamboat monkeyflower					S1S2	G1G2Q	251865.42	4382187.76	Estimated	9656	1984-PRE
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259006.15	4384705.40	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	260079.43	4384991.03	Estimated	30	1971-06-24
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	260060.31	4385151.79	Estimated	30	1971-06-24
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259868.59	4385195.61	Estimated	30	1971-06-24
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259810.14	4385127.59	Estimated	30	1971-06-24
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259810.68	4385041.05	Estimated	30	1971-06-24
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	260064.53	4385110.55	Estimated	30	1971-06-24
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259268.55	4384882.39	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259415.68	4384785.40	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259271.95	4384838.99	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259107.27	4384492.94	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	258932.01	4384466.91	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	258902.37	4383740.62	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	260137.62	4385405.54	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259794.35	4384393.04	Estimated	30	1980-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259304.79	4384431.73	Estimated	30	1980-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259644.89	4384528.80	Estimated	30	1980-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259500.52	4384510.55	Estimated	30	1980-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259798.76	4384576.02	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	260034.51	4384496.60	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259911.09	4384457.88	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	258382.23	4384772.12	Estimated	30	1997-04-16
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259565.34	4385006.95	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259310.90	4383809.40	Estimated	30	1994-06-03
Eriogonum robustum	altered andesite buckwheat		S	R4S		S2	G2G3	259163.43	4383765.60	Estimated	30	1994-06-03
Plagiobothrys glomeratus	altered andesite popcorn flower		S	R4S		S2	G2G3	259284.27	4384853.89	Estimated	161	1998-06-21
Plagiobothrys glomeratus	altered andesite popcorn flower		S	R4S		S2	G2G3	259843.78	4385947.58	Estimated	1609	1999-PRE
Invertebrates												
Euphydryas editha monoensis	Mono checkerspot			R5S		S1	G5T2T3	260760.73	4379345.44	Estimated	3000	1918-05-10
Reptiles												
Actinemys marmorata	western pond turtle			R5S		S2	G3G4	262152.72	4377975.17	Estimated	5000	1905-04-24

Scientific name	Common name	Usfws	Blm	Usfs	State	Srank	Grank	UTM E	UTM N	Loc Uncert	Uncert Dist (m)	Last Obs
Mammals												
Euderma maculatum	spotted bat		S	R4S	TM	S2	G4	258162.08	4380290.03	Estimated	161	1922-09-10
Euderma maculatum	spotted bat		S	R4S	TM	S2	G4	258032.59	4378442.23	Estimated	1609	1965-09-14
Euderma maculatum	spotted bat		S	R4S	TM	S2	G4	261231.84	4378311.69	Estimated	161	1987-09-23
Birds												
Agelaius tricolor	Tricolored Blackbird					S1B	G1G2	258032.59	4378442.23	Estimated	4000	1972-03-09

Bureau of Land Management (Blm) Species Classification:

S Sensitive Species- Species designated Sensitive by State Director of Nevada BLM

United States Forest Service (Usfs) Species Classification:

R4S Region 4 (Humboldt-Toiyabe National Forest) Sensitive
R5S Region 5 (Inyo National Forest or Lake Tahoe Basin Management Unit) Sensitive or Watch Status

Nevada State Protected (State) Species Classification:

Fauna:
TM Threatened Mammal (NAC 503.030.2)

Locational Uncertainty:

Based on the uncertainty associated with the underlying information on the location of the observation.

Estimated uncertainty varies in more than one dimension; true location of the observation can be visualized as floating within an area for which boundaries cannot be specifically delimited

Negligible uncertainty based on a comprehensive field survey with high quality mapping, if the uncertainty associated with the underlying observation is less than or equal to 4.5 meters in any direction

Nevada Natural Heritage Program Global (**Grank**) and State (**Srank**) Ranks for Threats and/or Vulnerability:

G Global rank indicator, based on worldwide distribution at the species level
T Global trinomial rank indicator, based on worldwide distribution at the infraspecific level
S State rank indicator, based on distribution within Nevada at the lowest taxonomic level
- l Critically imperiled and especially vulnerable to extinction or extirpation due to extreme rarity, imminent threats, or other factors
- 2 Imperiled due to rarity or other demonstrable factors
- 3 Vulnerable to decline because rare and local throughout its range, or with very restricted range
- 4 Long-term concern, though now apparently secure; usually rare in parts of its range, especially at its periphery
- 5 Demonstrably secure, widespread, and abundant
  - A Accidental within Nevada
  - B Breeding status within Nevada (excludes resident taxa)
  - H Historical; could be rediscovered
  - N Non-breeding status within Nevada (excludes resident taxa)
  - Q Taxonomic status uncertain
  - U Unrankable
  - Z Enduring occurrences cannot be defined (usually given to migrant or accidental birds)
  - ? Assigned rank uncertain

APPENDIX C
SECTION 7 INFORMAL CONSULTATION/COORDINATION

Freese 2017

From: Mark Freese
To: Mengel, Denny/BOI; Kim Tisdale
Cc: Simpson, Nova O; Webb, Charlie/MKE
Subject: RE: Spaghetti Bowl Sensitive Species
Date: Tuesday, November 28, 2017 12:58:19 PM

Denny,
The list look sufficient from our perspective. As for the fish species, NDOW recommends that ***in-river*** work on the Truckee River be conducted between July 1 and September 30 to avoid impacts to spring and fall spawning fish.

Thanks

Mark Freese, Habitat Biologist
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1145
markfreese@ndow.org

Support Nevada's Wildlife…Buy a Hunting and Fishing License

From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Friday, November 3, 2017 2:35 PM
To: Mark Freese; Kim Tisdale
Cc: Simpson, Nova O; Webb, Charlie/MKE
Subject: Spaghetti Bowl Sensitive Species

Hi Mark and Kim: At a recent meeting between NDOT and NDOW (Alan Jenne [Habitat Division Chief] and Jon Sjoberg [Fisheries Division]), Alan and Jon requested that NDOT send the state and federal sensitive and listed species list being considered for evaluation in the EIS to you and Kim for vetting. The attached list was extracted from the NNHP Tracked Species Only list for Washoe County. I deleted species on that list that would not be expected to be in the project area. Through discussions between NDOT and USFWS, only Lahontan cutthroat trout and Cui-ui need to be included in Section 7 consultation. I think the attached list has a number of species on it that will not be found in the project area, but I wanted to include any that might remotely have habitat in this first cut. Please feel free to remove or add species to this list based on your work in the project area. I will include the final list in the EIS analysis. Have a good weekend.
Thanks
Denny

Denny Mengel, Ph.D., CPSS, CF
Principal Ecosystems Management and Planning Technologist
CH2M
322 E. Front St., Ste 200

Boise, ID 83702
D 208.383.6202
F 208.345-5315
M 208.841.0733
www.ch2mhill.com

Hawks 2017

From: Travis Hawks
To: Mark Freese
Cc: Kim Tisdale
Subject: RE: Spaghetti Bowl Sensitive Species
Date: Tuesday, December 19, 2017 11:54:19 AM
Attachments: image001.jpg
image003.jpg

Hey Mark,
Basically, for these types of projects, the FWS considers the entire Truckee below Mogul "occupied" because they have been stocking them throughout for the last two years. Realistically the chances of any negative impacts or take is slim to none but the possibility exists that one or two are holding in those areas. The closest place we sampled any during this year's survey was at Crystal Peak (Verdi). I could provide a list of stocking locations and numbers but that will take some time to compile.

Let me know.

Travis Hawks, Fisheries Biologist
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1677
(775) 230-0844 Cell
thawks@ndow.org

From: Mark Freese
Sent: Tuesday, December 19, 2017 11:43 AM
To: Travis Hawks
Cc: Kim Tisdale
Subject: FW: Spaghetti Bowl Sensitive Species

Trav,
Can you help?

Thanks

Mark Freese, Habitat Biologist
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1145

markfreese@ndow.org

Support Nevada's Wildlife…Buy a Hunting and Fishing License

From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Tuesday, December 19, 2017 11:21 AM
To: Mark Freese
Subject: RE: Spaghetti Bowl Sensitive Species

Hi Mark: In Nova's review of the BA, she wants more detail on where LCT are currently thought to occur in the Truckee and near the spaghetti bowl project area. She suggested I contact you. Does NDOW have any information that could be used to fill in that blank? Thanks

Denny Mengel, Ph.D., CF, CPSS
Principal Habitat Management and Planning Technologist
Agile-1
HKA

From: Mark Freese [mailto:markfreese@ndow.org]
Sent: Tuesday, November 28, 2017 1:58 PM
To: Mengel, Denny/BOI <Denny.Mengel@CH2M.com>; Kim Tisdale <ktisdale@ndow.org>
Cc: Simpson, Nova O <NSimpson@dot.nv.gov>; Webb, Charlie/MKE <Charlie.Webb@CH2M.com>
Subject: RE: Spaghetti Bowl Sensitive Species [EXTERNAL]

Denny,
The list look sufficient from our perspective. As for the fish species, NDOW recommends that ***in-river*** work on the Truckee River be conducted between July 1 and September 30 to avoid impacts to spring and fall spawning fish.

Thanks

Mark Freese, Habitat Biologist
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1145
markfreese@ndow.org

Support Nevada's Wildlife…Buy a Hunting and Fishing License

From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]

Sent: Friday, November 3, 2017 2:35 PM
To: Mark Freese; Kim Tisdale
Cc: Simpson, Nova O; Webb, Charlie/MKE
Subject: Spaghetti Bowl Sensitive Species

Hi Mark and Kim: At a recent meeting between NDOT and NDOW (Alan Jenne [Habitat Division Chief] and Jon Sjoberg [Fisheries Division]), Alan and Jon requested that NDOT send the state and federal sensitive and listed species list being considered for evaluation in the EIS to you and Kim for vetting. The attached list was extracted from the NNHP Tracked Species Only list for Washoe County. I deleted species on that list that would not be expected to be in the project area. Through discussions between NDOT and USFWS, only Lahontan cutthroat trout and Cui-ui need to be included in Section 7 consultation. I think the attached list has a number of species on it that will not be found in the project area, but I wanted to include any that might remotely have habitat in this first cut. Please feel free to remove or add species to this list based on your work in the project area. I will include the final list in the EIS analysis. Have a good weekend.
Thanks
Denny

Denny Mengel, Ph.D., CPSS, CF
Principal Ecosystems Management and Planning Technologist
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322 E. Front St., Ste 200
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F 208.345-5315
M 208.841.0733
www.ch2mhill.com

Hawks 2018

From:	Travis Hawks
To:	Mengel, Denny/BOI
Subject:	RE: Spaghetti Bowl Sensitive Species [EXTERNAL]
Date:	Friday, February 02, 2018 12:58:31 PM
Attachments:	image002.jpg image003.jpg Truckee stocking 16 and 17.xlsx

Hi Denny,
Yes, the USFWS has been stocking LCT since 2016. I've attached the stocking records for the last two years from our database. Hope this helps.

Travis Hawks, Fisheries Biologist
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1677
(775) 230-0844 Cell
thawks@ndow.org

From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Friday, February 02, 2018 12:53 PM
To: Travis Hawks
Cc: Mark Freese; CH2MHILL RSB
Subject: RE: Spaghetti Bowl Sensitive Species

Hi Travis: I was reading the 2015 Truckee River Annual Progress Report survey and saw that no LCT stocking occurred since 2011 and then in 2015 it was not stocked due to drought. From your email below, was LCT stocking continued in 2016 and 2017? Thanks

Denny Mengel, Ph.D., CF, CPSS
Principal Habitat Management and Planning Technologist
CH2M is now Jacobs

From: Travis Hawks [mailto:thawks@ndow.org]
Sent: Tuesday, December 19, 2017 12:54 PM
To: Mark Freese <markfreese@ndow.org>
Cc: Kim Tisdale <ktisdale@ndow.org>
Subject: RE: Spaghetti Bowl Sensitive Species

Hey Mark,
Basically, for these types of projects, the FWS considers the entire Truckee below Mogul "occupied"

because they have been stocking them throughout for the last two years. Realistically the chances of any negative impacts or take is slim to none but the possibility exists that one or two are holding in those areas. The closest place we sampled any during this year's survey was at Crystal Peak (Verdi). I could provide a list of stocking locations and numbers but that will take some time to compile.

Let me know.

Travis Hawks, Fisheries Biologist
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1677
(775) 230-0844 Cell
thawks@ndow.org

From: Mark Freese
Sent: Tuesday, December 19, 2017 11:43 AM
To: Travis Hawks
Cc: Kim Tisdale
Subject: FW: Spaghetti Bowl Sensitive Species

Trav,
Can you help?

Thanks

Mark Freese, Habitat Biologist
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1145
markfreese@ndow.org

Support Nevada's Wildlife…Buy a Hunting and Fishing License

From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Tuesday, December 19, 2017 11:21 AM

To: Mark Freese
Subject: RE: Spaghetti Bowl Sensitive Species

Hi Mark: In Nova's review of the BA, she wants more detail on where LCT are currently thought to occur in the Truckee and near the spaghetti bowl project area. She suggested I contact you. Does NDOW have any information that could be used to fill in that blank? Thanks

Denny Mengel, Ph.D., CF, CPSS
Principal Habitat Management and Planning Technologist
Agile-1
HKA

From: Mark Freese [mailto:markfreese@ndow.org]
Sent: Tuesday, November 28, 2017 1:58 PM
To: Mengel, Denny/BOI <Denny.Mengel@CH2M.com>; Kim Tisdale <ktisdale@ndow.org>
Cc: Simpson, Nova O <NSimpson@dot.nv.gov>; Webb, Charlie/MKE <Charlie.Webb@CH2M.com>
Subject: RE: Spaghetti Bowl Sensitive Species [EXTERNAL]

Denny,
The list look sufficient from our perspective. As for the fish species, NDOW recommends that ***in-river*** work on the Truckee River be conducted between July 1 and September 30 to avoid impacts to spring and fall spawning fish.

Thanks

Mark Freese, Habitat Biologist
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1145
markfreese@ndow.org

Support Nevada's Wildlife…Buy a Hunting and Fishing License

From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Friday, November 3, 2017 2:35 PM
To: Mark Freese; Kim Tisdale
Cc: Simpson, Nova O; Webb, Charlie/MKE
Subject: Spaghetti Bowl Sensitive Species

Hi Mark and Kim: At a recent meeting between NDOT and NDOW (Alan Jenne [Habitat Division Chief] and Jon Sjoberg [Fisheries Division]), Alan and Jon requested that NDOT send the state and federal sensitive and listed species list being considered for evaluation in the EIS to you and Kim for vetting. The attached list was extracted from the NNHP Tracked Species Only list for Washoe County. I deleted species on that list that would not be expected to be in the project area. Through

discussions between NDOT and USFWS, only Lahontan cutthroat trout and Cui-ui need to be included in Section 7 consultation. I think the attached list has a number of species on it that will not be found in the project area, but I wanted to include any that might remotely have habitat in this first cut. Please feel free to remove or add species to this list based on your work in the project area. I will include the final list in the EIS analysis. Have a good weekend.
Thanks
Denny

Denny Mengel, Ph.D., CPSS, CF
Principal Ecosystems Management and Planning Technologist
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Boise, ID 83702
D 208.383.6202
F 208.345-5315
M 208.841.0733
www.ch2mhill.com

qry_StockingDatabaseWatersStocked

WaterName	WaterCode	County	SpeciesCode	Strain	SumOfNumberPlanted	SumOfPoundsPlanted	AvgOfAverageSize	Source	StockDate
TRUCKEE RIVER	2019	WA	RB	TRIPLOID	5948	1975	9.4	MASON VALLEY HATCHERY	3/30/2016
TRUCKEE RIVER	2019	WA	RB	TRIPLOID	6498	1975	9.1	MASON VALLEY HATCHERY	4/20/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	3561	1190	9.85	LAHONTAN NATIONAL FISH HATCHERY	4/28/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	4525	1220	9.17	LAHONTAN NATIONAL FISH HATCHERY	5/4/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	4499	1220	8.06	LAHONTAN NATIONAL FISH HATCHERY	5/5/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	4763	1175	8.9	LAHONTAN NATIONAL FISH HATCHERY	5/10/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	4575	1200	9.08	LAHONTAN NATIONAL FISH HATCHERY	5/11/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	2652	450	7.86	LAHONTAN NATIONAL FISH HATCHERY	5/17/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	2652	450	7.86	LAHONTAN NATIONAL FISH HATCHERY	5/19/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	4500	1075	8.8	LAHONTAN NATIONAL FISH HATCHERY	5/25/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	4476	1075	8.89	LAHONTAN NATIONAL FISH HATCHERY	5/31/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	4458	1200	9.16	LAHONTAN NATIONAL FISH HATCHERY	6/1/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	3289	550	7.82	LAHONTAN NATIONAL FISH HATCHERY	6/7/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	3289	550	7.82	LAHONTAN NATIONAL FISH HATCHERY	6/8/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	5004	900	8.1	LAHONTAN NATIONAL FISH HATCHERY	6/14/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	4844	1050	8.53	LAHONTAN NATIONAL FISH HATCHERY	6/15/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	200	58	9.41	LAHONTAN NATIONAL FISH HATCHERY	6/20/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	3855	1125	9.41	LAHONTAN NATIONAL FISH HATCHERY	6/21/2016
TRUCKEE RIVER	2019	WA	RB	TRIPLOID	6650	1900	8.9	MASON VALLEY HATCHERY	8/23/2016
TRUCKEE RIVER	2019	WA	RB	TRIPLOID	5960	2000	9.4	MASON VALLEY HATCHERY	9/7/2016
TRUCKEE RIVER	2019	WA	RB	TRIPLOID	5129	1950	9.8	MASON VALLEY HATCHERY	9/15/2016
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	5680	1500	9.1	LAHONTAN NATIONAL FISH HATCHERY	6/19/2017
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	3130	500	7.7	LAHONTAN NATIONAL FISH HATCHERY	6/21/2017
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	9727	2350	9.45	LAHONTAN NATIONAL FISH HATCHERY	6/30/2017
TRUCKEE RIVER	2019	WA	CT	PILOT PEAK	30040	346	3.2	LAHONTAN NATIONAL FISH HATCHERY	7/27/2017
TRUCKEE RIVER	2019	WA	RB	TRIPLOID	4620	1500	9.3	MASON VALLEY HATCHERY	8/8/2017
TRUCKEE RIVER	2019	WA	RB	TRIPLOID	2000	627	9.2	MASON VALLEY HATCHERY	9/11/2017
TRUCKEE RIVER	2019	WA	RB	TRIPLOID	4000	1254	9.2	MASON VALLEY HATCHERY	9/14/2017

Mengel 2017a

From:	Mengel, Denny/BOI
To:	markfreese@ndow.org; ktisdale@ndow.org
Cc:	Simpson, Nova O; Webb, Charlie/MKE
Subject:	Spaghetti Bowl Sensitive Species
Date:	Friday, November 03, 2017 2:34:00 PM
Attachments:	NNHP at-risk species list_rev2.xlsx

Hi Mark and Kim: At a recent meeting between NDOT and NDOW (Alan Jenne [Habitat Division Chief] and Jon Sjoberg [Fisheries Division]), Alan and Jon requested that NDOT send the state and federal sensitive and listed species list being considered for evaluation in the EIS to you and Kim for vetting. The attached list was extracted from the NNHP Tracked Species Only list for Washoe County. I deleted species on that list that would not be expected to be in the project area. Through discussions between NDOT and USFWS, only Lahontan cutthroat trout and Cui-ui need to be included in Section 7 consultation. I think the attached list has a number of species on it that will not be found in the project area, but I wanted to include any that might remotely have habitat in this first cut. Please feel free to remove or add species to this list based on your work in the project area. I will include the final list in the EIS analysis. Have a good weekend.
Thanks
Denny

Denny Mengel, Ph.D., CPSS, CF
Principal Ecosystems Management and Planning Technologist
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322 E. Front St., Ste 200
Boise, ID 83702
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F 208.345-5315
M 208.841.0733
www.ch2mhill.com

Mengel 2017b

From:	Mengel, Denny/BOI
To:	"Vogt, Sean"
Subject:	RE: Spaghetti Bowl [EXTERNAL]
Date:	Saturday, December 16, 2017 1:57:00 PM

Thanks Sean. Do you happen to know which chemical constituents were referred to in the 4th major impact to LCT habitat and abundance in the recovery plan?

4) reduction of lake levels and concentrated chemical components in natural lakes;

Denny Mengel, Ph.D., CF, CPSS
Principal Habitat Management and Planning Technologist
Agile-1
HKA

From: Vogt, Sean [mailto:sean_vogt@fws.gov]
Sent: Friday, December 15, 2017 3:00 PM
To: Mengel, Denny/BOI <Denny.Mengel@CH2M.com>
Subject: Re: Spaghetti Bowl [EXTERNAL]

Denny,

I will reach out to our fish passage program coordinator for the region and see what he has that he can share!

Thanks,

Sean Vogt
Fish Recovery Biologist
Reno US Fish & Wildlife Service Office
(775) 861-6330

On Fri, Dec 15, 2017 at 1:12 PM, Mengel, Denny/BOI <Denny.Mengel@ch2m.com> wrote:

> Hi Sean: We got NDOT comments on the BA. One of them referred to the upcoming USFWS/NDFW work on the River to improve LCT and cui-ui fish passage and habitat. Nova sent me a couple USFWS articles talking about the proposed program, but she wanted me to contact you to see if there were any specific plans I should be referring to. She wanted this information as she wants me to anticipate the species returning to the project area as passage is developed. So specifics would help my analysis. Thanks for any help you can provide.
>
> Denny Mengel, Ph.D., CF, CPSS
> Principal Habitat Management and Planning Technologist
> Agile-1
> HKA
> 88 S. Cotterell Dr.

Boise, ID 83709
208-841-0733

Please consider printing this email to support American renewable natural resources

Mengel 2017c

From: Mengel, Denny/BOI
To: "Vogt, Sean"
Subject: BA
Date: Sunday, December 17, 2017 10:20:00 AM

Hi Sean: Sorry for the multiple emails. I have so many comments, that I keep finding questions for the Service in their comments.

Even though there is no CLT spawning habitat at the bride, would the Service like NDOT to place spawning gravel in the dewatered area so it can naturally re-distribute downstream after re-watering? If so, do you have a depth that would be acceptable.

Also, we are removing the water from the dewatered area at a rate of 1-3 inches per hour. Do you think that is an acceptable rate to re-water the area as the diversion is removed?

Thanks

Denny Mengel, Ph.D., CF, CPSS
Principal Habitat Management and Planning Technologist
Agile-1
HKA
88 S. Cotterell Dr.
Boise, ID 83709
208-841-0733

Mengel 2017d

From:	Mengel, Denny/BOI
To:	"Mark Freese"
Subject:	RE: Spaghetti Bowl Sensitive Species [EXTERNAL]
Date:	Tuesday, December 19, 2017 11:21:00 AM
Attachments:	image002.jpg

Hi Mark: In Nova's review of the BA, she wants more detail on where LCT are currently thought to occur in the Truckee and near the spaghetti bowl project area. She suggested I contact you. Does NDOW have any information that could be used to fill in that blank? Thanks

Denny Mengel, Ph.D., CF, CPSS
Principal Habitat Management and Planning Technologist
Agile-1
HKA

From: Mark Freese [mailto:markfreese@ndow.org]
Sent: Tuesday, November 28, 2017 1:58 PM
To: Mengel, Denny/BOI <Denny.Mengel@CH2M.com>; Kim Tisdale <ktisdale@ndow.org>
Cc: Simpson, Nova O <NSimpson@dot.nv.gov>; Webb, Charlie/MKE <Charlie.Webb@CH2M.com>
Subject: RE: Spaghetti Bowl Sensitive Species [EXTERNAL]

Denny,
The list look sufficient from our perspective. As for the fish species, NDOW recommends that ***in-river*** work on the Truckee River be conducted between July 1 and September 30 to avoid impacts to spring and fall spawning fish.

Thanks

Mark Freese, Habitat Biologist
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1145
markfreese@ndow.org

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From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Friday, November 3, 2017 2:35 PM
To: Mark Freese; Kim Tisdale
Cc: Simpson, Nova O; Webb, Charlie/MKE
Subject: Spaghetti Bowl Sensitive Species

Hi Mark and Kim: At a recent meeting between NDOT and NDOW (Alan Jenne [Habitat Division Chief] and Jon Sjoberg [Fisheries Division]), Alan and Jon requested that NDOT send the state and federal

sensitive and listed species list being considered for evaluation in the EIS to you and Kim for vetting. The attached list was extracted from the NNHP Tracked Species Only list for Washoe County. I deleted species on that list that would not be expected to be in the project area. Through discussions between NDOT and USFWS, only Lahontan cutthroat trout and Cui-ui need to be included in Section 7 consultation. I think the attached list has a number of species on it that will not be found in the project area, but I wanted to include any that might remotely have habitat in this first cut. Please feel free to remove or add species to this list based on your work in the project area. I will include the final list in the EIS analysis. Have a good weekend.
Thanks
Denny

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322 E. Front St., Ste 200
Boise, ID 83702
D 208.383.6202
F 208.345-5315
M 208.841.0733
www.ch2mhill.com

Simpson 2017a

From: Simpson, Nova O
To: Cooke, Steve M
Cc: Young, Christopher E; Andy Starostka (andy_starostka@fws.gov)
Subject: RSB T&E species
Date: Wednesday, May 31, 2017 4:24:59 PM

Hi Steve,

I just had a conversation with Andy Starostka at US Fish. Here is what we both agreed on.

Due to the ever changing conditions of the Truckee River, we should push forward with a formal BA on LCT to make sure we are covered. Although we cannot predict the future status of the LCT, there are thoughts that with recent recovery efforts this area may return to a migratory pathway.

Although cui-ui do not make it into the project area, we will need to access the level of indirect effects caused by water movement downstream into their habitat. Assuming basic in-water work, and associated BMP's, we should be able to get away with informal consultation for cui-ui. If work within the water is expected to more aggressive with higher potential to create large amounts of sediment and harmful waste, then we would want to be more aggressive and go for a formal consultation since we would assume 'take' due to potential effects downstream. Once we have a better idea on the design and final work within the Truckee River, I can help make that determination.

We do not need to consult on Webber's Ivesia or wolverine. A single page memo to keep in our files noting no available habitat in the project area, and reasoning how we came to those conclusions, will cover those two species.

Please let me know if you need anything else at this time.

Nova Simpson

Northern Nevada Biological Supervisor
nsimpson@dot.state.nv.us
(775) 888-7035 (office)
(775) 888-7104 (fax)

Nevada Department of Transportation
Environmental Services - Room 104
1263 S. Stewart Street
Carson City, Nevada 89712

Simpson 2017b

From: Simpson, Nova O
To: Mengel, Denny/BOI; Cooke, Steve M
Cc: Young, Christopher E; Webb, Charlie/MKE
Subject: RE: RSB T&E species [EXTERNAL]
Date: Monday, June 05, 2017 12:21:35 PM

Yes, we can eliminate the buckwheat from consideration and address it the same way as the Webber's Ivesia and wolverine. The US Fish and Wildlife iPac system is very broad in how it queries species and we constantly have to eliminate species from consideration. Thank you for checking.

Nova Simpson

Northern Nevada Biological Supervisor
nsimpson@dot.state.nv.us
(775) 888-7035 (office)
(775) 888-7104 (fax)

Nevada Department of Transportation
Environmental Services - Room 104
1263 S. Stewart Street
Carson City, Nevada 89712

From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Monday, June 05, 2017 11:45 AM
To: Simpson, Nova O <NSimpson@dot.nv.gov>; Cooke, Steve M <SCooke@dot.nv.gov>
Cc: Young, Christopher E <CYoung@dot.nv.gov>; Webb, Charlie/MKE <Charlie.Webb@CH2M.com>
Subject: RE: RSB T&E species

Hi Nova: With the project area extending out to the buffer you used in the species list you sent the other day, another species was added to the list; Steamboat Buckwheat (*Eriogonum ovalifolium* var. *williamsiae*). The buckwheat is restricted to substrates derived from hot springs deposits in the Steamboat Hills and is restricted to an area of approximately 375 acres. Since that is outside our project area, can you see if we will deal with that species the same way as with Webber's Ivesia and wolverine? Thanks

Denny Mengel, Ph.D.
Principal Technologist
CH2M
Boise, ID

From: Simpson, Nova O [mailto:NSimpson@dot.nv.gov]
Sent: Wednesday, May 31, 2017 5:25 PM
To: Cooke, Steve M <SCooke@dot.nv.gov>
Cc: Young, Christopher E <CYoung@dot.nv.gov>; Andy Starostka (andy_starostka@fws.gov)

<andy_starostka@fws.gov>
Subject: RSB T&E species

Hi Steve,

I just had a conversation with Andy Starostka at US Fish. Here is what we both agreed on.

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Please let me know if you need anything else at this time.

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Nevada Department of Transportation
Environmental Services - Room 104
1263 S. Stewart Street
Carson City, Nevada 89712

Simpson 2017c

From:	Simpson, Nova O
To:	"Mark Freese"
Cc:	Webb, Charlie/MKE; Mengel, Denny/BOI; Young, Christopher E; "Vogt, Sean"; "Kim Tisdale"
Subject:	RE: Spaghetti Bowl Sensitive Species [EXTERNAL]
Date:	Tuesday, December 05, 2017 11:15:06 AM
Attachments:	image001.jpg

Hi Mark,

Good news. I had a chance to speak with Sean Vogt at US Fish yesterday and asked about the timing limitations on LCT and cui-ui as currently written in the draft BA. He agreed that we can adjust the timing to start river work on July 1st. That will allow us to create a work window of July 1st – September 30th for the RSB project to allow for both the federally listed species as well as NDOW's request for spawning needs of game species.

If you have any further requests, please let me know.

Sincerely,

Nova Simpson

Northern Nevada Biological Supervisor
nsimpson@dot.nv.gov
(775) 888-7035 (office)
(775) 888-7104 (fax)

Nevada Department of Transportation
Environmental Services - Room 104
1263 S. Stewart Street
Carson City, Nevada 89712

From: Simpson, Nova O
Sent: Friday, December 01, 2017 10:37 AM
To: 'Mark Freese' <markfreese@ndow.org>; Kim Tisdale <ktisdale@ndow.org>
Cc: Webb, Charlie/MKE <Charlie.Webb@CH2M.com>; Mengel, Denny/BOI <Denny.Mengel@CH2M.com>; Young, Christopher E <CYoung@dot.nv.gov>
Subject: RE: Spaghetti Bowl Sensitive Species

Hi Mark,

I am working on the edits of our BA for this project and we have the following requirement for LCT and cui-ui.

> "Work within the Truckee River cannot occur during LCT or cui-ui spawning seasons, which is February through August. Therefore, work within the Truckee is limited to the months of September through January."

We will follow up with US Fish to verify these dates are still correct. If so, that means the contractor cannot even start work within the Truckee until September. That would only allow for 1 month of within river work given your request. At this time, the only work scheduled to occur in the river is the removal of a single pier. One month may be enough time to achieve this, but since I am not aware of all the details and timelines required for this action, one month may not be enough time. As the limitations for federal protected LCT and Cui-ui supersedes, NDOT will attempt to honor the requests by NDOW, but may have to overlap with fall spawning seasons depending on reasonable timelines required to build the river diversion, dewater the work area, remove the pier, re-water the work area, and remove the diversion. NDOT will keep this request in mind as we progress and we will do our best to reduce impacts to the aquatic environment for all those involved, but please be prepared for some flexibility given other restrictions.

We will keep you informed as the project progresses, but if you have an questions or comments in the meantime, please feel free to contact me and we can discuss this matter in more detail.

As always, thank you for your understanding, time, and expertise on this topic.

Sincerely,

Nova Simpson

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nsimpson@dot.nv.gov
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From: Mark Freese [mailto:markfreese@ndow.org]
Sent: Tuesday, November 28, 2017 12:58 PM
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Cc: Simpson, Nova O <NSimpson@dot.nv.gov>; Webb, Charlie/MKE <Charlie.Webb@CH2M.com>
Subject: RE: Spaghetti Bowl Sensitive Species

Denny,
The list look sufficient from our perspective. As for the fish species, NDOW recommends that ***in-river*** work on the Truckee River be conducted between July 1 and September 30 to avoid impacts to spring and fall spawning fish.

Thanks

Mark Freese, Habitat Biologist
Nevada Department of Wildlife

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markfreese@ndow.org

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From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Friday, November 3, 2017 2:35 PM
To: Mark Freese; Kim Tisdale
Cc: Simpson, Nova O; Webb, Charlie/MKE
Subject: Spaghetti Bowl Sensitive Species

Hi Mark and Kim: At a recent meeting between NDOT and NDOW (Alan Jenne [Habitat Division Chief] and Jon Sjoberg [Fisheries Division]), Alan and Jon requested that NDOT send the state and federal sensitive and listed species list being considered for evaluation in the EIS to you and Kim for vetting. The attached list was extracted from the NNHP Tracked Species Only list for Washoe County. I deleted species on that list that would not be expected to be in the project area. Through discussions between NDOT and USFWS, only Lahontan cutthroat trout and Cui-ui need to be included in Section 7 consultation. I think the attached list has a number of species on it that will not be found in the project area, but I wanted to include any that might remotely have habitat in this first cut. Please feel free to remove or add species to this list based on your work in the project area. I will include the final list in the EIS analysis. Have a good weekend.
Thanks
Denny

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Simpson 2017d

From: Simpson, Nova O
To: Mengel, Denny/BOI
Cc: Webb, Charlie/MKE
Subject: RE: RSB T&E species [EXTERNAL]
Date: Thursday, July 06, 2017 11:01:50 AM
Attachments: Nixon Bridge Biological Assesment - Final 03-20-2017.pdf

---

Hi there,

The answer to current spawning in the project area is no. At this time, both LCT and cui-ui are restricted by numerous dams downstream of the project site and the only breeding popultions upstream are in CA tributaries really far upstream. Attached is the most recent BA that we completed which talks about the most current conditions and their current movements on the southern portion of the Truckee. Feel free to use information from this BA to assist with the new one for RSB.

The thought with having to go formal in the case of RSB is that there are numerous efforts that may alter the current ranges and allow them further up river, potentially into the project site so we want to prepare for worst case scenario to avoid delays down the road. Speaking of spawning gravel, on past projects we have been required to add spawning gravel to assist with downstream habitat. We should plan on that and incorporate that into the BA. We will need to coordinate a meeting with US Fish and Wildlife as well as NDOW once the project description gets a little further along. The lead contact with US Fish on this project is Sean Vogt (sean_vogt@fws.gov). As far as NDOW, we have worked with Travis Hawks (thawks@ndow.org) on other Truckee River projects, so I can only assume he would be the one for the RSB as well.

I am around the office all day today, so feel free to give me a call if you want to chat about anything.

Thanks!

Nova Simpson

Northern Nevada Biological Supervisor
nsimpson@dot.state.nv.us
(775) 888-7035 (office)
(775) 888-7104 (fax)

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1263 S. Stewart Street
Carson City, Nevada 89712

From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Thursday, July 06, 2017 10:18 AM
To: Simpson, Nova O <NSimpson@dot.nv.gov>
Cc: Webb, Charlie/MKE <Charlie.Webb@CH2M.com>
Subject: RE: RSB T&E species

Hi again Nova: When you talk to USFWS, can you ask them if they have observed any Lahontan cutthroat trout spawning near the project area crossing? Could you run that by the state fishery biologist if you talk to him also? I can't tell from the photos Brian sent me if there is any suitable gravel in the area. Thanks

Denny Mengel, Ph.D.
Principal Technologist
CH2M
Boise, ID

From: Simpson, Nova O [mailto:NSimpson@dot.nv.gov]
Sent: Thursday, July 06, 2017 8:02 AM
To: Mengel, Denny/BOI <Denny.Mengel@CH2M.com>
Cc: Webb, Charlie/MKE <Charlie.Webb@CH2M.com>
Subject: RE: RSB T&E species [EXTERNAL]

Good morning Denny,

Let me run this past US Fish to confirm. I will get back in touch as soon as I hear back.

Thank you for checking.

Nova Simpson

Northern Nevada Biological Supervisor
nsimpson@dot.state.nv.us
(775) 888-7035 (office)
(775) 888-7104 (fax)

Nevada Department of Transportation
Environmental Services - Room 104
1263 S. Stewart Street
Carson City, Nevada 89712

From: Mengel, Denny/BOI [mailto:Denny.Mengel@CH2M.com]
Sent: Thursday, July 06, 2017 6:38 AM
To: Simpson, Nova O <NSimpson@dot.nv.gov>
Cc: Webb, Charlie/MKE <Charlie.Webb@CH2M.com>
Subject: RE: RSB T&E species

Hi Nova: I heard from the project team that the in-river pier will be demolished as part of the construction. If we use appropriate BMPs such as isolation from live water, does your comment on informal consult for cui-ui still apply? Thanks

Denny Mengel, Ph.D.
Principal Technologist
CH2M
Boise, ID

From: Simpson, Nova O [mailto:NSimpson@dot.nv.gov]
Sent: Wednesday, May 31, 2017 5:25 PM
To: Cooke, Steve M <SCooke@dot.nv.gov>
Cc: Young, Christopher E <CYoung@dot.nv.gov>; Andy Starostka (andy_starostka@fws.gov) <andy_starostka@fws.gov>
Subject: RSB T&E species

Hi Steve,

I just had a conversation with Andy Starostka at US Fish. Here is what we both agreed on.

Due to the ever changing conditions of the Truckee River, we should push forward with a formal BA on LCT to make sure we are covered. Although we cannot predict the future status of the LCT, there are thoughts that with recent recovery efforts this area may return to a migratory pathway.

Although cui-ui do not make it into the project area, we will need to access the level of indirect effects caused by water movement downstream into their habitat. Assuming basic in-water work, and associated BMP's, we should be able to get away with informal consultation for cui-ui. If work within the water is expected to more aggressive with higher potential to create large amounts of sediment and harmful waste, then we would want to be more aggressive and go for a formal consultation since we would assume 'take' due to potential effects downstream. Once we have a better idea on the design and final work within the Truckee River, I can help make that determination.

We do not need to consult on Webber's Ivesia or wolverine. A single page memo to keep in our files noting no available habitat in the project area, and reasoning how we came to those conclusions, will cover those two species.

Please let me know if you need anything else at this time.

Nova Simpson

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nsimpson@dot.state.nv.us
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Starostka 2017

From: Starostka, Andy
To: Shawna Theisen; Sean Vogt; Simpson, Nova O
Subject: Fwd: RSB T&E species
Date: Friday, June 02, 2017 9:00:39 AM

Nova, this is a good synopsis of the consultation need for this project. Sean Vogt will be the lead for this project as well, but feel free to involve me if needed.

A

---------- Forwarded message ----------
From: **Simpson, Nova O** <NSimpson@dot.nv.gov>
Date: Wed, May 31, 2017 at 4:24 PM
Subject: RSB T&E species
To: "Cooke, Steve M" <SCooke@dot.nv.gov>
Cc: "Young, Christopher E" <CYoung@dot.nv.gov>, "Andy Starostka (andy_starostka@fws.gov)" <andy_starostka@fws.gov>

Hi Steve,

I just had a conversation with Andy Starostka at US Fish. Here is what we both agreed on.

Due to the ever changing conditions of the Truckee River, we should push forward with a formal BA on LCT to make sure we are covered. Although we cannot predict the future status of the LCT, there are thoughts that with recent recovery efforts this area may return to a migratory pathway.

Although cui-ui do not make it into the project area, we will need to access the level of indirect effects caused by water movement downstream into their habitat. Assuming basic in-water work, and associated BMP's, we should be able to get away with informal consultation for cui-ui. If work within the water is expected to more aggressive with higher potential to create large amounts of sediment and harmful waste, then we would want to be more aggressive and go for a formal consultation since we would assume 'take' due to potential effects downstream. Once we have a better idea on the design and final work within the Truckee River, I can help make that determination.

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Environmental Services - Room 104

1263 S. Stewart Street

Carson City, Nevada 89712

--

Andy Starostka
Fish Biologist
Nevada Fish and Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, Nevada 89502-7147

Tel: (775) 861-6386
Fax: (775) 861-6301
andy_starostka@fws.gov

Vogt 2017

From: Vogt, Sean
To: Simpson, Nova O; Denny.Mengel@ch2m.com
Cc: Starostka, Andy
Subject: Re: FW: RSB T&E species
Date: Tuesday, July 11, 2017 10:16:19 AM

Hey Nova,

Thanks for taking my call this morning and for chatting with me about the Reno Spaghetti Bowl project. Based on that conversation, I have included Denny Mengel to attempt to answer some questions we had. What will the timing of the in-river pier removal be? And, is it expected that the pier or pieces of the pier will fall into the river and create expansive sediment plumes?

Here are my thoughts regardless to give you some context:

If the removal of the in-river pier is to occur during the spawning season (give or take Feb-August) or there is a need for temporal flexibility regarding the removal of the pier, than I think we should wrap cui-ui in with LCT and complete a formal consultation for both. This would ensure no hold-ups regarding moving forward with that portion of the project.

However, if the removal of the in-river pier is to occur during low flow conditions, outside of the spawning season, then there is much less concern regarding cui-ui as they will be back within Pyramid Lake. Thus, life is easier regarding cui-ui.

I look forward to hearing your thoughts, and working together to find the best possible solution for all involved. Have a great rest of your rest.

Cheers,

Sean Vogt
Fish Recovery Biologist
Reno US Fish & Wildlife Service Office
(775) 861-6330

On Thu, Jul 6, 2017 at 7:11 AM, Simpson, Nova O <NSimpson@dot.nv.gov> wrote:

> Good morning Sean,
>
> Looking through my older emails on the Reno Spaghetti Bowl project, Andy noted you would be the lead on this consultation. Andy and I had discussed the level of consultation required (see attached email) and we agreed a formal consultation on LCT and an Informal consultation on cui-ui would be the appropriate levels given the scope of work. We have some new information on the level of disturbance within the river (see highlighted below). Do you have any thoughts on if this would raise the level of consultation for cui-ui to formal, or do you think informal would still be the most appropriate?

As always, thank you for your time and consideration.

Nova Simpson

Northern Nevada Biological Supervisor

nsimpson@dot.state.nv.us

(775) 888-7035 (office)

(775) 888-7104 (fax)

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Sent: Thursday, July 06, 2017 6:38 AM
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Denny Mengel, Ph.D.

Principal Technologist

CH2M

Boise, ID

Please consider the environment before printing this email

From: Simpson, Nova O [mailto:NSimpson@dot.nv.gov]
Sent: Wednesday, May 31, 2017 5:25 PM
To: Cooke, Steve M <SCooke@dot.nv.gov>
Cc: Young, Christopher E <CYoung@dot.nv.gov>; Andy Starostka (andy_starostka@fws.gov) <andy_starostka@fws.gov>
Subject: RSB T&E species

Hi Steve,

I just had a conversation with Andy Starostka at US Fish. Here is what we both agreed on.

Due to the ever changing conditions of the Truckee River, we should push forward with a formal BA on LCT to make sure we are covered. Although we cannot predict the future status of the LCT, there are thoughts that with recent recovery efforts this area may return to a migratory pathway.

Although cui-ui do not make it into the project area, we will need to assess the level of indirect effects caused by water movement downstream into their habitat. Assuming basic in-water work, and associated BMP's, we should be able to get away with informal consultation for cui-ui. If work within the water is expected to more aggressive with higher potential to create large amounts of sediment and harmful waste, then we would want to be more aggressive and go for a formal consultation since we would assume 'take' due to potential effects downstream. Once we have a better idea on the design and final work within the Truckee River, I can help make that determination.

We do not need to consult on Webber's Ivesia or wolverine. A single page memo to keep in our files noting no available habitat in the project area, and reasoning how we came to those conclusions, will cover those two species.

Please let me know if you need anything else at this time.

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nsimpson@dot.state.nv.us

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Carson City, Nevada 89712

Vogt 2018a

From: Vogt, Sean
To: Mengel, Denny/BOI
Subject: Re: BA [EXTERNAL]
Date: Wednesday, January 03, 2018 1:24:18 PM

Denny,

No worries about all the questions, that is what we are here for. I will try to answer all of them as best as possible.

The placement of spawning gravels in this portion of the river is not necessary. If you desire to back fill the work area prior to re-watering, the use of native river rock/gravel would be sufficient. We are more interested in ensuring fish passage can occur through the work area after the project is completed, so if anything comes up there feel free to reach out (although I don't think it is an issue unless river slope was going to change dramatically).

1-3 inches per hour in both directions (de-water and re-water) is ok; let me know if that is not possible, but seems to have worked in the past. My understanding of the goal here is to not create a larger-than-necessary sediment plume during re-watering, as no fish would be in the work area. There are multiple philosophies on this, but this is acceptable currently.

Lastly, the recovery plan is referring to total dissolved solids/alkalinity (among other things like natural mercury/arsenic) in desert terminus lakes. We know that a reduction in lake elevation (by whatever means) increases TDS in desert terminus lakes; at a certain point (>16000 mg/L), LCT cannot survive in the lake any longer (i.e., Walker Lake currently). Thus, much energy has been spent on ensuring enough water reaches Pyramid Lake (and Walker Lake more recently) over the past several decades.

Let me know if you have any other questions! Happy New Year!

Cheers,

Sean Vogt
Fish Recovery Biologist
Reno US Fish & Wildlife Service Office
(775) 861-6330

On Sun, Dec 17, 2017 at 10:20 AM, Mengel, Denny/BOI <Denny.Mengel@ch2m.com> wrote:

> Hi Sean: Sorry for the multiple emails. I have so many comments, that I keep finding questions for the Service in their comments.

Even though there is no CLT spawning habitat at the bride, would the Service like NDOT to place spawning gravel in the dewatered area so it can naturally re-distribute downstream after re-watering? If so, do you have a depth that would be acceptable.

Also, we are removing the water from the dewatered area at a rate of 1-3 inches per hour. Do you think that is an acceptable rate to re-water the area as the diversion is removed?

Thanks

Denny Mengel, Ph.D., CF, CPSS

Principal Habitat Management and Planning Technologist

Agile-1

HKA

88 S. Cotterell Dr.

Boise, ID 83709

208-841-0733

Vogt 2018b

TELEPHONE CONVERSATION RECORD

CALL TO:	Sean Vogt		
PHONE NO.:	(775) 861-6330	DATE:	3/6/2018
CALL FROM:	Denny Mengel	TIME:	12:30
MESSAGE TAKEN BY:			
SUBJECT:	RSB Biological Assessment		
PROJECT NO.:			

I returned Sean's call to discuss his informal review of the Draft BA. As long as the river work window is July-September, There is no possibility of sui-ui being in the work area. If they make it to the project area in April, they will be long gone back into the Lake before our work window. He also feels that based on recent data, any indirect sediment effect will dissipate within 1-mile downstream and therefore would not impact cui-ui in the lake. Therefore, the Service recommends we use May Affect, Not Likely to Adversely Affect for the cui-ui. There is still the potential for LCT to be in the project area and the call for that species should stay the same. NDOT will need formal consultation for LCT, but only informal for cui-ui.

If the team is comfortable agreeing to the work window used in the Draft BA, Sean will start to pull his formal consultation material together for LCT and determination letter for cui-ui to save time.

APPENDIX D
NO EFFECT LETTER

MEMORANDUM

No Effect Letter for Webber's Ivesia, North American Wolverine, and Steamboat Buckwheat

PREPARED FOR:	File
COPY TO:	Nova Simpson/NDOT
	Charlie Webb/ Jacobs CH2M
PREPARED BY:	Denny Mengel/Jacobs CH2M
DATE:	January 11, 2018
PROJECT NUMBER:	684384.01.05.06.10

This memorandum is to document a finding of No Effect on Endangered Species Act (ESA) federally listed species North American wolverine (*Gulo gulo luscus*), Steamboat buckwheat (*Eriogonum ovalifolium* var. *williamsiae*), and Webber's Ivesia (*Ivesia webberi*).

The North American Wolverine, proposed to be federally listed as a Threatened species under the ESA, are solitary mammals living primarily in arctic, boreal, and alpine regions with abundant snowfall. They prefer isolated area, but have been reported seen as far south as Lake Tahoe, Nevada (Knudson 2008). Undisturbed habitat suitable for this species is not present in the action area. Nevada Department of Transportation (NDOT) verified the lack of habitat with Andy Starostka, U.S. Fish and Wildlife Service (USFWS) on June 5th, 2017 (Simpson 2017a). The USFWS agreed that there would be No Effect on this species by the Reno Spaghetti Bowl Project.

Steamboat buckwheat, federally listed an Endangered species under the ESA, is only known from the Steamboat Hills approximately 10 miles south of Reno, Nevada (USFWS 1995). It grows there on hot spring deposits with a silica content. There is no suitable habitat in the action area. NDOT believes there will be No Effect to this species by the Reno Spaghetti Bowl Project due to lack of suitable habitat (Simpson 2017b).

Webber's Ivesia, federally listed as a Threatened species, is restricted to shallow shrink-swell clay soils with a gravelly surface layer having sparse vegetation. It grows between 4,475 and 6,237 feet in on terraces and benches (USFWS 2017). There is no suitable habitat for this species within the action area. NDOT verified the lack of habitat with Andy Starostka, USFWS on June 5th, 2017 (Simpson 2017a). The USFWS agreed that there would be No Effect on this species by the Reno Spaghetti Bowl Project.

References

Knudson, T. 2008. Sighting prompts California to expand search for elusive wolverine. Sacramento Bee. April 5.

Simpson, Nova O. 2017a. Nevada Department of Transportation. Personal communication (email) to Denny Mengel/CH2M HILL regarding Andy Starosktka/USFWS confirmation that there is no American wolverine or Webber's iversia habitat in the project area. May 31.

Simpson, Nova O. 2017b. Nevada Department of Transportation. Personal communication (email) to Denny Mengel/CH2M HILL that there is no Steamboat buckwheat habitat in the project area. June 5.

US Fish and Wildlife Service (USFWS). 1995. Steamboat Buckwheat Recovery Plan. Region 1. Portland, OR. September 29.

US Fish and Wildlife Service (USFWS). 2017. Species profile for Webber's ivesia. https://www.fws.gov/nevada/nv_species/webber_ivesia.html. Accessed November 26.