

Draft

LAW RAILROAD EXTENSION PROJECT

Biological Report



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SUMMARY

This Biological Report has been prepared for the Laws Railroad Extension Project and identifies potential impacts to and avoidance measures for sensitive biological resources within the proposed project. The project is located adjacent to the Laws Railroad Museum (Silver Canyon Road) roughly five miles northeast of the town of Bishop in Inyo County, California. The proposed project includes construction (extension) of three miles of railroad track along the existing Carson and Colorado Railroad grade and upon completion, will allow the opportunity for museum visitors the experience to travel a historic railroad.

Construction activities include: Laying of track along the existing railroad grade; construction of a truck trail to allow access for construction, maintenance, and emergencies; weed and upland vegetation removal; repairing track bed and replacement of drainage culverts (dry, wooden box culverts used for water spreading purposes) as needed.

Biological field surveys were conducted from January 2020 through August 2020 and all species and resources that have the potential to occur within the Project Study Area and be impacted by project activities were evaluated. There were no sensitive habitats or communities within the Project Study Area and no sensitive botanical species were observed (or previously recorded) during focused plant surveys. Three sensitive animal species and one sub-species were addressed due to known occurrences and/or potential suitable habitat within and near the Project Study Area: Swainson's hawk (*Buteo swainsoni*), Willow flycatcher (*Empidonax traillii*), Southwestern willow flycatcher (*E .t. extimus*) and Burrowing owl (*Athene cunicularia*).

One sensitive species, Swainson's hawk (an individual adult), was identified nesting within the Project Study Area. Both Willow and Southwestern willow flycatcher are not expected to be impacted by project activities, however, suitable habitat (and one known nest site) occur within the impact area buffer for this species/subspecies (0.25 mile). Burrowing owl protocol-level surveys were conducted within the Project Study Area and survey results show that it is not expected that Burrowing owl occur within the Project Study Area.

Avoidance measures for Swainson's hawk, Willow and Southwestern willow flycatcher will be implemented on the proposed project. Construction activities will not occur during any time during the nesting season; this includes courtship and establishing territory phases through fledgling phase. The general nesting season in the Owens Valley, California for Swainson's hawk, is April to September, and April through August for Willow and Southwestern willow flycatcher. Additional avoidance measures include seasonal construction windows to occur outside of the nesting bird season for all species that are expected to nest within the Project Study Area. Construction dates are scheduled to occur during fall and winter months.

No biological permits will be required for the Laws Railroad Extension Project and no mitigation will be needed.

1.0 INTRODUCTION

1.1 History

The Carson and Colorado Railroad (C&C) (RR) was built from 1881 to 1883 as a narrow gauge (three-foot (ft) gauge) RR from Mound House NV to Keeler, CA, approximately 300 miles (mi). The line reached Laws (originally named Bishop Creek), in 1883, where a station and railyard were established to serve the nearby town of Bishop, CA.

The C&C RR was sold to the Southern Pacific (SP) RR in 1900 and was operated by that company until 1960. To “preserve the history of the railroad”, SP RR donated 11 acres (ac) of the station grounds, the train, the 1883 station building, the agent’s house, the Armstrong turntable, associated water and fuel facilities and remaining tracks to Inyo Co. The rest of the RR line was removed and sold for scrap, but the old grade remained in place.

In 1964 a group was formed as the Bishop Museum and Historical Society, a non-profit 501 © (3) corporation and contracted with Inyo Co. to operate the 11 ac site as a museum. The museum opened in April of 1966 and continues to operate daily.

In 1967, a self-propelled rail motor car that originally operated on the Death Valley RR in eastern Inyo Co. was donated to Inyo Co. and placed on the tracks at Laws Museum as a static display. In 1999, a group of volunteers took on the task of restoring the car that had been originally built in 1927 by the J.G. Brill Company. After five years of work, the car was completely restored to new condition.

The car (DVRR #5) holds 34 passengers and in the summer months operates approximately every other Saturday and on holidays, making eight trips a day from one end of the Museum grounds to the other and back. Additional private party operations are also made by special request. The car runs on extended track at an average speed of 10-15 mile per hour (mph).

At present, the museum has approximately 3000 ft. of track on the grounds, all of it usable for train operations. The track is maintained at Federal Railroad Administration Standards Level Two, which means passenger trains can operate at 25 mph. (Personal communication with Jim Morrow, Laws RR Museum, 2020)

1.2 Purpose

The purpose of the proposed project is to enhance visitors’ experience at the Laws RR Museum while demonstrating historic early twentieth century RR travel. By allowing the restored 1927 motor rail car (Death Valley RR #5) to run from the existing tracks on the Laws Museum grounds along the historic RR line, visitors can experience what late 19th and early 20th century travelers experienced while traveling through the Owens Valley.

1.3 Project Location

The proposed project is located adjacent to the Laws RR Museum (Silver Canyon Road (Rd.)) roughly five mi northeast of the town of Bishop in Inyo Co., CA (Figure 1). The Project Impact Area (PIA) - areas where direct impacts may occur as a result of construction activities- is along roughly three linear mi of Los Angeles Department of Water and Power (LADWP) property directly south of the southernmost museum ground property boundary (Figure 2). The project is west of Laws Poleta Rd. and east of the Owens River, within the C&C RR Right-of-Way (ROW), along the existing RR grade. The ROW is 60 feet wide and is sporadically marked by old fence lines, survey markers, and fence posts.

1.4 Project Description

The Laws RR Museum proposes a three phase approach for extending the RR track. The proposed project includes Phases 1, 2 and 3 which are as follows:

Phase 1

- Restoration of the existing RR grade south of the Laws Museum grounds and laying of track to the McNally Return Ditch crossing; a total distance of roughly 0.7 mi from the end of the tracks on the museum grounds
- All work will be confined within the C&C RR, 60 ft. ROW as delineated by the partial remaining fence line south of the museum property line
- Construction of a truck trail on the west side and adjacent to the old track bed within the ROW to allow access for construction, maintenance, and emergencies; the trail will be constructed from the museum grounds to the McNally Return Ditch crossing
- Clearing of weeds, upland vegetation and brush from the historic track bed by hand grubbing and mechanical means where practical
- Existing track bed repairs as necessary and replacement of drainage culverts (dry, wooden, box culverts) as needed; all work will be done with mechanized equipment such as a back hoe and small earth moving equipment
- Track will be laid on the historic track bed to the McNally Return Ditch crossing
 - Construction will include building 33 ft. panels of track (called “snap track”) and moving the panels into place on the roadbed by loading onto a flat car; the flat car will move along the track to the end where the panel would then be lifted from the car and set in place for connecting to the existing track

Figure 1. Project Location Map



Figure 1. Project Location Map

Legend

—+— Existing Railroad Grade



Figure 2. Project Impact Area

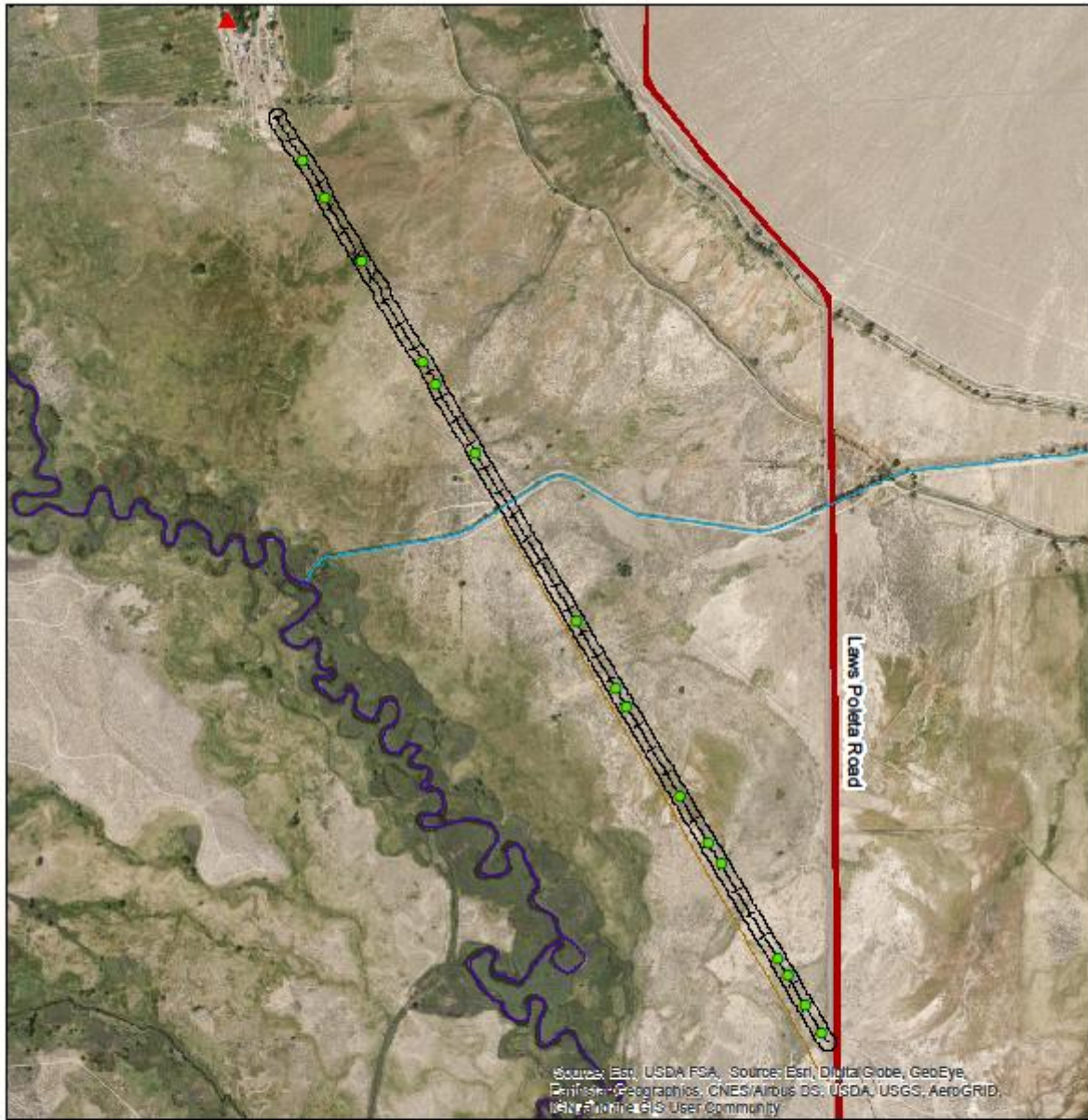
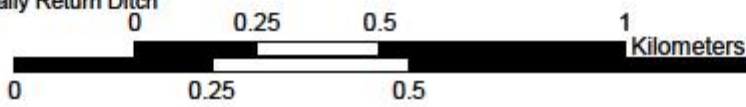


Figure 2. Project Impact Area

Legend

- Culvert
- ▲ Laws Railroad Museum
- Proposed Access/Maintenance Road
- McNally Return Ditch
- Owens River
- + + Existing Railroad Grade
- Carson & Colorado ROW



- Track laying will be performed by hand utilizing Cal Fire crews; some mechanized equipment such as a backhoe and forklift may be used

Phase 2

- If the existing McNally Return Ditch is determined, by engineering inspection, to be viable to use again as a RR crossing, it will be designed and built to accommodate motor vehicle crossing as well as RR trains
 - Modifications to the RR grade will be made by planking between the rails similar to a road crossing, and creating berms on the outside of the rails to allow motor vehicles to enter on the planking and crossing

Phase 3

- Will occur from McNally Return Ditch south to Laws Poleta Rd.
- All activities covered under Phase 1 with the exception of construction of a truck trail; use of existing and adjacent pole-line road as the service road will occur

1.5 Train Operation Schedule

The DVRR #5 holds 34 passengers and in the summer months operates approximately every other Saturday and on holidays, making eight trips a day from one end of the museum grounds to the other and back. Additional private party operations are also made by special request. The car runs at an average speed of 10-15 mile per hour (mph). After completion of all phases of this project, and if demand warrants, DVRR #5 would operate every Saturday, six months out of the year. Additionally, Southern Pacific No. 18 also known as the “Slim Princess”, may run occasionally for special events.

1.6 Study Area

The Project Study Area (PSA) is defined as all areas that have the potential of being directly or indirectly impacted by project activities. The PIA, or project footprint, includes the areas that may be directly impacted as a result of construction activities as described in the Project Description: the existing RR grade (including culvert locations), all areas within the C&C RR ROW, areas adjacent to the track where construction of a truck trail may occur, the McNally Return Ditch crossing and the existing pole-line road. Also considered were indirect impact areas within the study area which included associated buffers for sensitive species that may be impacted by noise and construction activity (one example, a 0.5 mi buffer from the PIA for active Swainson’s hawk (SWHA) nests). See Appendix A for photographs of the PSA.

2.0 STUDY METHODS

A review of pertinent literature, regulatory requirements, special-status species lists, and recorded occurrences was conducted to determine if the PSA is within the range of sensitive

resources such as federal or state-listed species. Included in the sensitive species and habitat review, was a U.S. Geological Survey (USGS) nine-quadrangle (quad) search for the Laws quad. Field visits included site visits with Laws RR Museum volunteers and the environmental team as well as field reconnaissance surveys and focused species surveys by biologists from the environmental team. Protocol-level surveys for botanical species and wildlife (including nesting bird surveys) were conducted in the PSA from January through August of 2020.

2.1 Regulatory Requirements

The applicable federal and state environmental regulations associated with the proposed project are discussed in this section.

Federal Endangered Species Act

16 U.S.C. 1531-1543 (Act)

The Federal Endangered Species Act (FESA) protects federally listed Threatened and Endangered species. Section 9 of the FESA prohibits actions that result in “take” of Threatened or Endangered species. “Take” is defined by FESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” “Harm” has been further defined to include killing or injuring due to significant obstruction of essential behavior patterns (i.e. breeding, feeding, or sheltering) through significant habitat modification or degradation.

Under FESA Section 7, a federal agency that proposes to conduct, fund, or approve an action that may result in “take” of a listed species is required to consult with the USFWS. The result of this formal consultation is a Biological Opinion (BO), which includes either a jeopardy or non-jeopardy decision issued by the USFWS to the consulting federal agency. Included in the BO is the possible issuance of authorization for “incidental take” which includes provisions for legal take provided that specific measures are used for construction.

Clean Water Act

33 U.S.C. 1251-1376

The Clean Water Act (CWA) is a federal law that protects the chemical, physical, and biological integrity of the nation’s waters by preventing pollutants, providing assistance for the improvement of wastewater treatment, and maintaining the integrity of wetlands. The Environmental Protection Agency defines the CWA as a law that “...establishes the basic structure for regulating discharges or pollutants into the waters of the United States and regulating quality standards for surface waters.”

Migratory Bird Treaty Act

16 U.S.C. 703-711

According to the Migratory Bird Treaty Act (MBTA), it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; or to possess or sell migratory birds. The law applies to live and dead birds and grants full protection to any bird parts including feathers, eggs and nests. The MBTA protected over 800 species of birds that occur in the U.S.

California Endangered Species Act

Fish and Game Code 2050 et seq.

According to the California Endangered Species Act (CESA), it is unlawful to import, export, “take” (i.e. kill), possess, purchase or sell California (CA) -listed threatened or endangered species. CESA incorporates provisions that permit impacts to CA-listed threatened or endangered species. Those provisions are similar to, but not identical to, provisions in the FESA in that there is a permitting process regulated by the California Department of Fish and Wildlife (CDFW).

California Environmental Quality Act

P.R.C. 21000 et seq.

The California Environmental Quality Act (CEQA) establishes the state policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by state lead agencies.

California Department of Fish and Wildlife Code

Fish and Game Code 1600 et seq.

Fish and Game Code requires that notification be given to CDFW prior to the start of any activities that would result in the following: substantial diversion or obstruction of the natural flow of any river, stream, or lake; substantial change or use of any material from the bed, channel or bank of any river, stream, or lake; or deposition of debris, waste or other materials that could pass into any river, stream, or lake. This regulation applies to ephemeral, intermittent, and perennial waters and to work that takes place within the floodplain of a water body and may result in a Streambed Alteration Agreement between the project applicant and CDFW.

2.2 Studies Required

2.2.1 Literature Search

A list of special-status plant and animal species as well as habitats that have the potential to occur in the PSA was compiled by accessing the following resources: CDFW, California Natural Diversity Database (CNDDDB) (2020/RareFind 5) (Appendix B); California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (2020) (Appendix C); USFWS Listed Species Database (2020) (Appendix D) and USFWS National Wetlands Inventory (NWI) (2020) (Appendix E). Included in the species and habitat review was a USGS nine-quad search for the Laws quad.

Additionally, supplemental reports and data regarding biological studies, grazing management, conservation planning and permitting were provided by LADWP and was referenced for this project (CDFW 2015 and LAWDP 2006, 2014, 2019).

2.2.2 Survey Methods

The PSA was evaluated for the potential to support sensitive biological resources. Field surveys included site reconnaissance surveys and focused botanical and wildlife surveys.

Botanical Surveys

Botanical surveys were designed to maximize the potential for observing sensitive species by timing surveys to coincide with peak flowering periods. All plant species in bloom, or otherwise recognizable, were identified to a level necessary to determine their regulatory status.

Botanical surveys were conducted in accordance with the following protocols:

- California Department of Fish and Wildlife. 2018 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*
- California Native Plant Society. 2001 *CNPS Botanical Survey Guidelines*
- United States Fish and Wildlife Service. 2000 *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*

Wildlife Surveys

Observations of wildlife species and signs (e.g., scat, tracks, prey remains, burrows, nests, etc.) were recorded during all field visits. Protocol-level SWHA and Burrowing Owl (BUOW) surveys were conducted in accordance with the following protocols*:

- California Department of Fish and Wildlife. 2012 *Staff Report on Burrowing Owl Mitigation*
- Swainson's Hawk Technical Advisory Committee. 2000 *Recommended Timing and Methodology For Swainson's Hawk Nesting Surveys In California's Central Valley*

A map was created denoting SWHA active nest sites within a 0.5 mi buffer radius of the PIA (Appendix F). A BUOW Habitat Assessment and Breeding Season Survey Report was prepared per protocol guidelines.

See Tables 1 and 2 for plant and animal species observed during field surveys.

* Amendments to the SWHA protocol were made by Jennifer Richardson to ensure that timing and methods were applicable specifically to breeding SWHA in the Owens Valley

Table 1. Plants Observed During Field Surveys in 2020

COMMON NAME	SCIENTIFIC NAME
Alkali sacaton	<i>Sporobolus airoides</i>
American licorice	<i>Glycyrrhiza lepidota</i>
Creeping wildrye	<i>Leymus triticoides</i>
Black locust	<i>Robinia pseudoacacia</i>
Broadleaved pepperweed	<i>Lepidium latifolium</i>
Brownplume wirelettuce	<i>Stephanomeria pauciflora</i>
Common reed	<i>Phragmites australis</i>
Cushion cryptantha	<i>Cryptantha circumscissa</i>
Field bindweed	<i>Convolvulus arvensis</i>
Fivehorn smotherweed	<i>Bassia hyssopifolia</i>
Fremont cottonwood	<i>Populus fremontii</i>
Greasewood	<i>Sarcobatus vermiculatus</i>
Hardheads	<i>Acroptilon repens</i>
Indianhemp	<i>Apocynum cannabinum</i>
Iodine bush	<i>Allenrolfea occidentalis</i>
Mountain rush	<i>Juncus arcticus</i>
Narrowleaf willow	<i>Salix exigua</i>
Prickly Russian thistle	<i>Salsola tragus</i>
Red willow	<i>Salix laevigata</i>
Redstem stork's bill	<i>Erodium cicutarium</i>
Rubber rabbitbrush	<i>Ericameria nauseosa</i>
Russian olive	<i>Elaeagnus angustifolia</i>
Salt heliotrope	<i>Heliotropium curassavicum</i>
Saltcedar	<i>Tamarix ramosissima</i>
Saltgrass	<i>Distichlis spicata</i>
Scratchgrass	<i>Muhlenbergia asperifolia</i>
Shadscale saltbush	<i>Atriplex confertifolia</i>
Southern cattail	<i>Typha domingensis</i>
Spikerush	<i>Eleocharis sp.</i>
Sulphur-flower buckwheat	<i>Eriogonum umbellatum</i>
Sweetclover	<i>Melilotus officinalis</i>
Torrey's saltbush	<i>Atriplex torreyi</i>

Table 2. Animals Observed During Field Surveys in 2020

COMMON NAME	SCIENTIFIC NAME
American kestrel	<i>Falco sparverius</i>
Antelope ground squirrel	<i>Ammospermophilus leucurus</i>
Black phoebe	<i>Sayornis nigricans</i>
Black-billed magpie	<i>Pica hudsonia</i>
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>
Bullock's oriole	<i>Icterus bullockii</i>
California ground squirrel	<i>Spermophilus beecheyi</i>
California quail	<i>Callipepla californica</i>
Common raven	<i>Corvus corax</i>
Desert cottontail rabbit	<i>Sylvilagus audubonii</i>
Eurasian collared dove	<i>Streptopelia decaocto</i>
Great horned owl	<i>Bubo virginianus</i>
Greater roadrunner	<i>Geococcyx californianus</i>
Honey bee	<i>Apis mellifera</i>
House finch	<i>Carpodacus mexicanus</i>
House sparrow	<i>Passer domesticus</i>
Black-tailed jackrabbit	<i>Lepus californicus</i>
LeConte's thrasher	<i>Toxostoma lecontei</i>
Lesser goldfinch	<i>Carduelis psaltria</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Mountain bluebird	<i>Sialia currucoides</i>
Mourning dove	<i>Zenaida macroura</i>
Mule deer	<i>Odocoileus hemionus</i>
Northern flicker	<i>Colaptes auratus</i>
Northern harrier	<i>Circus cyaneus</i>
Osprey	<i>Pandion haliaetus</i>
Prairie falcon	<i>Falco mexicanus</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Rough-legged hawk	<i>Buteo lagopus</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Say's phoebe	<i>Sayornis saya</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>
Spotted towhee	<i>Pipilo maculatus</i>
Swainson's hawk	<i>Buteo swainsoni</i>
Turkey vulture	<i>Cathartes aura</i>
Western bluebird	<i>Sialia mexicana</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western meadowlark	<i>Sturnella neglecta</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>

2.3 Survey Details

Refer to Table 3 for field survey dates, detailed descriptions and participants/surveyors.

Table 3. Survey Dates, Types and Participants for Field Surveys in 2020

Date (2020)	Field Review/Survey Type	Participants/Surveyors
4 January	<ul style="list-style-type: none"> Team meeting to visit PSA and discuss project description Reconnaissance-level wildlife and plant surveys 	<ul style="list-style-type: none"> Jim Morrow and Bo Manley, Laws Railroad Museum board members and volunteers Pete Pumphrey, Laws Railroad Museum volunteer Emilie Zelazo, Project Cultural Historian/Archeologist Jenny and Stu Richardson, Project Biologists
29 February	<ul style="list-style-type: none"> Reconnaissance-level wildlife and plant surveys Protocol-level surveys for potential SWHA nests (Spring Preparation) Willow flycatcher habitat assessment 	Jenny and Stu Richardson
24 March 2, 11, 18 April	<ul style="list-style-type: none"> Reconnaissance-level wildlife and plant surveys Protocol-level SWHA surveys for individual birds and nests (Spring Preparation/Establishing Territories and Forming Pairs) 	Jenny and Stu Richardson
27 April	<ul style="list-style-type: none"> Reconnaissance-level wildlife and plant surveys Protocol-level SWHA nest monitoring surveys (Establishing Territories and Forming Pairs/Establishing Nest Sites, Nest Building and Copulation) 	Stu Richardson
1 May	<ul style="list-style-type: none"> PSA catalogue and Global Positioning System (GPS) feature collection Reconnaissance-level wildlife and plant surveys Protocol-level SWHA nest monitoring surveys (Establishing Nest Sites, Nest Building and Copulation) Protocol-level BUOW Habitat Assessment 	<ul style="list-style-type: none"> Mihai Giurgulescu (GPS feature collection)* Stu Richardson Emilie Zelazo
25 May	<ul style="list-style-type: none"> Reconnaissance-level wildlife surveys Protocol-level SWHA nest monitoring surveys (Establishing Nest Sites, Nest Building and Copulation) Protocol-level BUOW surveys (Breeding Season Survey 1) Rare plant surveys (Survey 1) 	Jenny and Stu Richardson
20 June	<ul style="list-style-type: none"> Protocol-level SWHA nest monitoring surveys (Monitoring Known Nest Sites) Protocol-level BUOW surveys (Breeding Season Survey 2) Rare plant surveys (Survey 2) 	Jenny and Stu Richardson
12 July	<ul style="list-style-type: none"> Protocol-level SWHA nest monitoring surveys (Monitoring Known Nest Sites) Protocol-level BUOW surveys (Breeding Season Survey 3) Rare plant surveys (Survey 3) 	Jenny and Stu Richardson

9 August	<ul style="list-style-type: none"> Protocol-level SWHA nest monitoring surveys (Monitoring Known Nest Sites/Post Fledgling) 	Stu Richardson
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*All Geographic Information System (GIS) maps produced by Katelyn Mohr, Project GIS Specialist

3.0 RESULTS: ENVIRONMENTAL SETTING

Laws RR Museum is located in the Owens Valley, roughly five mi northeast of the town of Bishop in Inyo, Co. CA. The Owens Valley climate is arid. During the summer months, relative humidity falls to 10 percent or less, and southerly winds of up to 15 or 20 mph increase the effect of this dryness. Like many of the valleys in the Great Basin, temperatures are high in summer and cool in winter (LADWP 1991).

The eastern slopes of the Sierra Nevada Mountains border the west side of the valley and the western slopes of the White-Inyo Mountains are to the east with approximately 20 mi separating the tallest peaks on both sides (Putman and Smith 1995).

3.1 Hydrological Resources

The Sierra Nevada blocks precipitation from westerly winds creating a rain shadow effect on the valley floor. The Sierra snowpack, however, provides relatively large amounts of runoff and groundwater recharge to the valley which has created areas of vegetation such as meadow, marsh, and riparian habitats that require relatively large amounts of water in an otherwise arid environment. The water that recharges the groundwater basin enters the valley primarily as runoff in numerous creeks that flow from the Sierra Nevada to the west (LADWP 1991).

Owens River

The Owens River is located between 0.25 and 0.5 mi to the west of the existing RR grade, outside of the PIA (distance varies depending on location along the RR grade). It is the dominant natural water feature of the Owens Valley, with its headwaters emerging from Big Springs, or Long Valley, in southwestern Mono County (LADWP 2017). The river flows southbound meandering through the entire valley eventually draining into Owens Dry Lake. The Owens River and its tributary streams support riparian habitat, recharge the groundwater basins that underlie the valley and are used for irrigation purposes throughout the valley (LADWP 1991).

McNally Return Ditch (also called Laws Ditch)

The McNally Return Ditch, which traverses the PSA, is approximately one mi long and is an intermittent water-way returning water from the Upper McNally Canal, east of the PSA, to the Owens River, to the west. It is operated seasonally during water spreading activities and for water export. Where the ditch originates from the Lower McNally Canal, the gradient is fairly steep, flattening out as it gets closer to the Owens River. Upstream of the C&C RR ROW the bed of the ditch is composed of course material and transitions from narrowleaf willow (*Salix exigua*) to an upland community dominated by Torrey's saltbush (*Atriplex torreyi*). Downstream of the ROW, as the gradient decreases, the bed is composed of fines and transitions from

cattail (*Typha domingensis*) to narrowleaf willow with cottonwood trees (*Populus fremontii*) in the overstory. Both upstream and downstream of the ROW, there are sections of the ditch that are devoid of vegetation.

Wetlands

The NWI identified two types of Freshwater Emergent Wetlands (PEM1A and PEM1C) and one type of Freshwater Scrub-Shrub Wetland (PSSC) to the west of the project site (Appendix E). Freshwater Emergent and Scrub-Shrub Wetlands are classified as Palustrine meaning they may occur along river channel shorelines, on floodplains, isolated from water bodies, or on slopes (Carter et al. 1979).

Freshwater Emergent Wetlands are non-tidal wetlands characterized by rooted herbaceous and grass-like plants (excluding mosses and lichens) that stand erect above the water or ground surface. Vegetation is present for most of the growing season in most years and includes marshes, meadows, and fens. These wetlands are dominated by species that usually remain standing at least until the beginning of the next growing season. The water regimes vary between the two types of wetlands identified on the NWI:

- **PEM1A:** Surface water is either present for brief periods (days to weeks) during the growing season and the water table usually lies well below the ground surface for most of the season
- **PEM1C:** Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.

Freshwater Forested/Shrub Wetlands are non-tidal wetlands dominated by woody vegetation less than 20 ft. tall including true shrubs, young trees (saplings) and trees or shrubs that are small or stunted because of environmental conditions. The water regime is the same as described for Freshwater Emergent Wetland, PEM1C.

3.2 Vegetation Communities

Known as the Eastern Sierra, there are three biogeographic regions that occur within the Owens Valley: the Sierra Nevada, the Great Basin Desert and the Mojave Desert (Putman and Smith 1995). Vegetation within the Owens Valley consists of different floristic provinces. Mojavean Floristic Province occurs at the southern end of the valley in lower elevations of the alluvial fans and the Great Basin Floristic Province occurs towards the north, along the upper elevations of the alluvial fans. There are many types of shrub dominated communities in the valley, two of which occur in the PIA and are classified as Desert sink scrub and Nevada saltbush scrub (LADWP 1991).

Desert Sink Scrub

Desert sink scrub is composed of widely spaced shrubs, primarily saltbush (*Atriplex spp.*) and greasewood (*Sarcobatus spp.*), and also contains succulent plants such as iodine bush (*Allenrolfea occidentalis*) and salt heliotrope (*Heliotropium curassavicum*). Alkali sacaton (*Sporobolus airoides*) and saltgrass (*Distichlis spicata*) comprise the understory and interspaces. The community is associated with poorly drained soils with extremely high alkalinity and salt crusts, occurring on moist valley bottoms throughout the Owens Valley. It is often associated with a relatively shallow water table (LADWP 1991).

Nevada Saltbush Scrub

Nevada saltbush scrub is a moderately tall shrubland and is dominated by Nevada saltbush (*Atriplex torreyi*). Soils in this community type are typically fine-textured with a high-water holding capacity. Because of the high water holding capacity and shallow water table, salty surface crusts are visible and are a defining characteristic. This community is widely distributed throughout the valley bottom of the Owens Valley (LADWP 1991).

Meadow communities also exist within the PSA (outside of the PIA). Meadow communities consist primarily of perennial grasses and other grass like plants such as sedges (*Carex spp.*) and rushes (*Juncus spp.*) and are associated with moist soils that can be differentiated by soil alkalinity, flooding frequency, and soil moisture. The two main meadow communities in the PSA are Alkali meadow and Rabbitbrush/Nevada saltbush meadow.

Alkali Meadow

Alkali meadow consists of dense to fairly open stands of perennial grasses and sedges. Relatively few plant species form this community and grass species such as alkali sacaton and saltgrass are dominant. This community is associated with fine-textured, permanently moist, alkaline soils on valley bottoms or the lower portions of alluvial slopes and they occur at elevations of 3500 to 7000 ft.

Rabbitbrush/Nevada Saltbush Meadow

Rabbitbrush/Nevada Saltbush meadow consists of a moderate stand of perennial grasses with rabbitbrush (*Ericameria nauseosa*) and Nevada saltbush as the dominate shrubs with other species including alkali sacaton, creeping wildrye (*Leymus triticoides*), and saltgrass. This community is scattered throughout the Owens Valley on fine textured, moist, alkaline soils.

3.3 Regional Species, Habitats and Natural Communities of Concern

Based on reviews of the CNNDDB, CNPS Inventory of Rare and Endangered Plants, and the USFWS Listed Species Database, the following Table 4 lists the sensitive species and habitats that may occur within the proposed PSA:

Table 4. Sensitive Species and Habitats Potentially Occurring or Known to Occur in the Project Area

Common Name Scientific Name	Status	Habitat Description	Habitat Present or Absent	Rationale
AMPHIBIANS				
<p>Northern leopard frog <i>Lithobates pipiens</i></p>	CDFW-SSC	Variety of aquatic habitats; slow moving or still water along streams and rivers, wetlands, permanent or temporary pools, beaver ponds, and human-constructed habitats such as earthen stock tanks and borrow pits; shoreline cover, submerged and emergent aquatic vegetation; sea level to 7000'	HP	Suitable habitat may occur within the PSA; this species generally prefers permanent water with an abundance of aquatic vegetation (McNally Return Ditch does not contain this habitat); no observations of this species, sign or habitat were made within the PIA during surveys conducted in 2020 (Section 4.1.5 <i>Avoidance and Minimization Measures</i>)
BIRDS				
<p>Bank swallow <i>Riparia riparia</i></p>	ST	A spring and fall migrant in the interior, less common on the coast; in summer, restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soils, into which it digs its nesting holes; feeds predominantly over brushland, grassland, wetlands, water, and cropland; uses holes dug into cliffs and river banks for cover and will also roost on logs, shoreline vegetation, and telephone wires; requires fine textured or shady banks or cliffs to dig horizontal nesting tunnels and burrow; nest almost always near water, and lined with grasses and other plant material and feathers	A	No observations were made along McNally Return Ditch during surveys conducted in 2020
<p>Burrowing owl <i>Athene cunicularia</i></p>	CDFW_SSC	Open, dry grass land and desert habitats, and in grass, forb and open shrub stages of Pinyon-juniper and ponderosa pine habitats; use of rodent or other burrow for roosting and nesting cover	HP	Protocol-level habitat assessment and breeding season surveys were conducted in 2020; no observations were made indicating habitat use/presence

				(See Burrowing Owl Habitat Assessment and Breeding Season Survey Report)
Golden eagle <i>Aquila chrysaetos</i>	CDFW_FP	Cover includes secluded cliffs with overhanging ledges and large trees; nests on cliffs and in large trees in open areas; rugged, open habitats with canyons and escarpments used most frequently for nesting; avoidance of developed areas	HP	No cliffs, ledges, trees or canyons within the PSA; no observations were made during surveys conducted in 2020
Greater sage-grouse <i>Centrocercus urophasianus</i>	FPT	Require sagebrush varieties throughout the year for food and cover; seasonal habitats consist of sagebrush (<i>Artemisia</i> spp.), grasses and forbs; nest on ground; nest site selection is dependent upon 15% - 25% canopy cover and mean height of ~ 1-2.5'; continuous sagebrush stands are required throughout the year	A	Sagebrush habitats are not present in the PSA
Northern harrier <i>Circus hudsonius</i>	CDFW_SSC	Occurs from annual grassland up to lodgepole and alpine meadow habitats as high as 10000'; breeds from sea level to 3600' in northeastern CA; frequents meadows, grasslands, open rangelands, desert sinks and fresh and saltwater emergent wetlands; uses tall grasses and forbes in wetland, or at wetland/field border, for cover; roosts on ground	HP	Suitable foraging and nesting habitat may occur within the PSA; species is known to nest in similar habitat in the Laws area and individual birds were observed during surveys conducted in 2020; no observations of nesting birds were made (Section 4.1.5 <i>Avoidance and Minimization Measures</i>)
Prairie falcon <i>Falco mexicanus</i>	CDFW_WL	Primarily associated with perennial grasslands, savannahs, rangeland, some agricultural fields and desert scrub; requires sheltered cliff ledges for cover; usually nests in a scrape on a sheltered ledge of a cliff overlooking a large, open area; sometimes nests on old raven or eagle stick nest on cliff, bluff, or rock outcrop; uses open terrain for foraging	HP	Foraging habitat may occur within the PSA; suitable nesting habitat does not occur within the PSA; species was observed during surveys conducted in 2020
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	FE; SE	Summer resident in wet meadow and montane riparian habitats at 2000'-8000'; most often occurs in broad, open	P	One active nest site was documented in

		river valleys or large mountain meadows with lush growth of shrubby willows/understory; dense willow thickets are required for nesting and roosting; consistently absent from otherwise apparently suitable areas where the lower branches of willows had been browsed heavily by livestock		2015 within approximately 0.21 mi of the PIA along the Owens River (CDFW 2015) (Section 4.2.3 <i>Discussion of Willow Flycatcher</i>)(Appendix H)
Swainson's hawk <i>Buteo swainsoni</i>	ST	Breeds in stands with few trees in juniper-sage flats and riparian areas; forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures; roost in large trees, but will roost on ground if no trees are available; typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves	P	Suitable nesting and foraging habitat occurs within the PSA; this species was observed nesting during surveys conducted in 2020 (Section 4.2.1 <i>Discussion of Swainson's Hawk</i>)
FISHES				
Lahontan cutthroat trout <i>Oncorhynchus clarkii henshawi</i>	FT	Found in small to large rivers and lakes in the Eastern Sierra (East and West Walker Watersheds) with cool water and adequate dissolved oxygen; native population at By-Day Creek; self-sustaining transplanted populations include those on Murphy Creek, Wolf Creek, and Silver Creek	A	Project not within distributional range
Owens pupfish <i>Cyprinodon radiosus</i>	FE; SE	Good water quality, vegetation and silt or sand-covered substrate; most abundant near margins of marshes, shallow sloughs, and springs along the Owens River; shallows with sparse cattails and bulrush (<i>Scirpus spp.</i>) and a sand-silt-detritus bottom; limited in range to Owens Valley	A	McNally Return Ditch does not provide suitable habitat; the bed, bank or channel of the ditch is not within the PIA and will not be impacted by project activities (Section 4.1.5 <i>Avoidance and Minimization Measures</i>)
Owens speckled dace <i>Rhinichthys osculus ssp. 2</i>	CDFW_SSC	Variety of habitats ranging from small cold water streams and hot-spring systems; irrigation ditches near Bishop, CA; thrive in areas with deep cover or overhead protection from vegetation or woody debris	HP	CNNDB documentation during surveys in 1988 from North McNally Canal (about 0.5 mi east of Laws RR Museum); the

				bed, bank or channel of McNally Return Ditch is not within the PIA and will not be impacted by project activities (Section 4.1.5 <i>Avoidance and Minimization Measures</i>)
<p>Owens sucker <i>Catostomus fumeiventris</i></p>	CDFW_SSC	<p>Occupy waters in southeastern California and specifically in the Owens Valley; this species is most abundant in sections with long runs and few riffles; found in long stretches of soft-bottomed run in cool-water systems; inhabit the bottoms of lakes and reservoirs; endemic to the Owens Rivers drainage and is widely distributed throughout the Owens Valley; it is most abundant in Crowley Reservoir in Mono Co.; other populations exist in Convict Lake in Mono Co. and Lake Sabrina in Inyo Co.; there is an introduced population in June Lake of the Mono Lake Basin</p>	HP	<p>CNNDB documentation during surveys in 1988 from North and South McNally Canals (about 0.5 mi east of Laws RR Museum); the bed, bank or channel of McNally Return Ditch is not within the PIA and will not be impacted by project activities (Section 4.1.5 <i>Avoidance and Minimization Measures</i>)</p>
<p>Owens tui chub <i>Siphateles bicolor snyderi</i></p>	FE; SE	<p>Water with low current, muddy bottom, and dense aquatic vegetation; high quality, cool water with adequate cover in the form of rocks, undercut banks, or aquatic vegetation</p>	A	<p>McNally Return Ditch does not provide suitable habitat; the bed, bank or channel of the ditch is not within the PIA and will not be impacted by project activities (Section 4.1.5 <i>Avoidance and Minimization Measures</i>)</p>
HABITAT				
<p>Alkali meadow</p>	CDFW_CNDDDB	<p>Characterized by perennial grasses, forbs, and sedges; meadows with shallow water tables and alkaline soils</p>	P	<p>Habitat occurs within the PIA; no direct impacts to alkali meadows will occur during project</p>

				activities (Section 4.1.5 Avoidance and Minimization Measures)
Transmontane alkali marsh	CDFW_CNDDDB	Dominated by <i>Carex</i> and <i>Juncus</i> species; seasonally saturated in winter and spring; frequently occurs around natural drainage channels, levees and irrigation ditches	HP	Habitat occurs within the PSA (outside of the PIA); no direct impacts to transmontane alkali marshes will occur during project activities
INSECTS				
Morrison bumble bee <i>Bombus morrisoni</i>	CDFW_CNDDDB	From the Sierra-Cascades ranges eastward across the intermountain west; food plant genera include <i>Cirsium</i> , <i>Cleome</i> , <i>Helianthus</i> , <i>Lupinus</i> , <i>Chrysothamnus</i> and <i>Melilotus</i> species	HP Rabbitbrush	Rabbitbrush occurs within the PSA; no observations were made during surveys conducted in 2020; Section 4.1.5 Avoidance and Minimization Measures
MAMMALS				
American badger <i>Taxidea taxus</i>	CDFW_SSC	Uncommon, permanent resident found throughout most of the state, except in northern North Coast area; most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils; needs open and uncultivated ground	HP	Suitable habitat may occur within the PSA; no observations of this species or sign were made during surveys conducted in 2020
Hoary bat <i>Lasiurus cinereus</i>	IUCN_LC	Suitable habitat included all woodlands and forests with medium to large size trees and dense foliage; preferred roosting sites are hidden from above, with branches below, and have ground cover of low reflectivity; prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding; require water (poor urine-concentrating abilities); sea level to 13200'	HP	Suitable roosting habitat (hollow trees) may occur within the PSA; trees will not be impacted by project activities (no tree trimming/removal)
Owens Valley vole <i>Microtus californicus vallicola</i>	CDFW_SSC	Wide variety of habitats, but most abundant in early seral stages of montane riparian, dense annual grassland, and wet meadow; feeds on leafy parts of grasses, sedges, and herbs; seeks cover in dense grass, beneath plant residues, in brush piles, beneath logs, and in underground burrows (in soft soil)	HP	Suitable habitat may occur within the PSA; no observations of this species or sign were made during surveys conducted in 2020; no direct

				impacts to potential suitable habitat (wet meadows) associated with construction activities
Pallid bat <i>Antrozous pallidus</i>	CDFW_SSC	Wide variety of habitats including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forest; most common in open, dry habitats with rocky areas for roosting; day roosts in caves, crevices, mines, and occasionally in hollow trees and buildings; prefers rocky outcrops, cliffs and crevices with access to open habitats for foraging	HP	Suitable roosting habitat (hollow trees) may occur within the PSA; trees will not be impacted by project activities (no tree trimming/removal)
Sierra Nevada red fox <i>Vulpes vulpes necator</i>	FPE; ST	May be found in a variety of habitats, including alpine dwarf-shrub, wet meadow, subalpine conifer, Lodgepole pine, Red fir, Aspen (<i>Populus</i> spp.), montane chaparral, montane riparian, mixed conifer, and Ponderosa Pine; Jeffrey pine, and montane hardwood-conifer also are used; uses dense vegetation and rocky areas for cover and den sites; most sightings in Sierra Nevada are above 7000', ranging from 3900' to 11900'	A	No suitable habitat within the PSA (project is not located in forested habitat)
Silver-haired bat <i>Lasionycteris noctivagans</i>	IUCN_LC	Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark; mesic habitats; primarily a forest dweller, feeding less than 20 feet over streams, ponds, and open brushy areas; summer range is generally below 9000'	HP	Suitable roosting habitat (hollow trees/snags) may occur within the PSA; trees will not be impacted by project activities (no tree trimming/removal)
Spotted bat <i>Euderma maculatum</i>	CDFW_SSC	Habitats occupied include arid deserts, grasslands and mixed conifer forests; occasionally found in caves and buildings; rock crevices in cliffs or caves provide optimal roosting habitat; feeds over water and along washes; elevational range extends from below sea level in CA to above 10000' in New Mexico	A	No suitable habitat within the PSA (there are no caves/cliffs/rock crevices); buildings within the Laws RR Museum will not be impacted by project activities
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	CDFW_SSC	Found in all but subalpine and alpine habitats; prefers mesic habitats; requires caves, mines, tunnels, buildings, or other human-made structures for roosting gleans from brush or trees or feeds along habitat edges; found from sea level to 9500' in the White Mountains of CA	A	No suitable habitat within the PSA (there are no caves/mines/tunnels); buildings within the Laws RR Museum

				will not be impacted by project activities
Western small-footed myotis <i>Myotis ciliolabrum</i>	IUCN_LC	Common in arid uplands in California in relatively arid wooded and brushy uplands near water; seeks cover in caves, buildings, mines, crevices, and occasionally under bridges and under bark; requires water and often is seen to drink soon after emergence (streams, ponds, springs, and stock tanks are used); humid roost sites are preferred; sea level to 8900'	HP	Suitable roosting habitat (trees) may occur within the PSA; trees will not be impacted by project activities (no tree trimming/removal); buildings within the Laws RR Museum will not be impacted by project activities
Western white-tailed jackrabbit <i>Lepus townsendii townsendii</i>	CDFW_SSC	Preferred habitats are sagebrush, subalpine conifer, Juniper (<i>J. californica</i>), alpine dwarf-shrub, and perennial grassland; also uses low sagebrush, wet meadow, and early successional stages of various conifer habitats; open areas with scattered shrubs; resident of the crest and upper eastern slope of the Sierra Nevada; diet of grasses and forbs	A	No suitable habitat within the PSA (project is not located in sagebrush/conifer habitats)
MOLLUSKS				
California floater <i>Anodonta californiensis</i>	CDFW_CNDDDB	Freshwater mussel found in riverine habitats in shallow waters; low elevation species	A	McNally Return Ditch is an intermittent waterway; the bed, bank or channel of the ditch is not within the PIA and will not be impacted by project activities (Section 4.1.5 <i>Avoidance and Minimization Measures</i>)
Fish Slough springsnail <i>Pyrgulopsis perturbata</i>	CDFW_CNDDDB	Habitat for spring snails, in general, follow the characteristics of permanent channel flow, good water quality, a sand or gravel substrate and aquatic vegetation where water velocities are moderate	A	McNally Return Ditch is an intermittent waterway; the bed, bank or channel of the ditch is not within the PIA and will not be impacted by project activities (Section 4.1.5 <i>Avoidance and</i>

				<i>Minimization Measures)</i>
Owens Valley springsnail <i>Pyrgulopsis owensensis</i>	CDFW_CNDDDB	Habitat for spring snails, in general, follow the characteristics of permanent channel flow, good water quality, a sand or gravel substrate and aquatic vegetation where water velocities are moderate	A	McNally Return Ditch is an intermittent waterway; the bed, bank or channel of the ditch is not within the PIA and will not be impacted by project activities (Section 4.1.5 <i>Avoidance and Minimization Measures)</i>
Wong's springsnail <i>Pyrgulopsis wongi</i>	IUCN_LC	Habitat for spring snails, in general, follow the characteristics of permanent channel flow, good water quality, a sand or gravel substrate and aquatic vegetation where water velocities are moderate	A	McNally Return Ditch is an intermittent waterway; the bed, bank or channel of the ditch is not within the PIA and will not be impacted by project activities (Section 4.1.5 <i>Avoidance and Minimization Measures)</i>
PLANTS				
Alkali ivesia <i>Ivesia kingii</i> var. <i>kingii</i>	CNPS_2B.2	Great Basin scrub, meadows and seeps, playas; mesic, alkaline, clay soils; blooming period May-August; 3900'-7000'	HP	Suitable habitat may occur within the PSA (CNPS Rare Plant Inventory, presumed extant in Laws quad); no observations of this species were made during surveys conducted in 2020
Bailey's greasewood <i>Sarcobatus baileyi</i>	CNPS_2B.3	Chenopod scrub; alkaline soils, dry lakes, washes, roadsides; blooming period April-July; 4920'-5250'	HP	Suitable habitat may occur within the PSA (CNPS Rare Plant Inventory, presumed extant in Laws quad); no observations of this species were

				made during surveys conducted in 2020
Badger Flat threadplant <i>Nemacladus inyoensis</i>	CNPS_1B.2	Mojavean desert scrub and pinyon and juniper woodland; microhabitat: carbonate, granitic, gravelly, rocky, sandstone soils; found on flats, in scree and washes; blooming period May-June; 5700'-8650'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); not within elevational range; no observations of this species were made during surveys conducted in 2020
Beautiful cholla <i>Grusonia pulchella</i>	CNPS_2B.2	Desert dunes, Great Basin scrub, Mojavean Desert scrub; sandy soils; blooming period May (less common June); 4900'-6500'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Bodie Hills rockcress <i>Boechera bodiensis</i>	CNPS_1B.3	Alpine boulder and rock field, Great Basin scrub, pinyon and juniper woodland, subalpine coniferous forest; blooming period June-July (less common August); 3900'-8200'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Booth's hairy evening-primrose <i>Eremothera boothii ssp. intermedia</i>	CNPS_2B.3	Great Basin scrub (sandy soils), pinyon and juniper woodland; blooming period June (less common May); 4920'-7055'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Compact daisy <i>Erigeron compactus</i>	CNPS_2B.3	Pinyon and juniper woodland (carbonate, gravelly, rocky soils); blooming period May-July; 4265'-9515'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020

<p>Coyote gilia <i>Aliciella triodon</i></p>	CNPS_2B.2	Great Basin scrub, pinyon and juniper woodland; sandy or rocky soils; blooming period April-June; 2000'-5500'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
<p>DeDecker's clover <i>Trifolium dedeckerae</i></p>	CNPS_1B.3	Lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, upper montane coniferous forest; blooming period May-July; 6900'-11500'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); not within elevational range; no observations of this species were made during surveys conducted in 2020
<p>Falcate saltbush <i>Atriplex gardneri var. falcata</i></p>	CNPS_2B.2	Chenopod scrub, Great Basin scrub; alkaline soils; blooming period May-August; 3900'-5600' feet	HP	No observations of this species were made during surveys conducted in 2020
<p>Fiddleleaf hawksbeard <i>Crepis runcinata</i></p>	CNPS_2B.2	Mojavean Desert scrub, pinyon & juniper woodlands; moist, alkaline valley bottoms; blooming period May-August; 1250'-10200'	HP	No observations of this species were made during surveys conducted in 2020
<p>Fish Slough milk-vetch <i>Astragalus lentiginosus var. piscinensis</i></p>	FT	Playas (alkaline); blooming period June-July; 3700'-4265'	A	Not within distributional range (restricted in distribution to areas within Fish Slough)
<p>Foxtail thelypodium <i>Thelypodium integrifolium ssp. complanatum</i></p>	CNPS_2B.2	Great Basin scrub, meadows and seeps; alkaline or sub-alkaline, mesic soils; blooming period June-October; 3600'-8210'	HP	Suitable habitat may occur within the PSA (CNPS Rare Plant Inventory, presumed extant in Laws quad); no observations of this species were made during surveys conducted in 2020
<p>Frog's bit-buttercup <i>Ranunculus hydrocharoides</i></p>	CNPS_2B.1	Freshwater marshes and swamps; blooming period June-September (less common May); 3600'-8860'	A	No suitable habitat (freshwater marshes and swamps) within the PSA; the bed,

				bank or channel of McNally Return Ditch is not within the PIA and will not be impacted by project activities (Section 4.1.5 <i>Avoidance and Minimization Measures</i>); no observations of this species were made during surveys conducted in 2020
Hillman's silverscale <i>Atriplex argentea</i> var. <i>hillmanii</i>	CNPS_2B.2	Great Basin scrub, meadows and seeps; alkaline soils; blooming period June-September; 3935'-5580' feet	HP	No observations of this species were made during surveys conducted in 2020
Hot springs fimbriatilis <i>Fimbristylis thermalis</i>	CNPS_2B.2	Meadows and seeps (alkaline, near hot springs); blooming period July-September; 360'-4400'	A	No suitable habitat (meadows and seeps near hot springs) within the PSA; no observations of this species were made during surveys conducted in 2020
Inyo blazing star <i>Mentzelia inyoensis</i>	CNPS_1B.3	Great Basin scrub, pinyon and juniper woodland; blooming period April-October; 3800'-6500'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020;
Inyo County star-tulip <i>Calochortus excavatus</i>	CNPS_1B.1	Chenopod scrub, meadows and seeps; alkaline and mesic soils; blooming period April-July; 3775'- 6560'	HP	Suitable habitat may occur within the PSA (CNPS Rare Plant Inventory, presumed extant in Laws quad); no observations of this species were made during surveys conducted in 2020
Inyo phacelia <i>Phacelia inyoensis</i>	CNPS_1B.2	Meadows and seeps (alkaline); blooming period April-August; 3000'-10500'	HP	Suitable habitat may occur within the PSA;

				no observations of this species were made during surveys conducted in 2020
Jaeger's hesperidanthus <i>Hesperidanthus jaegeri</i>	CNPS_1B.2	Great Basin scrub, pinyon and juniper woodland, subalpine coniferous forest; carbonate and rocky soils; blooming period May-July; 7000'-9200'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); not within elevational range; no observations of this species were made during surveys conducted in 2020
July gold <i>Dedeckera eurekensis</i>	SR	Mojavean Desert scrub; carbonate soils and limestone slopes; blooming period May-August; 3985'-7220'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Little cutleaf <i>Hymenopappus filifolius var. nanus</i>	CNPS_2B.3	Pinyon and juniper woodland, subalpine coniferous forest; carbonate soils; blooming period May-September; 4920'-10005'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Limestone monkeyflower <i>Erythranthe calycicola</i>	CNPS_1B.3	Joshua tree woodland, Mojavean Desert scrub, pinyon and juniper woodland; usually carbonate and talus slopes; blooming period April-June; 3000'-7105'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
MacDougal's lomatium <i>Lomatium foeniculaceum ssp. macdougalii</i>	CNPS_2B.2	Chenopod scrub, Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland; volcanic soils; blooming period April-June; 3950'-6800'	HP	No observations of this species were made during surveys conducted in 2020
McGee Meadows lupine <i>Lupinus magnificus var. hesperius</i>	CNPS_1B.3	Great Basin scrub, upper montane coniferous forest; sandy soils; blooming period April-June; 3780'-5490'	A	No suitable habitat within the PSA

				(project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Nevada ninebark <i>Physocarpus alternans</i>	CNPS_2B.3	Pinyon and juniper woodland; carbonate, rocky soils; blooming period June-July; 5905'-10170'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); not within elevational range; no observations of this species were made during surveys conducted in 2020
Nevada oryctes <i>Oryctes nevadensis</i>	CNPS_2B.1	Chenopod scrub, Mojavean Desert scrub; sandy soils; blooming period April-June; 3300'-7605'	HP	Suitable habitat may occur within the PSA (CNPS Rare Plant Inventory, presumed extant in Laws quad); no observations of this species were made during surveys conducted in 2020
Owens Valley checkerbloom <i>Sidalcea covillei</i>	SE	Chenopod scrub, meadows and seeps; alkaline and mesic soils; blooming period April-June; 3285'-4245'	HP	Suitable habitat may occur within the PSA (CNPS Rare Plant Inventory, presumed extant in Laws quad); no observations of this species were made during surveys conducted in 2020 and previously conducted field/monitoring surveys (personal communication with LADWP, 2020)
Parish's popcornflower <i>Plagiobothrys parishii</i>	CNPS_1B.1	Great Basin scrub, Joshua tree woodland; mesic to wet alkaline soils around desert springs and mudflats; blooming period March-June (less common November); 2460'-7251'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub);

				no observations of this species were made during surveys conducted in 2020
Parry's monkeyflower <i>Diplacus parryi</i>	CNPS_2B.3	Great Basin scrub; blooming period May-July; 3900'-8530'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Pinyon rockcress <i>Boechera dispar</i>	CNPS_2B.3	Joshua tree woodland, Mojavean Desert scrub, pinyon and juniper woodland; rocky slopes in granitic soils; blooming period March-June; 3900'-8205'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub and microhabitat does not occur); no observations of this species were made during surveys conducted in 2020
Prairie wedge grass <i>Sphenopholis obtusata</i>	CNPS_2B.2	Cismontane woodland, meadows and seeps; mesic soils; blooming period April-July; 984'-6562'	HP	Suitable habitat may occur within the PSA (CNPS Rare Plant Inventory, presumed extant in Laws quad); no observations of this species were made during surveys conducted in 2020
Prickle-leaf <i>Hecastocleis shockleyi</i>	CNPS_3	Chenopod scrub, Mojavean Desert scrub; rocky slopes and washes (carbonate or slate); blooming period May-July; 3900'-7220'	HP	Suitable habitat may occur within the PSA (CNPS Rare Plant Inventory, presumed extant in Laws quad); no observations of this species were made during surveys conducted in 2020
Salina pass wild-rye <i>Elymus salina</i>	CNPS_2B.3	Pinyon and juniper woodland (rocky soils); blooming period May-June; 4400'-7005'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub);

				no observations of this species were made during surveys conducted in 2020
Scalloped moonwort <i>Botrychium crenulatum</i>	CNPS_2B.2	Bogs and fens, lower montane coniferous forest, meadows and seeps, marshes and swamps (freshwater), upper montane coniferous forest; blooming period June-September; 4160'-10760'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Silver-leaved milk-vetch <i>Astragalus argophyllus var. argophyllus</i>	CNPS_2B.2	Meadows and seeps, playas; alkaline or saline soils; blooming period May-July; 4070'-7710'	HP	Suitable habitat may occur within the PSA (CNPS Rare Plant Inventory, presumed extant in Laws quad); no observations of this species were made during surveys conducted in 2020
Shockley's milk-vetch <i>Astragalus serenoii var. shockleyi</i>	CNPS_2B.2	Chenopod scrub, Great Basin scrub, pinyon and juniper woodland; dry alkaline, gravelly, clay soils; blooming period May-July (less common April); 4920'-7615'	HP	Suitable habitat may occur within the PSA; no observations of this species were made during surveys conducted in 2020
Shockley's rockcress <i>Boechnera shockleyi</i>	CNPS_2B.2	Pinyon and juniper woodland (carbonate, quartzite, gravelly, rocky soils); blooming period May-June; 2870'-7580'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Small-flowered rice grass <i>Stipa divaricata</i>	CNPS_2B.3	Pinyon and juniper woodland (gravelly, carbonate soils); blooming period June-September; 2295'-9680'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020

<p>Many-flowered thelypodium <i>Thelypodium milleflorum</i></p>	CNPS_2B.2	Chenopod scrub, Great Basin scrub; sandy soils; blooming period April-June; 4000'-8205'	HP	Suitable habitat may occur within the PSA; no observations of this species were made during surveys conducted in 2020
<p>Masonic Mountain jewelflower <i>Streptanthus oliganthus</i></p>	CNPS_1B.2	Pinyon and juniper woodland (volcanic or granitic, rocky soils); blooming period June-July; 6496'-10006'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); not within elevational range; no observations of this species were made during surveys conducted in 2020
<p>Torrey's blazing star <i>Mentzelia torreyi</i></p>	CNPS_2B.2	Great Basin scrub, Mojavean Desert scrub, pinyon and juniper woodland; sandy or rocky, alkaline, usually volcanic soils; blooming period June-August; 3840'-9300'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
<p>Upswept moonwort <i>Botrychium ascendens</i></p>	CNPS_2B.3	Lower montane coniferous forest, meadows and seeps; mesic soils; blooming period July-August; 3660'-10000'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
<p>Virgate halimolobos <i>Transberingia bursifolia</i> ssp. <i>virgata</i></p>	CNPS_2B.3	Pinyon and juniper woodland, meadows and seeps; blooming period July (less common June); 6560'-9845'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); not within elevational range; no observations of this species were made during surveys conducted in 2020
<p>Western sedge <i>Carex occidentalis</i></p>	CNPS_2B.3	Lower montane coniferous forest, meadows and seeps; blooming period June-August; 5400'- 10285'	A	No suitable habitat within the PSA

				(project is dominated by chenopod scrub); not within elevational range; no observations of this species were made during surveys conducted in 2020
Western valley sedge <i>Carex vallicola</i>	CNPS_2B.3	Great Basin scrub, meadows and seeps; mesic soils; blooming period July-August; 5000'-9205'	HP	Suitable habitat may occur within the PSA; no observations of this species were made during surveys conducted in 2020
Wheeler's dune-broom <i>Chaetadelpa wheeleri</i>	CNPS_2B.2	Great Basin scrub, Mojavean Desert scrub; desert dunes; sandy soils; blooming period April-September; 2610'-6235'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub); no observations of this species were made during surveys conducted in 2020
Wright's jaffuelobryum moss <i>Jaffuelobryum wrightii</i>	CNPS_2B.3	Alpine dwarf scrub, Mojavean Desert scrub, pinyon and juniper woodland; dry openings, rock crevices, carbonate soils; 525'-8205'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub and microhabitat does not occur); no observations of this species were made during surveys conducted in 2020
REPTILES				
Panamint alligator lizard <i>Elgaria panamintina</i>	CDFW_SSC	Inhabits limited riparian areas in the desert of Inyo and Mono Counties; rocky canyon bottoms near streams and springs; creosote and sagebrush scrub and the lower edge of the Pinyon-juniper belt; dense vegetation near damp soil and in rocky talus outside of riparian areas; 2500'-8000'	A	No suitable habitat within the PSA (project is dominated by chenopod scrub in dry upland habitats; there are no streams or springs)

Habitat Present (P) – habitat is present; the species is present

Habitat Present (HP) - habitat is, or may be present; the species may be present

Habitat Absent (A) - no habitat present and no further work needed

Explanation of State and Federal Listing Codes

Federal listing codes	California listing codes
Federal Endangered (FE)	State Endangered (SE)
Federal Threatened (FT)	State Threatened (ST)
Federal Proposed (FP)	State Rare (SR)
Federal Proposed Endangered (FPE)	State Species of Special Concern (CDFW_SSC)
Federal Proposed Threatened (FPT)	State Watch List (CDFW_WL)
	CNDDDB Species list (CDFW_CNDDDB)

International Union for Conservation of Nature and Natural Resources Western Bat Working Group

Least Concern (IUCN_LC)

CNPS Rare and Endangered Plant Listing:

1B.1: Plants rare, threatened, or endangered in CA and elsewhere; seriously threatened in CA (over 80% of occurrences threatened/high degree and immediacy of threat)

1B.2: Plants rare, threatened, or endangered in CA and elsewhere; fairly threatened in CA (20-80% occurrences threatened/moderate degree and immediacy of threat)

1B.3: Plants rare, threatened, or endangered in CA and elsewhere; not very threatened in CA (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

2B.1: Plants Rare, Threatened, or Endangered in CA, but more common elsewhere; seriously threatened in CA (over 80% of occurrences threatened/high degree and immediacy of threat)

2B.2: Plants Rare, Threatened, or Endangered in CA, but more common elsewhere; fairly threatened in CA (20-80% occurrences threatened/moderate degree and immediacy of threat)

2B.3: Plants Rare, Threatened, or Endangered in CA, but more common elsewhere; not very threatened in CA (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

3: Needs review; plants about which more information is needed; these plants are united by one common theme- we lack the necessary information to assign them to one of the other ranks or to reject them; nearly all of the plants constituting California Rare Plant Rank 3 are taxonomically problematic, yet if taxonomically valid would demonstrably qualify for rank 1B or 2B.

CNPS Rare Plant Inventory, Habitat Descriptions

Alpine boulder and rock field: Fell-fields, talus slopes, and meadows found above the forest line. Favorable sites may develop continuous turf, but in most areas plants are tucked between large nurse rocks that provide protection from harsh winter conditions.

Bogs and fens: Wetlands, typically occupying sites sub-irrigated by cold, frequently acidic, water. Plant growth dense and low growing, dominated by perennials herbs or low shrubs. Saturated soils frequently allow substantial accumulations of "peat." From the Klamath Ranges to North Coast Ranges, along the North Coast and in the northern Sierra Nevada.

Chenopod scrub: Usually gray, intricately branched, microphyllous shrubs most commonly on fine-textured, alkaline and/or saline soils in areas of impeded drainage. Diversity usually low to monotonous. Saltbushes and greasewood frequently dominate. This vegetation occurs from Modoc County south to Mexico, including parts of the Great Valley and Inner South Coast Ranges.

Cismontane woodland: Trees deciduous or evergreen, forming an open canopy. Broadleaved trees, especially oaks, dominate, although conifers may be present as canopy emergents. The understory may be open and herbaceous or closed and shrubby. This type occurs on a variety of sites in lowland California.

Desert dunes: Sand accumulations east of the Pacific Crest from Modoc to Imperial Counties. Vegetation on desert dunes varies considerably. Active dunes usually support only sparse herbs and grasses, but partially stabilized or stabilized dunes often will support shrubs, including mesquite and creosote bush.

Great Basin scrub: Shrubs, ranging in height from very short, <20 centimeters, on very cold sites or shallow soils to 1–2 meters tall on warmer sites where soils are deeper. Perennial grasses occupy much of the space between shrubs. Found on the Modoc Plateau, High Cascade Range, Warner Mountains, High Sierra Nevada, East of the Sierra Nevada, and North Coast Ranges.

Joshua tree woodland: Joshua trees form an open canopy and are usually the only arborescent species present. The understory is typically a diverse mixture of microphyllous, evergreen shrubs, semi-deciduous shrubs, semi-succulents, and succulents. Found mostly in the Mojave Desert.

Lower montane coniferous forest: Open to dense stands of conifers found at lower and middle elevations in the mountains. Broadleaved trees may be present in the understory. Dense chaparral shrubs may also occur, especially in seral stands. The upper limit of lower montane coniferous forests more-or-less coincides with the elevation of maximum annual precipitation.

Marshes and swamps: Emergent, suffrutescent herbs adapted to seasonally or permanently saturated soils. These include salt, brackish, alkali, and fresh water marshes, as well as swamps with their woody dominants and hydrophytic herbs. Found sporadically throughout California.

Meadows and seeps: More-or-less dense grasses, sedges, and herbs that thrive, at least seasonally, under moist or saturated conditions. They occur from sea level to treeline and on many different substrates. They may be surrounded by grassland, forest, or shrubland.

Mojavean Desert scrub: Widely scattered creosote bushes with the space between them sometimes occupied by ephemeral, colorful shows of annuals following particularly wet winters. At elevations of 600 meters or higher; succulents and microphyllous trees lacking. This habitat type constitutes most of Munz's (1959) [Z] "Creosote bush scrub" found north of the San Bernardino/Riverside County line.

Pinyon and juniper woodland: Open stands of round-topped conifers to 5 meters in height. The understory is frequently comprised of shrubs and herbs seen in adjacent stands lacking trees. Often forms a broad ecotone between higher-elevation forest and lower elevation scrubland or grassland. Found mostly in the Mojave Desert mountains and east of the Cascade-Sierran crest.

Playas: Non-vascular plants and sparse, gray shrubs on poorly drained soils with usually high salinity and/or alkalinity due to evaporation of water from closed basins. Found from the Modoc Plateau to Sonoran Desert and in the San Joaquin Valley.

Subalpine coniferous forest: Dense to open coniferous forest found at the highest elevations of tree establishment. Occurs in areas where substantial snowpack accumulation and cold temperatures limit the growing season to three months or less.

Upper montane coniferous forest: Open to dense coniferous forest, found at high elevations in the mountains. Trees tend to be somewhat shorter than at lower elevations. The understory tends to be open, drawn from adjacent montane chaparral species, or lacking. Found above the elevation of maximum precipitation, with the growing season curtailed by accumulation of winter snow.

4.0 RESULTS: DISCUSSION OF IMPACTS AND AVOIDANCE AND MINIMIZATION MEASURES

4.1 Habitats and Natural Communities of Special Concern

Natural communities are considered to be of special concern based on the environmental laws that regulate their protection, limited distributions, and/or the habitat requirements of special-status species that occur within the PSA. Wetlands and waters of the U.S. are also protected under federal and state agencies. The following section describes the habitats and natural communities of special concern within the PSA.

4.1.1 Discussion of Wetlands and Waters of the United States

There are no wetlands within the PIA and project activities will not impact wetland resources. The Owens River does not flow through or adjacent to the PIA and was examined only for the potential to provide suitable nesting habitat for sensitive bird species. The McNally Return Ditch is within the PIA but project activities will not impact the bed, bank or channel of the ditch (all work will occur at the road crossing over the ditch). Best Management Practices (BMPs) will be used to protect water resources. All work associated with the project will occur in upland habitat (Desert sink scrub and Nevada saltbush scrub).

4.2 Special-Status Animal Species

An assessment was made in order to determine whether project activities may impact the following sensitive bird species: SWHA, BUOW and Willow flycatcher (WIFL). SWHA and BUOW protocol-level surveys were conducted and WIFL habitat that occurs along the Owens River was evaluated in terms of proximity to the PIA. The following section describes results of our findings.

4.2.1 Discussion of Swainson's Hawk

SWHA migrate to the Owens Valley every breeding season to form pairs, establish nesting territories and reproduce. Long-term monitoring efforts between CDFW, raptor biologists and volunteers (and more recently the California Department of Transportation) have shown that individuals return to breed in subsequent years. The general nesting season is roughly April through September (birds may arrive earlier).

Along United States Route 6 (north of Laws RR Museum), in Chalfant and Hammil Valleys, suitable SWHA nesting and foraging habitat exist. During the breeding season, birds can be found nesting within and adjacent to ranches and pasturelands, abandoned agricultural fields, and in trees along irrigation canals. Nesting also occurs near the Laws RR Museum and an active nest site was documented in the PSA. A total

of eight potential nest sites were identified during protocol-level nest searches, N1-N8. The following Table 5 details findings:

Table 5. Swainson’s Hawk Potential Nest Sites Recorded During Field Surveys in 2020

NEST NAME	NEST IDENTIFICATION	OVERALL STATUS
N1	Potential suitable	No activity; nest remained empty throughout the field season in 2020
N2	Potential suitable	No activity; nest remained empty throughout the field season in 2020
N3	Potential suitable	No activity; nest remained empty throughout the field season in 2020
N4	Potential suitable	No activity; nest remained empty throughout the field season in 2020
N5	Potential suitable	No activity; nest remained empty throughout the field season in 2020
N6	Previously documented by LADWP as active (personal communication with LADWP, 2020)	No nesting birds observed during field surveys in 2020
N7	Previously documented by LADWP as active (personal communication with LADWP, 2020)	No nesting birds observed during field surveys in 2020
N8	Active	At least one chick observed in nest on 12 July 2020; empty nest and no sign of fledglings during field surveys on 9 August 2020

A map was created denoting the SWHA active nest site within a 0.5 mi buffer radius- the regulatory acceptable protection buffer zone for SWHA- from the PIA (Appendix F).

4.2.2 Discussion of Burrowing Owl

Protocol-level habitat assessment and breeding season surveys were performed in May, June and July of 2020. Within the survey area, one location- Culvert 4- was documented as having potential suitable BUOW habitat. Culvert 4 is located at the southern end of the PIA nears Laws Poleta Rd. This location consisted of a barren, open area with low vegetation on the edges and an exposed, opened wooden box culvert that could be used as a burrow. After close examination during the initial and subsequent surveys, no sign of BUOW was discovered. There was no evidence of BUOW use at Culvert 4 or within the PSA. See the Habitat Assessment and Breeding Season Survey Reporting for more details.

4.2.3 Discussion of Willow Flycatcher

WIFL have been observed nesting in riparian vegetation along the Owens River, near the Laws RR Extension Project. Thorough literature reviews were made by referencing recent available documentation and GPS data from field surveys performed by CDFW (CDFW 2015). Potential suitable nesting habitat as well as one documented active nest site occurs within 0.25 mi- the regulatory acceptable protection buffer zone for WIFL- from the PIA (CDFW 2015) (Appendix G). The peak nesting season for WIFL is roughly April through August.

4.1.5 Avoidance and Minimization Measures

The following avoidance and minimization measures apply to all sensitive habitats and species that were examined:

- All construction activities will take place outside of the nesting bird season (roughly February-September)
- Anticipated construction start date will occur in fall/winter of 2021 and will take approximately 90 days until completion
- Environmentally Sensitive Area (ESA) fencing will be used along the McNally Return Ditch during construction to protect aquatic resources that occur outside of the PIA and implementation of water pollution control Best Management Practices will occur prior to and during construction
- ESA fencing will be used to protect alkali meadow habitat within the PIA from vehicle traffic and construction activities

5.0 CONCLUSIONS AND REGULATORY DETERMINATIONS

There are no impacts associated with project activities to wetlands, waters or sensitive vegetation communities; therefore, consultation with regulatory agencies, permitting and/or mitigation is not required. With the implementation of avoidance and minimization measures listed above for all sensitive resources, sensitive species are not expected to be impacted by project activities and consultation with regulatory agencies is not required. No further studies are required.

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APPENDIX A- PROJECT LOCATION PHOTOGRAPHS



Carson and Colorado Railroad grade, looking south from Laws Railroad Museum (end of current track)



Carson and Colorado Railroad grade, looking north from Laws Poleta Road



Carson and Colorado Railroad grade, looking south from McNally Return Ditch crossing



Carson and Colorado Railroad grade, looking north from McNally Return Ditch crossing



Carson and Colorado Railroad grade, looking upstream from McNally Return Ditch crossing



Carson and Colorado Railroad grade, looking downstream from McNally Return Ditch crossing



Downstream view (west facing) of McNally Return Ditch within the Project Study Area



Alkali meadow adjacent to the Project Impact Area



Wooden box culvert along the Carson and Colorado Railroad grade