APPENDIX B

BIOLOGICAL STUDY REPORT
MOUNTAIN GATE COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT

BIOLOGICAL STUDY REPORT

Water System Improvements

Mountain Gate Community Services District, Shasta County, California

Prepared for:

Mountain Gate Community Services District

April 2021

032-65

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1. INTRODUCTION

The Mountain Gate Community Services District (MGCSD) is proposing improvements to the community's water distribution system. The improvements include the replacement of approximately 23,850 feet of water main with larger diameter mains, the construction of approximately 3,000 feet of new mains, completion of improvements at the South Water Tank site, installation of ±32 new or replacement fire hydrants, replacement of up to five pressure-reducing supervisory control valves (PRVs), and installation of a new emergency intertie with the Bella Vista Water District, as well as other minor improvements. Depending on funding constraints and final design work, some of the project elements noted above may not be constructed.

The purpose of this biological study report (BSR) is to identify and characterize sensitive biological resources that may occur in the proposed work areas or that may be adversely affected by implementation of the proposed project. This BSR is intended to serve as a baseline study to assist in the preparation of subsequent environmental documentation.

ENPLAN is an environmental consulting firm with over 35 years of experience with projects throughout northern California. All work associated with this project was performed by Donald Burk, Environmental Services Manager with ENPLAN, Jacob Ewald, Environmental Scientist with ENPLAN, and Allison Loveless, Environmental Scientist with ENPLAN. Resumes for the biologists are provided in **Appendix A**.

Mr. Burk received his Master of Science degree in Botany, and Bachelor of Arts degree in Chemistry and Biological Sciences, from California State University, Chico. Having worked in the environmental consulting field since 1981, he has an in-depth background in a broad spectrum of environmental studies. His experience includes managing the preparation of CEQA/NEPA environmental compliance documents, environmental site assessments, wildlife and botanical studies, wetland delineations, reclamation plans, and stream restoration projects. Mr. Burk was responsible for the botanical surveys for this project and final review of the BSR.

Allison Loveless received her Master of Science degree in Zoology from Oklahoma State University, Stillwater, and Bachelor of Science degree in Geography (Environmental Studies) from University of California, Los Angeles. Ms. Loveless has

four years of experience working in environmental services throughout northern California. Her experience includes general wildlife surveys, endangered species surveys, and nesting bird surveys; preparing technical environmental documentation for environmental impact reports; and preparing biological study reports, wetland delineations, biological assessments, and associated GIS mapping. Ms. Loveless was responsible for drafting the BSR.

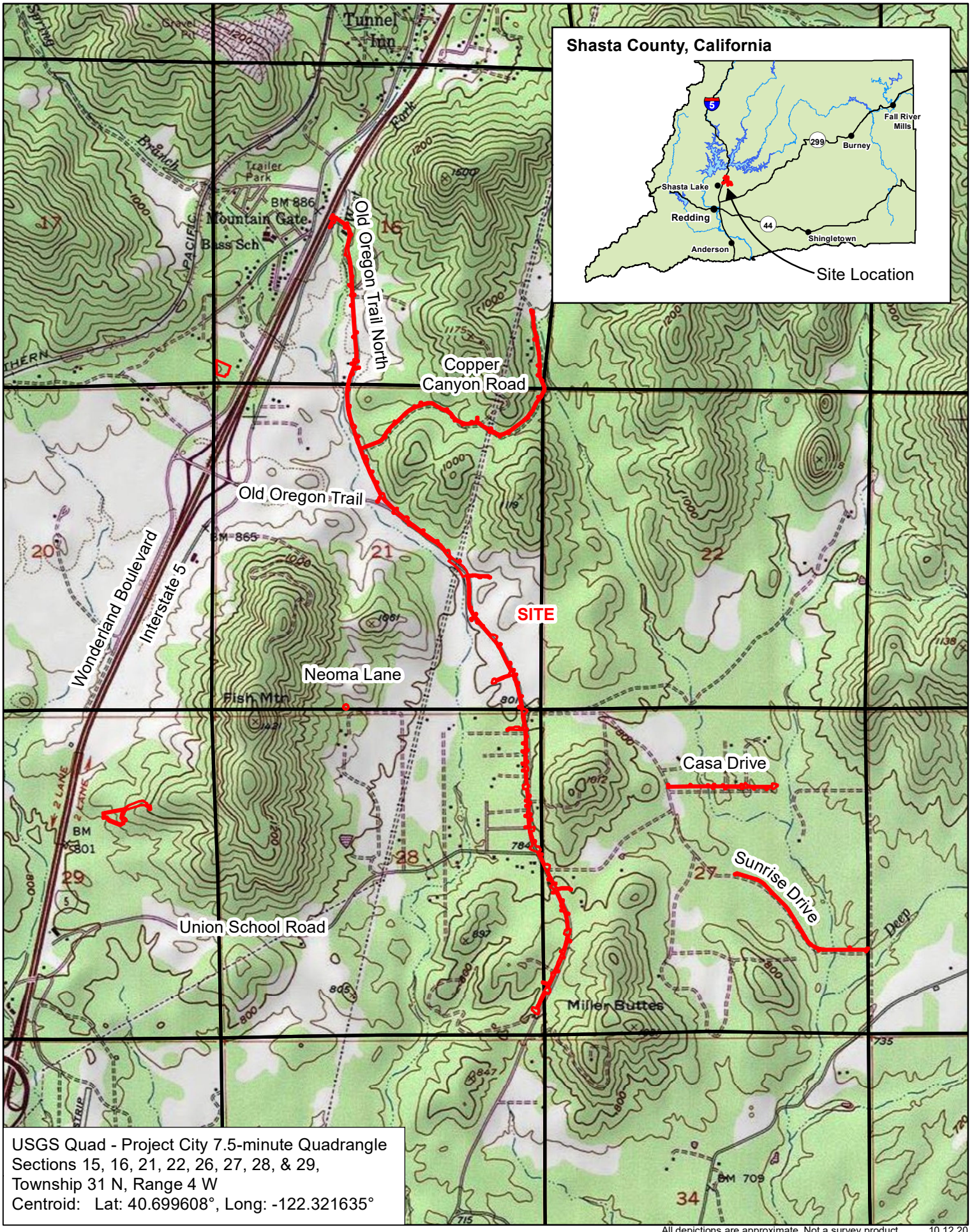
Jacob Ewald has over four years of experience working as an environmental scientist throughout California. His experience includes endangered species surveys, nesting bird surveys, and stream surveys. In addition to working in the private sector, he has extensive experience conducting research and handling wildlife working as a field biologist for federal and state agencies in California. Mr. Ewald was responsible for wildlife surveys for the project.

2. PROJECT LOCATION

As shown in **Figure 1**, the proposed project is located in and near the unincorporated community of Mountain Gate, Shasta County, in Sections 16, 21, 27, 28, and 29, Township 33N, Range 4W, of the U.S. Geological Survey's (USGS) Project City 7.5-minute quadrangle (USGS, 1957).

Improvements would occur both on the east and west sides of Interstate 5 (I-5). As shown in **Figure 2**, proposed improvements on the west side of I-5 would occur at the MGCSD Corporation Yard, 7000 Wonderland Boulevard. Proposed improvements on the east side of I-5 would occur in the public road rights-of-way (ROW) of Old Oregon Trail North, Old Oregon Trail, Copper Canyon Road, Grande Vista Lane, Lazy J Lane, Welbula Drive, El Teda Lane, Casa Drive, and Sunrise Drive, and on the MGCSD South Water Tank site. Some of the waterline improvements would occur in public utility easements on private property.

Temporary staging of construction materials and equipment would occur off Old Oregon Trail between Grande Vista Lane and Coyote Canyon Road, and off of Holiday Road near the bridge over West Fork Stillwater Creek at the northern extent of the water line improvements. Staging would also occur at the MGCSD Corporation Yard



USGS Quad - Project City 7.5-minute Quadrangle
Sections 15, 16, 21, 22, 26, 27, 28, & 29,
Township 31 N, Range 4 W
Centroid: Lat: 40.699608°, Long: -122.321635°

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All depictions are approximate. Not a survey product. 10.12.20

0 2,000 Feet

Figure 1

Project Vicinity

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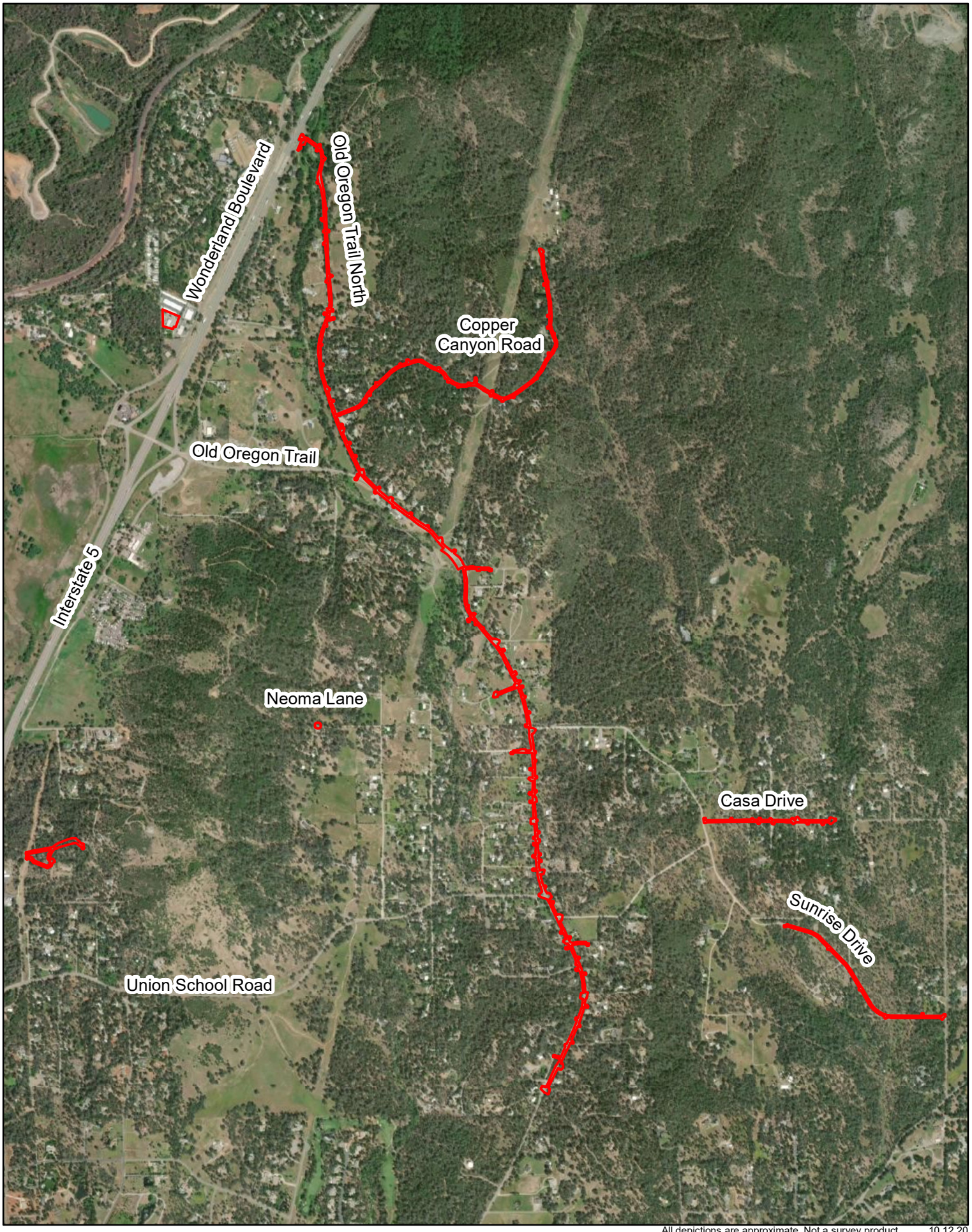

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All depictions are approximate. Not a survey product. 10.12.20

0 2,000 Feet

Figure 2

Project Site

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and in the affected road ROW throughout the project area. No physical improvements are needed to establish the staging areas.

Biological field observations generally extended approximately 100 feet beyond the project site boundaries; these off-site areas were inspected where accessible to evaluate potential indirect impacts to special-status species and their habitats.

3. PROJECT DESCRIPTION

The project entails improvements to the MGCSD public water system. Project components that are addressed in this BSR include the following:

- Old Oregon Trail Water Main: Replacement of ±15,000 feet of 6-inch water main with 12-inch water main along Old Oregon Trail and Old Oregon Trail North, generally between the northern end of Old Oregon Trail North and the Redding City limits. Replacement of associated water services, water meters, meter boxes, and appurtenances.
- Miscellaneous Water Mains: Replacement of 4-inch water mains with 6-inch and 8-inch water main in Copper Canyon Road, Grande Vista Lane, Lazy J Lane, Welbula Drive, El Teda Lane, and Casa Drive. Replacement of associated water services, water meters, meter boxes, and appurtenances.
- Sunrise Drive Water Main: Installation of ±3,000 feet of 8-inch water main in the southernmost segment of Sunrise Drive.
- South Water Tank Improvements: Installation of an 8-inch parallel water main between the water tank and Holiday Road and completion of miscellaneous piping improvements.
- Fire Hydrants: Installation or replacement of ±32 fire hydrants in various locations throughout the MGCSD water service area.
- Pressure-Reducing Valves (PRV): Replacement of a hydraulically operated PRV on Casa Drive and replacement of four PRVs with solenoid-operated, dual-stage PRVs on Old Oregon Trail, Holiday Road, Neoma Lane, and the MGCSD Corporation Yard on Wonderland Boulevard (see below). The PRVs would be installed in subsurface vaults.
- Corporation Yard Improvements: In addition to the PRV replacement, installation of a new antenna and telemetry system and extension of underground electric service from an existing service on the District's building to the PRV.
- Emergency Intertie: Installation of a new emergency intertie with the Bella Vista Water District at the southern extent of proposed water main improvements on Old Oregon Trail.

The new and replacement water mains would be installed using open-trench construction. The project would require trenching through two creeks: West Fork Stillwater Creek at the northern extent of the project area and an unnamed tributary to East Fork Stillwater Creek on Sunrise Drive. In accordance with resource agency permits, the areas at the creek crossings would be restored to pre-construction contours. Trenching through streams would be conducted between June 1 and October 31 when the streams are dry; if the streams are not dry be June 1 (which may be the case at West Fork Stillwater Creek), in-water work would occur only when flow is at a minimum and the average water temperature exceeds 25°Celsius.

At culvert crossings, the pipe would be installed in the fill overlying the culvert. If it is determined that the depth of fill is not sufficient to install the pipe over the culvert, the pipe would be installed by trenching under the culverts. In paved areas, the existing pavement would be saw-cut and removed. Following installation of the pipe, the trench would be backfilled with a compacted granular material to prevent settlement, and the pavement would be replaced. In unpaved areas, the excavation would be backfilled with select native soils, and surface vegetation would be restored.

4. AREA CHARACTERISTICS AND HABITAT TYPES

The study area is situated between approximately 710 and 1,010 feet above mean sea level in the Stillwater-Churn Creek Watershed. The climate of the project vicinity consists of hot, dry summers and mild, wet winters. Annual precipitation averages ±39.23 inches at Redding Fire Station 2, located on the west side of Redding (WRCC, 2020a) and ±61.82 inches at Shasta Dam north of Redding (WRCC, 2020b). Annual precipitation at the project site can be reasonably approximated within the range between the two above described locations.

Land uses adjacent to the Corporation Yard include undeveloped land to the west, a mobile home park to the northwest, a parking lot and commercial structure to the south, and a storage facility to the north. The District's offices and fire station are located on the same property as the Corporation Yard.

Land uses east of I-5 are primarily single-family residences on lots ranging in size from one to five acres. Most of the streets in the study area are two-lane rural

roads with no curbs, gutters, or sidewalks. The streets are paved, with the exceptions of Sunrise Drive, Casa Drive, and the northern portion of Copper Canyon Road. Representative photographs of the project study area are provided in **Appendix B**.

As a result of the field evaluation, three communities were identified in the study area: stream/riverine, oak/pine woodland, and urban. Each of these communities is briefly described below.

Stream/Riverine. The stream/riverine habitat in the study area includes ephemeral streams and intermittent streams. Ephemeral streams are drainage channels that have flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral streams are located above the water table year-round. Runoff from rainfall is the primary source of water for stream flow. Groundwater is not a source of water for ephemeral streams. Intermittent streams are drainage channels with apparent bed and bank features that flow for more than several days following precipitation events. Water sources may include direct precipitation and runoff from upstream channel reaches, and always include at least some seepage from surrounding soils (groundwater).

The largest of the streams, West Fork Stillwater Creek, is a low-gradient stream that drains oak/pine woodlands north and east of the study area and conveys flow downstream to the main stem of Stillwater Creek. Overall, West Fork Stillwater Creek is ±12 miles in length, and ranges between approximately 600 and 1,800 feet in elevation. Along its course, West Fork Stillwater Creek flows south from National Forest lands near Shasta Lake, and east past the cities of Shasta Lake and Redding. Where it crosses Old Oregon Trail North, West Fork Stillwater Creek exhibits a narrow band of riparian vegetation along both banks. Fish species that have been observed in West Fork Stillwater Creek include rainbow trout, suckers, and California roach (NSR, 2007).

The unnamed tributary to East Fork Stillwater Creek via Deep Hole Creek crosses the ESL at both Sunrise Drive and Casa Drive. The total length of the stream is about three miles; it extends about two miles north of Casa Drive and joins Deep Hole Creek just downstream of Sunrise Drive. The unnamed stream has a gravel/cobble bottom and low gradient. However, it is smaller in size than West Fork Stillwater Creek and supports minimal riparian vegetation. No data is available on fish usage within the

unnamed stream. All of the intermittent streams within the study area become disconnected from lower reaches by approximately June, eventually drying out during the summer and fall.

Stream/riverine habitat is utilized by a variety of fish and wildlife species. Pools and backwater areas also provide breeding habitat for amphibians. Waterfowl forage for aquatic plants and invertebrates in slow-moving sections of riverine habitat. Small mammals such as beaver, river otter, and muskrat may build nests in or along riverine habitat. Riverine habitat may also provide spawning and rearing habitat for resident and anadromous fish. Numerous species of macroinvertebrates occur in riverine habitats, often beneath submerged rocks (e.g., stoneflies, mayflies, and caddisflies), in mud (e.g., clams and mussels), or at the water surface (e.g., water striders, backswimmers, water boatmen, and mosquito larvae). Stream habitats are often further enriched by the presence of vegetation along their banks. Overhanging trees and shrubs provide shade and contribute to a decrease in water temperatures. Additionally, roots from trees and fallen vegetation within the stream increase habitat complexity and bank stability, and provide shelter for rearing fish, amphibians, and invertebrates.

Oak/Pine Woodland. In the study area, fragmented oak/pine woodlands are present adjacent to the road corridors. Oak/pine woodlands provide nesting habitat for a variety of migratory and resident birds, including scrub jays, acorn woodpeckers, northern flickers, oak titmice, western bluebirds, turkeys, red-tailed hawks, warblers, and many other species. Terrestrial salamanders (e.g., California slender salamander and ensatina) and western toads are occasionally found on moist soil beneath logs or fallen limbs. Western fence lizards and western skinks are particularly abundant, feeding on a variety of terrestrial insects, many of which inhabit decaying woody debris. Rattlesnakes, gopher snakes, and California kingsnakes are common in this woodland type, feeding predominantly on mice and squirrels. Mammal species that have potential to occur in oak/pine woodland include various bats, black-tailed deer, black-tailed jackrabbits, and coyotes.

The oak/pine habitat within the study area contains one 0.009-acre seasonal wetland, located north of Welbula Drive. Seasonal wetlands may provide unique habitat characteristics suitable for plant and animal species specially adapted to seasonally

flooded environments. The on-site wetland has a dense cover of non-native annual grasses.

Urban. Urban habitat is characterized as natural habitats that have been converted to facilitate development or have been substantially altered by planting non-native vegetation. The urban habitat in the study area includes paved and unpaved roadways, developed residential properties, and miscellaneous commercial/light industrial uses, primarily adjacent to Interstate 5 (I-5).

The urban habitat type includes various ornamental trees, such as olive (*Olea europaea*), mulberry (*Morus* sp.), oleander (*Nerium oleander*), lilac (*Syringa vulgaris*), and *Prunus* sp. Interspersed with the horticultural species are a number of natives such as valley oak (*Quercus lobata*), interior live oak (*Q. wislizeni*), and blue oak (*Q. douglasii*). Numerous non-native grass species have become established in clearings and road shoulders. The mosaic of planted, native, and non-native vegetation provides potential habitat for a variety of species. In spring and summer, the vegetation provides habitat for a variety of migratory bird species.

5. RECORDS REVIEW AND FIELD RECONNAISSANCE

5.1. Records Review

Records reviewed for this evaluation consisted of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) records for special-status plants, animals, and natural communities within a 5-mile radius of the study area (see **Table 1**); California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants present in the Project City 7.5-minute quadrangle (see **Table 2**); U.S. Fish and Wildlife Service (USFWS) records for federally listed, proposed, and candidate plant and animal species with potential to occur in the study area (see **Appendix C**); and National Marine Fisheries Service (NMFS) records for anadromous fish species, critical habitat, and essential fish habitat within the Project City quadrangle(see **Appendix C**).

5.2. Field Reconnaissance

To determine the presence/absence of special-status plant species, botanical field surveys were conducted by an ENPLAN biologist on April 6, April 15, June 3, and July 22, 2020. Wildlife surveys were conducted on March 26 and March 27, 2020.

The special-status plant species potentially occurring in the project area would have been identifiable at the time the botanical surveys were completed. Most special-status animal species potentially occurring in the project area would not have been evident at the time the fieldwork was conducted; however, determination of their potential presence could readily be determined based on observed habitat characteristics.

6. NATURAL COMMUNITIES

CNDDB records do not identify any sensitive natural communities within a five-mile radius of the project area. The USFWS does not identify designated critical habitat for federally listed species in the study area. NMFS does not identify any critical habitat in the study area. However, NMFS identifies critical habitat for California Central Valley (CCV) steelhead in Stillwater Creek ±7.5 miles downstream of the proposed water main improvements in West Fork Stillwater Creek (at the North Old Oregon Trail Bridge) and ±2.9 miles south of the proposed water main improvements in the intermittent stream on Sunrise Drive. NMFS identifies essential fish habitat (EFH) for Chinook salmon in the USGS Project City quadrangle.

As described above, the principal natural communities in the study area are stream/riverine, oak/pine woodland, and urban. Potential impacts of the proposed project on natural communities include the loss of several trees, temporary impacts to two intermittent streams, potential indirect impacts to downstream aquatic habitats, and temporary and permanent loss of wildlife habitat. Each of these effects is briefly discussed below.

Loss of Oak and Pine Trees. Water main improvements on Sunrise Drive immediately east of the intermittent stream crossing, would require the removal of three small trees (two oak trees and one gray pine). Although not planned, incidental removal

of additional trees in the water line corridors may be necessary due to conditions encountered during construction.

Impacts to Waters of the U.S. and State, and Riparian Habitat. The project would temporarily impact ±0.029 acres of intermittent stream (West Fork Stillwater Creek) and ±0.064 acre of intermittent stream (unnamed) on Sunrise Drive. In addition, the project would temporarily remove up to approximately 400 square feet of riparian habitat along West Fork Stillwater Creek. The riparian habitat includes willows, Himalayan blackberry, tree-of-heaven, sedges, and other species.

The project is subject to conditions of a Clean Water Act (CWA) Section 404 permit as required by the U.S. Army Corps of Engineers (USACE). It is anticipated that the proposed project qualifies for a USACE Nationwide Permit. A project requiring a USACE Section 404 permit is also required to obtain a State Water Quality Certification (or waiver) to ensure that the project will not violate established State water quality standards. A Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW) would also be required.

Among other conditions, the USACE permit requires that temporary fills be removed in their entirety and the affected areas be returned to pre-construction contours to maintain the original hydrology of the site. In addition, areas affected by temporary fills must be revegetated with native plants, as appropriate.

In addition to compliance with conditions of permits that may be required for the project, other measures to avoid or minimize impacts are warranted. **Mitigation Measure 1** limits construction activities in the intermittent streams to the period between June 1 and October 31 when the streams are dry or the water temperature exceeds 25°C, or as may otherwise be specified by jurisdictional permits/certifications issued by the CDFW, USACE, and/or Regional Water Quality Control Board.

Mitigation Measure 2 includes measures to minimize the loss of riparian habitat, and **Mitigation Measure 3** offsets the unavoidable removal of riparian habitat along West Fork Stillwater Creek through revegetating the banks of West Fork Stillwater Creek with woody riparian species native to the immediate area In addition, indirect effects of construction, such as erosion/sedimentation that enters surface waters, could adversely affect aquatic species and habitats.

MGCSD is required to obtain coverage under the State Water Resources Control Board's (SWRCB) National Pollutant Discharge Elimination System (NPDES) permit for Discharges of Storm Water Runoff Associated with Construction Activity (currently Order No. 2009-009-DWQ) by submitting a Notice of Intent to the SWRCB. The permitting process requires the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to control erosion and sedimentation and prevent damage to streams, watercourses, and sensitive habitats. BMPs may include, but are not limited to, limiting construction to the dry season; use of straw wattles, silt fences, and/or gravel berms to prevent sediment from discharging to surface waters and sensitive habitats.

In addition, as stated above, the study area includes one seasonal wetland on the north side of Welbula Lane. Although the wetland is outside of the graveled roadway, direct impacts could occur if construction activities, including vehicle parking and/or stockpiling of materials, encroached into this area. **Mitigation Measure 4** is included to require that prior to commencement of construction activities on Welbula Lane, exclusionary fencing shall be installed around the wetland.

Because MGCSD would comply with conditions of regulatory agency permits, and implement **Mitigation Measures 1 through 4,** impacts to wetlands, waters of the U.S. and State, and riparian habitat would be less than significant.

7. SPECIAL-STATUS SPECIES

7.1. Special-Status Plant Species

Review of the U.S. Fish and Wildlife Service species lists (see **Appendix C**) for the project area did not identify any federally listed or candidate plant species as potentially being affected by the proposed project. The project site does not contain designated critical habitat for federally listed plant species.

Review of California Natural Diversity Data Base (CNDDB) records (**Table 1**) showed that no special-status plant species have previously been reported in the project site. Seven special-status plants have been reported within a five-mile radius in the study area: oval-leaved viburnum, Red Bluff dwarf rush, Sanford's arrowhead, Shasta huckleberry, Shasta limestone monkeyflower, Shasta snow-wreath, and silky

cryptantha. Two non-status plants, Henderson's bent grass and northern clarkia, have also been reported in the five-mile search radius. The CNPS Inventory (**Table 2**) for the Project City quadrangle identifies seven additional non-status plants: depauperate milk-vetch, Redding checkerbloom, Sanborn's onion, slender false lupine, Shasta County arnica, Shasta maidenhair fern, and thread-leaved beakseed.

The potential for each of the special-status plant species to occur on the project sites is evaluated in **Table 3.** As documented, none of these or any other special-status plant species were observed during the botanical field survey, nor are any expected to be present. Included as **Appendix D** is a list of vascular plants observed during the botanical surveys.

7.2. Special-Status Wildlife Species

Review of the USFWS species list for the project area (see **Appendix C**) identified the following federally listed animal species as potentially being affected by the proposed project: northern spotted owl, California red-legged frog, delta smelt, Shasta crayfish, and vernal pool fairy shrimp. The USFWS does not identify any designated critical habitat in the study area for any federally listed animal species.

Review of CNDDB records showed that one special-status animal species, foothill yellow-legged frog, was reported in the northern project area one time in 1945, but the records indicate that the species is extirpated from this vicinity.

Six additional special-status animals have been reported within a five-mile radius of the study area: American peregrine falcon, bald eagle, fisher—west coast distinct population segment (DPS), purple martin, Shasta salamander, and western pond turtle. Additionally, nine non-status animals have been reported in the search radius: California linderiella, kneecap lanx, North American porcupine, Oregon shoulderband, Shasta chaparral, Shasta hesperian, silver-haired bat, Wintu sideband, and Yuma myotis.

The NMFS records identify the following federally listed anadromous fish species in the USGS Project City quadrangle: Chinook salmon-Central Valley spring-run evolutionarily significant unit (ESU), Chinook salmon-Sacramento River winter-run ESU, and California Central Valley (CCV) steelhead-distinct population segment (DPS). Essential fish habitat is identified in the USGS Project City quadrangle for Chinook

salmon. In addition, Chinook salmon – Central Valley fall/late fall-run ESU are known to occur in East Fork Stillwater Creek.

The potential for each of the above special-status animal species to occur on the project site is further evaluated in **Table 3**. As documented, although no special-status species were observed during the field surveys, potentially suitable habitat occurs in the project area for fall/late fall-run Chinook salmon and CCV steelhead.

Salmonids, which include Chinook salmon and steelhead, inhabit clear, cold waters. Due to their dependency on dissolved oxygen, Chinook salmon and steelhead have strict thermal requirements. According to Armour (1991), the preferred temperature ranges for the different life stages of Chinook salmon are as follows: adult migration (3.3ºC–14.4ºC), adult spawning (4.4ºC–13.9ºC), egg incubation and fry emergence (5.0ºC–14.4ºC), and juvenile rearing (5.0ºC–14.4ºC). Carter (2005) summarized previous research conducted by others on the thermal tolerances of salmonids and found that temperature ranges lethal to all life stages of Chinook salmon and Central Valley steelhead are 25ºC and 21ºC, respectively. The various runs of anadromous Chinook salmon in California are differentiated primarily by the maturity of adult fish entering freshwater and time of spawning migrations (Moyle, 2002).

Fall/late-fall run Central Valley Chinook salmon *(Oncorhynchus tshawytscha)*

The fall/late fall-run Chinook salmon are listed as State Species of Special Concern. Mainstem Stillwater Creek supports a diverse array of fish, including resident fish, anadromous salmonids, and a variety of non-native fish. The lower reaches of Stillwater Creek are presumed to rear all four runs of Chinook salmon: Central Valley fall-run, Central Valley late fall-run, Central Valley spring-run, and Sacramento River winter-run (Maslin et al. 1997). When there is sufficient rainfall and corresponding high flows, fall-run and late-fall run Chinook salmon are known to ascend and spawn in the higher reaches of Stillwater Creek.

No information is available on the number of adult fall-run or late-fall run salmon that return annually to Stillwater Creek and its tributaries; however, a small number of adults are presumed to return annually to spawn. West Fork Stillwater Creek and the unnamed tributary of East Fork Stillwater Creek via Deep Hole Creek have adequate water depth and substrate for adult and juvenile

Chinook salmon. However, by June 1, downstream portions of Stillwater Creek are dry and there is no connectivity to the Sacramento River seasonally, and/or water temperatures are above 25ºC and are lethal to salmonids. Work conducted between June 1 and October 31 would have no direct effect on fall or late-fall-run survival (see **Mitigation Measure 1**).

CCV Steelhead DPS *(Oncorhynchus mykiss irideus)*

CCV steelhead are federally listed as Threatened. The majority of the CCV steelhead spawning migration occurs between August and March (Schafter, 1980; Vogel and Marine, 1991). Spawning then occurs between December and April in streams with cool, well-oxygenated water that is available year-round. Eggs incubate for one to four months before the fry emerge. Newly emerged fry move to shallow stream margins to escape predation and high water velocities. Steelhead may remain in fresh water for one to four years before emigrating, but typically emigrate after two years in fresh water. Once at sea, adults spend anywhere from one to four years there before returning to fresh water to spawn as four- or five-year-olds.

CCV steelhead populations have not been well documented in Stillwater Creek and its tributaries, and it is difficult to assess the current status of steelhead in the watershed due to a lack of records of historical distribution and abundance. Although no specific studies have investigated the number of adult steelhead that return annually to spawn in Stillwater Creek and its tributaries, given the similarity of habitat preference steelhead share with fall-run and late-fall run Chinook salmon, and the potential for salmon to occur in the upper reaches of Stillwater Creek it is expected that CCV steelhead have the potential to be present in West Fork Stillwater Creek and the unnamed tributary to East Fork Stillwater Creek via Deep Hole Creek in the study area.

As noted above, by June 1, downstream portions of Stillwater Creek are dry and there is no connectivity to the Sacramento River, and/or water temperatures are above 25ºC and are lethal to CCV steelhead. Work conducted

between June 1 and October 31 would have no direct effect on CCV steelhead survival (see **Mitigation Measure 1**).

Potential indirect effects on Chinook salmon and steelhead include habitat degradation if sediment laden water enters an intermittent stream, and/or downstream waters. In addition, indirect effects could occur if the project results in degradation of stream vegetation, such as riparian habitat.

As discussed in Section 6, BMPs for sediment control and spill prevention would be implemented in accordance with SWRCB requirements to minimize/avoid the potential for indirect impacts on Chinook salmon. In addition, **Mitigation Measure 2** includes measures to minimize the loss of riparian habitat, and **Mitigation Measure 3** offsets the loss of riparian habitat along West Fork Stillwater Creek by revegetating the stream banks with woody riparian species native to the immediate area.

8. NESTING MIGRATORY BIRDS

Under the Migratory Bird Treaty Act (MBTA) of 1918, migratory bird species, their nests, and their eggs are protected from injury or death, and any project-related disturbances during the nesting period. In addition, California Fish and Game Code §3503 provides regulatory protection to resident and migratory birds and all birds of prey within the State.

The USFWS identified the following migratory Birds of Conservation Concern as potentially affected by the proposed project: bald eagle, California thrasher, common yellowthroat, Costa's hummingbird, golden eagle, Lewis's woodpecker, Nuttall's woodpecker, oak titmouse, rufous hummingbird, song sparrow, spotted towhee, and yellow-billed magpie. The potential for each of these species to utilize the project site is evaluated in **Table 4**. As documented in the table, there are seven bird species of conservation concern that have potential to be present in the study area.

Although no nests were observed during the biological field screening, birds could potentially nest in vegetation or on structures in and adjacent to the study corridor in subsequent years. If present during construction, nesting birds could be directly or indirectly affected by construction activities. Direct effects could include mortality

resulting from tree removal or from construction equipment operating in an area containing an active nest with eggs or chicks. Indirect effects could include nest abandonment by adults in response to loud noise levels or human encroachment, or a reduction in the amount of food available to young birds due to changes in feeding behavior by adults.

In the local area, most birds nest between February 1 and August 31, and the potential for adversely affecting nesting birds can be greatly minimized by conducting vegetation removal before February 1 or after August 31. If this is not possible, a nesting survey should be conducted prior to commencement of construction. If active nests are found, MGCSD would consult with CDFW and the USFWS regarding appropriate action to comply with the Migratory Bird Treaty Act and California Fish and Game Code §3503. Compliance measures may include, but are not limited to, exclusionary buffers, sound attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists (see **Mitigation Measure 5**).

9. NOXIOUS WEEDS

The introduction and spread of noxious weeds during construction activities has the potential to impact natural habitats. A noxious weed is a plant that has been defined as a pest by federal or state law. In California, the California Department of Food and Agriculture (CDFA, 2021) maintains a list of plants that are considered threats to the well- being of the state. Each noxious weed identified by the CDFA receives a rating that reflects the importance of the pest, the likelihood that eradication or control efforts would be successful and the present distribution of the pest within the state. Below is a description of ratings categories that apply to the study area:

> **Category A**. A pest of known economic or environmental detriment and is either not known to be established in California or it is present in a limited distribution that allows for the possibility of eradication or successful containment. A-rated pests are prohibited from entering the state because they have been determined to be detrimental to agriculture.

Category B. A pest of known economic or environmental detriment and, if present in California, it is of limited distribution. B-rated pests are eligible to enter the state if the receiving county has agreed to accept them.

Category C. A pest of known economic or environmental detriment and, if present in California, it is usually widespread. C-rated organisms are eligible to enter the state as long as the commodities with which they are associated conform to pest cleanliness standards when found in nursery stock shipments.

According to CalFlora records, eight noxious weeds (primarily in Categories B and C) have been documented in the general project vicinity. The potential for introduction and spread of noxious weeds can be avoided/minimized through standard construction measures such as using only certified weed-free erosion control materials, mulch, and seed; limiting any import or export of fill material to material that is known to be weed free; and requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering and upon leaving the job site. (see **Mitigation Measure 6**).

10. CONCLUSIONS AND RECOMMENDATIONS

Based on the records search results, field observations, and the above analyses, we find that the proposed project would temporarily impact two intermittent streams; has the potential to directly or indirectly affect special-status wildlife species (CCV steelhead), if present; has the potential to directly and indirectly affect riparian habitat and a seasonal wetland; has the potential to affect nesting birds (if present); and could result in the introduction and spread of noxious weeds. However, implementation of conditions of regulatory agency permits, use of BMPs for spill prevention and erosion control, and implementation of the following mitigation measures would reduce the proposed project's potential impacts on biological resources to a less-than-significant level.

Mitigation Measure 1: Limit the Work Period for Stream Bed and Bank Work

Construction activities within the ordinary high-water mark of streams shall be limited to the period between June 1 and October 31, or as may otherwise be specified through jurisdictional permits/certifications issued by the California Department of Fish and Wildlife, U.S. Army Corps of Engineers, and/or Regional Water Quality Control Board. If

work is proposed outside of the agency-approved work windows, the Mt. Gate Community Services District shall obtain approval from those agencies prior to conducting such work, and shall implement any additional measures that may be required.

Mitigation Measure 2: Minimize Loss of Riparian Habitat

Loss of riparian habitat along drainages shall be minimized to the extent feasible. Measures to be taken to minimize such loss include the following:

- Minimize the construction disturbance to riparian habitat along drainage systems through careful pre-construction planning.
- Install high-visibility fencing, flagging, or other markers along the outer edges of the construction zone where needed to prevent accidental entry into riparian habitat.
- Stockpile equipment and materials outside of riparian habitat, in the designated staging areas.
- Prune any riparian plants at ground level where feasible (as opposed to mechanically removing the entire plant and root system) in temporary use areas, which will promote regeneration from the root systems.

Mitigation Measure 3: Offset the Loss of Riparian Vegetation

The unavoidable removal of riparian vegetation shall be offset by revegetating the banks of West Fork Stillwater Creek with woody riparian species native to the immediate area (e.g., willow species). Stem cuttings or rooted plants shall be outplanted into the pre-project riparian zone during the fall/winter season immediately following installation of the water main through West Fork Stillwater Creek, after the soil has been thoroughly moistened by fall rains. Additional riparian planting specifications are provided in Appendix E.

Mitigation Measure 4: Avoid Indirect Impacts to Wetlands

High-visibility fencing, flagging, or other markers shall be installed along the outer edges of the construction zone adjacent to the seasonal wetland on Welbula Lane. The fencing location shall be determined by a qualified biologist in consultation with the project engineer and MGCSD. No construction activities (e.g., clearing, grading, trenching, etc.), including vehicle parking and materials stockpiling, shall occur within the fenced area. The exclusionary fencing shall be periodically inspected during construction activities on Welbula Lane to ensure the fencing is properly maintained. The fencing shall be removed upon completion of work.

Mitigation Measure 5: Avoid Effects to Nesting Birds and Raptors.

In order to avoid impacts to nesting birds and raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5, including their nests and eggs, one of the following shall be implemented:

a. Vegetation removal and other ground-disturbance activities associated with construction shall occur between September 1 and January 31 when birds are not nesting; or

b. If vegetation removal or ground disturbance activities occur during the nesting season, a pre-construction nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area.

   Surveys shall begin prior to sunrise and continue until vegetation and nests have been sufficiently observed. The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds. At a minimum, the survey report shall include a description of the area surveyed, date and time of the survey, ambient conditions, bird species observed in the area, a description of any active nests observed, any evidence of breeding behaviors (e.g., courtship, carrying nest materials or food, etc.), and a description of any outstanding conditions that may have impacted the survey results (e.g., weather conditions, excess noise, the presence of predators, etc.).

   The results of the survey shall be submitted to the California Department of Fish and Wildlife upon completion. The survey shall be conducted no more than one week prior to the initiation of construction. If construction activities are delayed or suspended for more than one week after the pre-construction survey, the site shall be resurveyed.

   If active nests are found, appropriate actions shall be implemented to ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

Mitigation Measure 6: Minimize the Introduction and Spread of Noxious Weeds.

The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

a. Using only certified weed-free erosion control materials, mulch, and seed.

b. Limiting any import or export of fill material to material that is known to be weed free.

c. Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the job site and upon leaving the job site.

11. REFERENCES CITED

Armour, C.L. 1991. Guidance for evaluating and recommending temperature regimes to protect fish. U.S. Fish and Wildlife Service, Biological Report 90(22).

California Department of Food and Agriculture (CDFA). 2021. California Noxious Weeds. <https://www.cdfa.ca.gov/plant/ipc/encycloweedia/weedinfo/winfo_table-sciname.html#>. Accessed May 2021.

California Department of Fish and Wildlife. 2021. California Natural Diversity Database, March 2021 data.

_____. 2020. California Sensitive Natural Communities. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline>. Accessed March 2021.

California Native Plant Society (CNPS), Rare Plant Program. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). <://www.rareplants.cnps.org>. Accessed March 2021.

Carter, Katharine. 2005. The Effects of Temperature on Steelhead Trout, Coho Salmon, and Chinook Salmon Biology and Function by Life Stage: Implications for Klamath Basin TMDLs. Central Valley Regional Water Quality Control Board, North Coast Region. <http://www.swrcb.ca.gov/northcoast/water_issues/programs/tmdls/shasta_river/060707/28appendixaetheeffectsoftemperatureonsteelheadtroutcohosalmonandchinooksalmonbiologyandfunction.pdf>.

Maslin, P., M. Lennox, J. Kindopp, and W. McKinney. 1997. Intermittent Streams as Rearing Habitat for Sacramento River Chinook Salmon (*Oncorhynchus tshawytscha*): 1997 Update.

Moyle, P. B. 2002. Inland Fishes of California. Revised and expanded. Berkeley: University of California Press. 502 pp.

National Marine Fisheries Service (NMFS). 2021. Protected Resources App (Critical Habitat Data). <https://www.webapps.nwfsc.noaa.gov/portal/apps/webappviewer/index.html?id=7514c715b8594944a6e468dd25aaacc9> Accessed March 2021.

North State Resources. 2007. Stillwater-Churn Creek Watershed Assessment. Prepared for the Western Shasta Resource Conservation District.

Schafter, R.G. 1980. Fish Occurrence, Size, and Distribution in the Sacramento River near Hood, California during 1973 and 1974. CDFG. Anad. Fish. Br. Rpt. No. 80-3.

U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 2021. Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed March 2021.

U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 2020. California State Noxious Weeds List. <https://plants.usda.gov/java/noxious?rptType=State&statefips=06> Accessed August 25, 2020

United States Fish and Wildlife Service (USFWS). 2021. Official Species List. March 2021.

United States Geological Survey. 1957. Project City, California, 7.5-minute topographic map. Photo-revised 1969.

Vogel, D. A. and K. R. Marine. 1991. Guide to upper Sacramento Chinook salmon life history. Report to U.S. Bureau of Reclamation, Central Valley Project. CH2M Hill, Inc., Redding, California. 55 pp.

Western Regional Climate Center. 2020a. Redding Fire Station 2, California (047296). <https://wrcc.dri.edu/cgi-bin/climMAIN.pl?ca7296>.

_____. 2020b. Shasta Dam, California (048135). <https://wrcc.dri.edu/cgi-bin/clinMAIN.pl?ca8135>.

TABLES

TABLE 1
CNDDB Report Summary

Five-Mile Radius of Project Area
March 2021

Listed Element	Quadrangle [1]							Status [2]
	BV	BM	EP	MM	OB	PJ	SD	
ANIMALS								
American peregrine falcon		•						FD, SD, SFP
Bald eagle	•				•	•	•	FD, SE, SFP
California linderiella						•		None
Fisher – West Coast DPS					•	•	•	SSSC
Foothill yellow-legged frog			•		•	•	•	SE, SSSC
Kneecap lanx					•			None
North American porcupine	•							None
Oregon shoulderband*					•	•		None
Purple martin	•							SSSC
Shasta chaparral	•				•	•	•	None
Shasta hesperian						•		None
Shasta salamander	•			•	•	•	•	ST
Silver-haired bat					•			None
Western pond turtle					•	•		SSSC
Wintu sideband						•		None
Yuma myotis		•						None
PLANTS								
Henderson's bent grass						•		3.2
Northern clarkia						•		4.3
Oval-leaved viburnum	•							2B.3
Red Bluff dwarf rush						•		1B.1
Sanford's arrowhead						•		1B.2
Shasta huckleberry							•	1B.3
Shasta limestone monkeyflower					•			1B.1
Shasta snow-wreath	•				•	•		1B.2
Silky cryptantha			•			•		1B.2

Highlighting denotes the quadrangle in which the project site is located

[1]QUADRANGLE CODE

BV	Bella Vista	OB	O'Brien
BM	Bohemotash Mtn.	PJ	Project City
EP	Enterprise	SD	Shasta Dam
MM	Minnesota Mtn.		

[2]STATUS CODES

Federal

FE	Federally Listed – Endangered
FT	Federally Listed – Threatened
FC	Federal Candidate Species
FP	Federal Proposed Species
FD	Federally Delisted
FSC	Federal Species of Concern

State

SFP	State Fully Protected
SR	State Rare
SE	State Listed – Endangered
ST	State Listed – Threatened
SC	State Candidate Species
SD	State Delisted
SSSC	State Species of Special Concern

Rare Plant Rank

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2	Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3	Plants About Which We Need More Information *(A Review List)* (generally not considered special-status, unless unusual circumstances warrant)
4	Plants of Limited Distribution *(A Watch List)* (generally not considered special-status, unless unusual circumstances warrant)

Rare Plant Threat Ranks

0.1 Seriously Threatened in California

0.2 Fairly Threatened in California

0.3 Not Very Threatened in California

TABLE 2
California Native Plant Society
Inventory of Rare and Endangered Plants

U.S. Geological Survey's Project City 7.5-minute Quadrangles

March 2021

Common Name	Scientific Name	CA Rare Plant Rank	Blooming Period	State Listing Status	Federal Listing Status
Depauperate milk-vetch	*Astragalus pauperculus*	4.3	Mar-Jun	None	None
Henderson's bentgrass	*Agrostis hendersonii*	3.2	Apr-Jun	None	None
Northern clarkia	*Clarkia borealis* ssp. *borealis*	4.3	Jun-Sep	None	None
Red Bluff dwarf rush	*Juncus leiospermus* var. *leiospermus*	1B.1	Mar-Jun	None	None
Redding checkerbloom	*Sidalcea celata*	3	Apr-Aug	None	None
Sanborn's onion	*Allium sanbornii* var. *sanbornii*	4.2	May-Sep	None	None
Sanford's arrowhead	*Sagittaria sanfordii*	1B.2	May-Oct (Nov)	None	None
Shasta County arnica	*Arnica venosa*	4.2	May-Jul (Sep)	None	None
Shasta maidenhair fern	*Adiantum shastense*	4.3	Apr-Aug	None	None
Shasta snow-wreath	*Neviusia cliftonii*	1B.2	Apr-Jun	None	None
Silky cryptantha	*Cryptantha crinita*	1B.2	Apr-May	None	None
Slender false lupine	*Thermopsis gracilis*	4.3	Mar-Jul	None	None
Thread-leaved beakseed	*Bulbostylis capillaris*	4.2	Jun-Aug	None	None

Rare Plant Rank	
1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2	Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3	Plants About Which We Need More Information – A Review List (generally not considered special-status, unless unusual circumstances warrant)
4	Plants of Limited Distribution – A Watch List (generally not considered special-status, unless unusual circumstances warrant)
Rare Plant Threat Rank	
0.1	Seriously Threatened in California
0.2	Fairly Threatened in California
0.3	Not Very Threatened in California

Source: *California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). http://www.rareplants.cnps.org. Accessed March 16, 2020.*

TABLE 3

Potential for Special-Status Species to Occur on the Project Site

March 2021

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
PLANTS							
Oval-leaved viburnum	*Viburnum ellipticum*	2B.3	Oval-leaved viburnum is a perennial deciduous shrub that occurs in chaparral, cismontane woodland, and lower montane coniferous forests. The species often occurs on north-facing slopes covered by dense brush. Oval-leaved viburnum is found between 700 and 4,600 feet in elevation. The flowering period is May and June.	No	No	No	Although potentially suitable habitat for oval-leaved viburnum is present in the project site, the species was not observed during the botanical survey and is not expected to be present.
Red Bluff dwarf rush	*Juncus leiospermus* var. *leiospermus*	1B.1	Red Bluff dwarf rush is an annual herb that typically occurs along the edges of vernal pools and vernal drainages, or on clay-rich terrace soils. The species is found between 100 and 3,400 feet in elevation. The flowering period is March through May.	No	No	No	No vernal pools or other potentially suitable habitat for Red Bluff dwarf rush are present in the project site. Red Bluff dwarf rush was not observed during the botanical survey and is not expected to be present.
Sanford's arrowhead	*Sagittaria sanfordii*	1B.2	Sanford's arrowhead occurs in freshwater ponds, marshes, and ditches with long-duration ponding. The species is reported from sea level to 2,200 feet in elevation. The flowering period is May through October.	No	No	No	According to CNDDB records, the closest reported occurrences of Sanford's arrowhead are in the floodplain of Stillwater Creek, ±4 miles southeast of the project site. No suitable habitat for Sanford's arrowhead is present in the project site. Sanford's arrowhead was not observed during the botanical survey and is not expected to be present.
Shasta huckleberry	*Vaccinium shastense* ssp. *shastense*	1B.3	Shasta huckleberry, a perennial deciduous shrub, occurs in a variety of acidic habitats and is often associated with acid mine drainage. Shasta huckleberry may be found along streambanks, around seeps, rocky outcrops, roadsides, and in disturbed areas within chaparral, cismontane woodland, coniferous forest, and riparian communities. The species is reported between 1,000 and 4,000 feet in elevation. The flowering period is December through September.	No	No	No	According to CNDDB records, Shasta huckleberry was reported ±3.6 miles northwest of the project site in 1914; however, this species is thought to be extirpated from this location. Shasta huckleberry was not observed during the botanical survey and is not expected to be present.

TABLE 3

Potential for Special-Status Species to Occur on the Project Site

March 2021

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Shasta limestone monkeyflower	*Erythranthe taylorii*	1B.1	Shasta limestone monkeyflower occurs on limestone rocks in the vicinity of Shasta Lake. The species is reported between 1,100 and 3,300 feet in elevation. The flowering period is February through May.	No	No	No	No suitable habitat for Shasta limestone monkeyflower is present in the project site. Shasta limestone monkeyflower was not observed during the botanical survey and is not expected to be present.
Shasta snow-wreath	*Neviusia cliftonii*	1B.2	Shasta snow-wreath is a shrub that occurs in cismontane woodland, lower montane coniferous forest, and riparian woodland, often on shaded, north-facing, or sheltered canyons, and occasionally on limestone and in mesic areas. The species is found between 900 and 1,700 feet in elevation. The species is known from fewer than 20 occurrences in the mountains around Lake Shasta. The flowering period is April through June.	No	No	No	According to CNDDB records, the closest reported occurrence of Shasta snow-wreath is approximately 1.4 miles northeast of the project site at the Fawndale Quarry. Shasta snow-wreath was not observed during the botanical survey and is not expected to be present.
Silky cryptantha	*Cryptantha crinita*	1B.2	Silky cryptantha is an annual herb that occurs along low-gradient seasonal streams with broad floodplains, usually on the valley floor, where it is found on gravelly or cobbly substrates. The species also occurs in vernally moist uplands. Less frequently, it occurs along perennial streams, including the Sacramento River. The species is found between 200 and 4,000 feet in elevation. The flowering period is April and May.	No	No	No	According to CNDDB records, the closest reported occurrence of silky cryptantha is approximately 2.8 miles southeast of the project site. The species was not observed during the botanical survey and is not expected to be present.
INVERTEBRATES							
Shasta crayfish	*Pacifastacus fortis*	FE	Shasta crayfish inhabit sections of the Pit River, Fall River, Hat Creek, and tributary streams and springs characterized by cool, clear water, low gradient, and substrate consisting of volcanic rubble on sand and/or gravel.	No	No	No	No suitable habitat occurs in the project site for Shasta crayfish. The Shasta crayfish would thus not be present.

TABLE 3

Potential for Special-Status Species to Occur on the Project Site

March 2021

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Vernal pool fairy shrimp inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump or basalt-flow depression pools.	No	No	No	No vernal pools or other potentially suitable habitats for vernal pool fairy shrimp are present in the project site. Vernal pool fairy shrimp would thus not be present.
BIRDS							
American peregrine falcon	*Falco peregrinus anatum*	FD, SD, SFP	American peregrine falcons frequent water bodies in open areas with cliffs and canyons nearby for nesting. This falcon feeds and breeds near water.	No	No	No	No cliffs, canyons, or potentially suitable nesting habit near open bodies of water are present in the project site. Thus, American peregrine falcons are not expected to nest in the project site.
Bald eagle	*Haliaeetus leucocephalus*	FD, SE, SFP	Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles do not usually begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	No	No	No	No old-growth forest or potentially suitable nesting trees/snags near open bodies of water are present in the project site. Thus, bald eagles are not expected to nest in the project site.
Northern spotted owl	*Strix occidentalis caurina*	FT, SC, SSSC	Northern spotted owls inhabit dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir forests from sea level to approximately 7,600 feet in elevation. Northern spotted owls typically nest in tree cavities, the broken tops of trees, or in snags.	No	No	No	No old-growth forest or potentially suitable nesting trees/snags are present in the project site. Thus, the spotted owl is not expected to nest in the project site.

TABLE 3

Potential for Special-Status Species to Occur on the Project Site

March 2021

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Purple martin	*Progne subis*	SSSC	Purple martins inhabit woodlands and low elevation coniferous forests of Douglas-fir, ponderosa pine, and Monterey pine. Purple martins nest in old woodpecker cavities or in man-made structures such as culverts, bridges, or nest boxes.	No	No	No	Although marginally suitable nesting habitat is present in the project area, purple martins were not observed during the biological surveys and are not expected to nest in the project site.
AMPHIBIANS							
California red-legged frog	*Rana draytonii*	FT	Suitable aquatic habitat for the California red-legged frog (CRLF) consists of permanent water bodies of virtually still or slow-moving fresh water, including natural and man-made ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds. Dense, shrubby riparian vegetation, e.g., willow (*Salix*) and bulrush (*Scirpus*) species, and bank overhangs are important features of CRLF breeding habitat. The CRLF tends to occur in greater numbers in deeper, cooler pools with dense emergent and shoreline vegetation.	No	No	No	CRLF is considered to be extirpated in Shasta County. The nearest confirmed, extant population is in Butte County, ±80 miles southeast of the project site. The species is not present in the project area.
Foothill yellow-legged frog	*Rana boylii*	SE, SSSC	Foothill yellow-legged frogs are typically found in shallow, partly shaded, perennial streams in areas with riffles and rocky substrates. This frog needs at least some cobble-sized substrate for egg-laying. Foothill yellow-legged frogs generally prefer low- to moderate-gradient streams, especially for breeding and egg-laying, although juvenile and adult frogs may utilize moderate- to steep-gradient streams during summer and early fall.	No	No	No	According to CNDDB records, foothill yellow-legged frog was reported in the northern project area one time in 1945, but the records indicate that the species is extirpated from this vicinity. Further, streams in the study area are ephemeral or intermittent and do not provide suitable habitat for foothill yellow-legged frog. The species was not observed during the wildlife survey and is not expected to be present.

TABLE 3

Potential for Special-Status Species to Occur on the Project Site

March 2021

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Shasta salamander	*Hydromantes shastae*	ST	The Shasta salamander is primarily restricted to limestone outcrops near Lake Shasta. Habitat consists of moist limestone fissures and caves, limestone talus, and under woody debris on the surface near limestone outcrops. Shasta salamanders may be found in all successional stages of valley foothill hardwood-conifer, ponderosa pine, and mixed conifer habitats.	No	No	No	According to CNDDB records, the closest reported occurrence of Shasta salamander is ±0.6 miles northeast of the project site. A single juvenile was reported in 1994 in a limestone outcropping. There are no limestone outcrops or other suitable habitats for the Shasta salamander in the project area. Thus, the Shasta salamander would not be present.
REPTILES							
Western pond turtle	*Emys marmorata*	SSSC	The western pond turtle associates with permanent or nearly permanent quiet-water environments. Pond turtles require basking sites such as partially submerged logs, rocks, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying. Nesting and courtship occur during spring. Nests are generally constructed within 500 feet of a waterbody. Pond turtles may leave aquatic sites in the fall and overwinter in nearby uplands, returning to the aquatic sites in spring.	No	No	No	No suitable habitat occurs in the project site for western pond turtle. The western pond turtle would thus not be present.
FISH							
Chinook salmon – Central Valley fall/late fall-run ESU	*Oncorhynchus tshawytscha pop. 13*	SSSC	The Central Valley fall/late fall-run Chinook salmon spawn in the lower reaches of most rivers and streams in the Central Valley. Adults begin their spawning migration between July and December. Spawning occurs between October and December. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing water.	Yes	No	Pot.	West Fork Stillwater Creek in the project area provides potentially suitable spawning, rearing, and migration habitat for the fall/late fall-run Chinook salmon, and there is a potential that the species would be present.

TABLE 3

Potential for Special-Status Species to Occur on the Project Site

March 2021

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Chinook salmon – Central Valley spring-run ESU	*Oncorhynchus tshawytscha pop. 6*	FT, ST	Central Valley spring-run Chinook salmon enter the Sacramento-San Joaquin Delta in early January, and enter natal streams between mid-March and mid-October. Upon entering fresh water, spring-run are sexually immature and must hold in cold water habitats through summer to mature. Typically, spring-run utilize mid- to high-elevation streams that provide sufficient flow, water temperature, cover, and pool depth to allow over-summering. Spawning occurs between August and mid-October.	No	No	No	Streams in the project area are characterized as intermittent and ephemeral, and do not provide suitable holding and staging habitat for spring-run salmon; thus, the species would not be present in the project area.
Chinook salmon – Sacramento River winter-run ESU	*Oncorhynchus tshawytscha pop. 7*	FE, SE	Sacramento River winter-run Chinook salmon spawn almost exclusively in the Sacramento River from mid-April through August. Spawning generally occurs in swift, relatively shallow riffles or along the edges of fast runs where there is an abundance of loose gravel. The species is dependent on cold freshwater habitat year-round.	No	No	No	Streams in the project area are characterized as intermittent and ephemeral, and do not provide suitable habitat for winter-run salmon; thus, the species would not be present in the project area.
Delta smelt	*Hypomesus transpacificus*	FT	Delta smelt primarily inhabit the brackish waters of Sacramento-San Joaquin River Delta. Most spawning occurs in backwater sloughs and channel edgewaters.	No	No	No	No suitable habitat occurs in the project site for Delta smelt. The Delta smelt would thus not be present.
Steelhead-Central Valley DPS	*Oncorhynchus mykiss irideus*	FT	Central Valley steelhead inhabit cold-water tributaries of the Sacramento and San Joaquin rivers. Adults begin their upstream spawning migration between August and March. Spawning occurs between December and April. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing, shallow water.	Yes	No	Pot.	Steelhead are known to occur in mainstem Stillwater Creek and East Fork Stillwater Creek. Potentially suitable habitat for steelhead occurs in West Fork Stillwater Creek and the unnamed tributary to East Fork Stillwater Creek in the study area. Thus, there is potential for the species to be present.

TABLE 3

Potential for Special-Status Species to Occur on the Project Site

March 2021

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
MAMMALS							
Fisher – West Coast DPS	*Pekania pennanti*	SSSC	Fishers inhabit mixed conifer forests dominated by Douglas-fir, higher elevation fir and pine forests, and mixed evergreen/broadleaf forests. Suitable habitat for fishers consists of large areas of mature, dense forest stands with snags and greater than 50 percent canopy closure. Fishers den in cavities in large trees, snags, logs, rocky areas, or shelters provided by slash or brush piles. Fishers are very sensitive to human activities. Den sites are most often found in areas with no human disturbance.	No	No	No	According to CNDDB records, the nearest reported occurrences of fishers are about two miles north of the project area near Lake Shasta. Although it is possible that fishers could pass through the project area, fishers would not den in the area due to the high level of human activity.

[1] Status Codes

Federal:

FE	Federally Listed – Endangered
FT	Federally Listed – Threatened
FC	Federal Candidate Species
FP	Federal Proposed Species
FD	Federal Delisted

State:

SFP	State Fully Protected
SR	State Rare
SE	State Listed - Endangered
ST	State Listed - Threatened
SC	State Candidate Species
SSSC	State Species of Special Concern

Rare Plant Rank

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2A	Presumed extirpated in California, but more common elsewhere
2B	Rare or Endangered in California, but more common elsewhere

Rare Plant Threat Rank

0.1	Seriously Threatened in California
0.2	Fairly Threatened in California
0.3	Not Very Threatened in California

TABLE 4
Potential for Birds of Conservation Concern to Occur on the Project Site

September 2020

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Bald eagle	*Haliaeetus leucocephalus*	Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles do not usually begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	No	No	No suitable nesting habitat for the bald eagle is present in the project site. No bald eagles or eagle nests were observed during the biological surveys. Thus, the bald eagle is not expected to nest in or adjacent to the project site.
California thrasher	*Toxostoma redivivum*	Habitats for the California thrasher include chaparral, foothills, valley thickets, parks, and gardens. Within their range, they may be found in practically any lowland habitat with dense low brush. Most common in chaparral, California thrashers also occur in streamside thickets and in suburban neighborhoods that have sufficient vegetation. The species habitat extends into edges of desert regions and in chaparral in mountains up to about 6,000 feet. The breeding season is January through July.	Yes	Pot.	Potentially suitable habitat for California thrasher is present in and adjacent to the study corridor. Thus, the California thrasher could be present. To ensure that California thrasher will not be adversely affected by the proposed project, the District shall comply with the nesting bird survey requirement described in the Biological Study Report.
Common yellowthroat	*Geothlypis trichas sinuosa*	Habitats for the common yellowthroat include swamps, marshes, and wet thickets. The species breeds most commonly in marshes and other wet habitat with dense low growth. Nesting habitats consist of briars, moist brushy places, tangles of rank weeds and shrubs near streams, and overgrown fields. The breeding season is May through July.	No	No	No suitable nesting habitat for common yellowthroats is present in the project site. Thus, the common yellowthroat is not expected to nest in the project site.
Costa's hummingbird	*Calypte costae*	Costa's hummingbird is found most commonly in dry and open habitats that have a variety of plant life, such as washes and stream sides in the Sonoran and Mojave Desert, lower parts of dry canyons, and coastal sage scrub. They breed in southern desert scrub habitats. The breeding season is January through June.	No	No	Costa's hummingbird is primarily a desert species and is rarely found in Shasta County. Local habitats may include riparian zones, shrublands, and oak woodlands during non-breeding season, but nesting does not occur in Shasta County.

TABLE 4
Potential for Birds of Conservation Concern to Occur on the Project Site

September 2020

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Golden eagle	*Aquila chrysaetos*	Golden eagles inhabit oak woodlands, coniferous forests, and deserts. Nesting habitat consists of large trees in open areas or cliff-walled canyons. The breeding season is January through August.	No	No	No suitable nesting habitat for golden eagles is present in the project site. Thus, the golden eagle is not expected to nest in the project site.
Lewis's woodpecker	*Melanerpes lewis*	Lewis's woodpecker generally breeds in open ponderosa pine forests and logged or burned pine forests, but may also breed in open riparian woodlands, oak woodlands, and other habitats. The breeding season is April through September.	Yes	Pot.	Potentially suitable woodland habitat for Lewis's woodpecker is present in or adjacent to the project site. Thus, the Lewis's woodpecker could be present. To ensure that Lewis's woodpeckers are not adversely affected by the proposed project, the District shall comply with the nesting bird survey requirement described in the Biological Study Report.
Nuttall's woodpecker	*Picoides nuttallii*	Nuttall's woodpeckers are found primarily in oak woodlands, but are also found in riparian woodlands and wooded suburban areas. The breeding season is April through July.	Yes	Pot.	Suitable woodland habitat for Nuttall's woodpecker is present in or adjacent to the project site. Thus, the Nuttall's woodpecker could be present. To ensure that nesting Nuttall's woodpeckers are not adversely affected by the proposed project, the District shall comply with the nesting bird survey requirement described in the Biological Study Report.
Oak titmouse	*Baeolophus inornatus*	Oak titmouse mostly live in warm, open, dry oak or oak-pine woodlands. Many will use scrub oaks or other brush as long as woodlands are nearby. Nests are built in tree cavities and are made of grass, moss, hair, and feathers. Occasionally, oak titmice nest in stumps, fenceposts, pipes, eaves, or holes in riverbanks. They will also use nest boxes. The breeding season is March through July.	Yes	Pot.	Suitable woodland habitat for the oak titmouse is present in or adjacent to the project site. Thus, the oak titmouse could be present. To ensure that nesting oak titmouse are not adversely affected by the proposed project, the District shall comply with the nesting bird survey requirement described in the Biological Study Report.

TABLE 4
Potential for Birds of Conservation Concern to Occur on the Project Site

September 2020

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Rufous hummingbird	*Selasphorus rufus*	Rufous hummingbirds typically breed in open or shrubby areas in mountain meadows up to 12,600 feet in elevation. They put their nests up to 30 feet high in coniferous or deciduous trees, hidden in drooping branches.	No	No	No suitable nesting habitat for the rufous hummingbird is present in the project site. Although the species may migrate through the project area, rufous hummingbirds would not nest in the project area.
Song sparrow	*Melospiza melodia*	Habitats for the song sparrow include thickets, brush, marshes, roadsides, and gardens. In its wide habitat range, the species is most commonly found in brushy fields, stream sides, shrubby marsh edges, woodland edges, hedgerows, and well-vegetated gardens. The breeding season is February through early September.	Yes	Pot.	Potentially suitable habitat for the song sparrow is present in and adjacent to the project site. Thus, the song sparrow could be present. To ensure that nesting song sparrows are not adversely affected by the proposed project, the District shall comply with the nesting bird survey requirement described in the Biological Study Report.
Spotted towhee	*Pipilo maculatus clementae*	Habitats for the spotted towhee include dry thickets, chaparral, forest edges, and other areas with dense shrub cover. The breeding season is April through July.	Yes	Pot.	Potentially suitable habitat for the spotted towhee is present in or adjacent to the project site. Thus, the spotted towhee could be present. To ensure that spotted towhees will not be adversely affected by the proposed project, the District shall comply with the nesting bird survey requirement described in the Biological Study Report.
Yellow-billed magpie	*Pica nuttalli*	Habitats for the yellow-billed magpie include oak savannahs and other open areas with large trees, such as ranches and farms. The species nests in small colonies, with the nests placed high in large trees. The breeding season is April through July.	Yes	Pot.	Potentially suitable habitat for yellow-billed magpie is present in and adjacent to the project area. Thus, the yellow-billed magpie could be present. To ensure that yellow-billed magpies will not be adversely affected by the proposed project, the District shall comply with the nesting bird survey requirement described in the Biological Study Report.

APPENDIX A

RESUMES

Donald Burk, Environmental Services Manager

Allison Loveless, Wildlife Biologist

Jacob Ewald, Wildlife Biologist

DONALD M. BURK

Environmental Services Manager

Education

M.S. Botany
California State University, Chico

B.A. Chemistry and Biological Sciences
California State University, Chico

Professional Affiliations and Certifications

Society of Wetland Scientists
California Botanical Society
California Native Plant Society
Association of Environmental Professionals

Donald Burk has an in-depth background in a broad spectrum of environmental studies. His academic background includes graduate studies in environmental analysis methodology, biological sciences, and community planning. He has continued his professional development through completion of specialized courses in wetland delineation; wetland impacts and mitigations; vernal pool restoration and creation; noise assessments; Surface Mining and Reclamation Act regulations; erosion control practices; and hazardous materials evaluation and remediation. As environmental services manager with ENPLAN, Mr. Burk is instrumental in the preparation of environmental documents such as site assessment reports, environmental impact reports, biological studies, and noise evaluations. His responsibilities include project team management, key decision-making, coordination with applicable agencies, and final review of environmental documents. Having worked in the environmental consulting field since 1981, Mr. Burk has the skills and experience to manage studies to achieve reliable data and concise, effective documentation in a timely and cost-efficient manner.

While attending CSU, Chico, Mr. Burk was recognized as “Outstanding Organic Chemist of the Year,” received an award of merit from the American Botanical Society, and delivered the valedictory address for the School of Natural Sciences. His Master’s thesis was granted the first annual “Outstanding Thesis Award” by CSU, Chico.

Representative Experience

- *CEQA/NEPA Compliance.* Prepared environmental impact reports, environmental impact statements, and other environmental compliance documentation for a multitude of projects, including 516- and 1,244-acre industrial parks; public facilities projects including several sewage treatment plants, a 90-foot-high earthen dam and 15-acre reservoir, a 6-mile-long, 8-lane roadway, other new road corridors, and water supply projects; shopping centers and highway commercial developments; a 10,000-seat church; a 475-acre recreation ranch; ski areas; a softball park; four new schools; a 1-million cubic yard reservoir dredging project; numerous residential developments and many other projects.

- *Environmental Site Assessments.* Managed preparation of Phase I, II and III site investigations for a number of commercial and industrial facilities. Investigations have addressed wood-products manufacturing facilities, a major clothing manufacturing operation, dry cleaners, a medical clinic, ranches, a regional transmission transformer site, automotive shops and service stations, abandoned sewage treatment ponds, office buildings, shopping centers, and other uses.
- *Biological Studies.* Managed preparation of technical field studies, including wildlife and botanical studies for a 1,016-acre site in Sacramento County; fisheries, aquatic macroinvertebrate, and riparian vegetation studies for a 38-mile reach of the North Fork Feather River; botanical surveys for 175-mile and 265-mile underground telephone cable corridors; botanical surveys for over 2,400 acres on Mount Shasta proposed for ski area development; biological surveys for a 200-acre park site; spotted owl surveys; vernal pool fairy/tadpole shrimp and valley elderberry longhorn beetle assessments; and numerous other projects.
- *Wetland Delineations.* Managed preparation of wetland delineations and/or U.S. Army Corps of Engineers permit applications for a 1,016-acre site east of Sacramento, a 200-acre site in north Redding, a 580-acre site in the City of Weed, a 100-acre site near the Redding Municipal Airport, a transmission corridor project in east Redding, a 78-acre industrial parcel in the City of Benicia, and many other parcels throughout northern California.
- *Noise Studies.* Prepared noise studies for a variety of projects, including numerous traffic corridors; large industrial facilities such as a co-generation plant, food processing plant, and a regional scrap metal recycling facility; recreation facilities such as a new ski area and a community sports complex; many new residential developments; schools; and other facilities. Testified as an expert witness in a court case involving noise generated by electric- and diesel-powered water well pumps.
- *Reclamation Plans/Stream Restoration Projects.* Prepared mine reclamation plans and/or technical studies for projects including an aggregate pit adjacent to Cow Creek in Shasta County, a pumice quarry in Napa County, and underground gold mines in Shasta and Trinity Counties. Managed preparation of a stream restoration project for a reach of the Susan River, which involved hydraulic analysis, preparation of an earth-work plan, supervision of all on-site construction activities, preparation of a revegetation/erosion control plan and supervision of its implementation, and preparation of a monitoring program. Developed a plan, and obtained all agency approvals, for creation of 10 acres of riparian forest habitat along the Sacramento River to mitigate losses on a nearby parcel.

Publications

Burk, Donald et al. (29 contributing authors). Technical Editors Gary Nakamura, UC Cooperative Extension Service and Julie Kierstead Nelson, USDA Forest Service, Shasta-Trinity National Forest. 2001. *Illustrated Field Guide to Selected Rare Plants of Northern California.* University of California, Agriculture and Natural Resources. Publication 3395.

Luper, J. and D. Burk. 2014. Noteworthy collections: *Froelichia gracilis* (Amaranthaceae). Madrono 61(4):413-413.

ALLISON LOVELESS

Environmental Scientist/Wildlife Biologist

Education

M.S. Zoology
Oklahoma State University, Stillwater

B.S. Geography (Environmental Studies)
University of California, Los Angeles

Prior to her career in the environmental services sector, Allison Loveless conducted field surveys for listed plants species with Sierra Pacific Industries, conducted morphological and geospatial research on mammals while at Oklahoma State University, and participated in genetic research on gray wolves during an internship with the Wyoming Fish and Game Wildlife Forensic Laboratory. Additionally, Allison has experience conducting genetic and morphological based research on isolated reptile and amphibian species, and in developing range predictions and assessments using both field and environmental modeling techniques.

Allison now has over three years of experience working in environmental services throughout northern California. Her projects have included biological studies such as endangered species surveys and nesting bird surveys, delivering on-site environmental trainings and monitoring, as well as delivering products by preparation of technical environmental documents including environmental impact reports, biological study reports, wetland delineations, biological assessments, and figure and map creation.

Representative Experience

- *Biological Studies*. Experience conducting habitat assessments, general wildlife surveys with an emphasis on species of concern, and pre-construction nesting bird surveys.
- *Wildlife Surveys.* Performed habitat assessments and general wildlife surveys, with an emphasis on species of concern. Such work has typically included pre-field review of available records including the California Natural Diversity Data Base (CNDDB), the U.S. Fish and Wildlife Service IPAC reports, and other available data sources.
- *Wetland Studies*. Performed wetland delineations and report preparation in compliance with the standards as defined by the U.S. Army Corps of Engineers.
- *GIS Mapping and Data Collection*. Skilled field data collection using GPS and Trimble units, map construction, managing, querying, and analyzing data within ArcGIS.
- *CEQA/NEPA Documentation*. Responsible for drafting environmental compliance documentation including biological study reports, natural environment studies, and biological sections of environmental impact reports and environmental impact statements.

Publications

Loveless, A.M. and K. McBee. 2017. *Nyctimene robinsoni* (Chiroptera: Pteropodidae). Mammalian Species 49 (949): 68-75.

Loveless, A.M., M. Papeş, D.M. Reding, and P.M. Kapfer. 2016. *Combining ecological niche modeling and morphology to assess the range-wide population genetic structure of bobcats (Lynx rufus).* The Biological Journal of the Linnean Society 117: 842-857.

JACOB EWALD

Environmental Scientist/Wildlife Biologist

Education

B.S. Biology (Wildlife, Fish & Conservation Biology)
University of California, Davis

Professional Affiliations and Certifications

GIS Certificate—University of California, San Diego
The Wildlife Society

Jacob Ewald has over four years of experience working as an environmental scientist throughout California. His experience includes endangered species surveys, nesting bird surveys, and stream surveys. In addition to working in the private sector, he has extensive experience conducting research and handling wildlife working as a field biologist for federal and state agencies in California.

Representative Experience

- *Endangered Species Surveys*. Expertise in conducting focused surveys for various threatened and endangered species, including spotted owls, northern goshawks, and giant garter snakes.
- *Nesting Bird Surveys.* Performed pre-construction nesting bird surveys to determine the presence or absence of nesting migratory birds on project sites.
- *General Wildlife Surveys.* Performed habitat assessments and general wildlife surveys, with an emphasis on species of concern. Such work has typically included pre-field review of available records including the California Natural Diversity Data Base, National Marine Fisheries Service records, the U.S. Fish and Wildlife Service IPAC reports, and other available data.
- *Stream Surveys*. Performed surveys of streams and rivers throughout Northern California to assess presence of and habitat suitability for the Sierra Nevada yellow-legged frog. Knowledgeable in the identification of aquatic vertebrates, including threatened and endangered species.
- *GIS Mapping and Data Collection*. Skilled in creating maps as well as importing, georeferencing, managing, and analyzing data within ArcGIS.
- *CEQA/NEPA Documentation*. Responsible for drafting environmental compliance documentation including biological study reports, Natural Environment Studies, and biological evaluations for CEQA Initial Studies.
- *Wood Duck Research*: Participated in a long-term research study analyzing nest box utilization by California wood ducks. Duties included monitoring nest boxes, weighing/marking eggs, and weighing/tagging hatchlings.
- *Thermal Niche Partitioning Analysis*: Analyzed the temperature-related activity levels of multiple Mojave Desert lizard species. Walked transects at multiple sites and times of day, capturing and identifying active lizards as they were found.

APPENDIX B

REPRESENTATIVE PHOTOGRAPHS

West Fork Stillwater Creek at Old Oregon Trail North, view to west. April 15, 2020.

Tree-of-heaven on west bank of West Fork Stillwater Creek at Old Oregon Trail North, view to northwest. March 28, 2021.

Unnamed intermittent stream at Sunrise Drive, view to east. April 6, 2020.

Seasonal wetland along Welbula Drive, view to west. April 19, 2020.

Dense oak woodland habitat along old Oregon Trail North near norther project limits, view to north. April 15, 2020.

Open oak woodland habitat along Old Oregon Trail north of Sunnyview Drive, view to south. April 6, 2020.

Urbanized habitat along Old Oregon Trail at El Teda Drive, view to north. April 6, 2020.

Staging area along Old Oregon Trail North. West Fork Stillwater Creek is on the left side of photo. View to north. March 28, 2021.

APPENDIX C

U.S. FISH AND WILDLIFE SERVICE LISTS

Threatened and Endangered Species
Migratory Birds of Conservation Concern

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: January 29, 2021
Consultation Code: 08ESMF00-2021-SLI-0879
Event Code: 08ESMF00-2021-E-02461
Project Name: Mountain Gate CSD Water System Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) 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 Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, 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 Act, 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 enclosed list.

The purpose of the Act 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 Act 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 (or other undertakings having similar physical impacts) 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. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal 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

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 wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including 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.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. 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.

Attachment(s):

- Official Species List

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:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

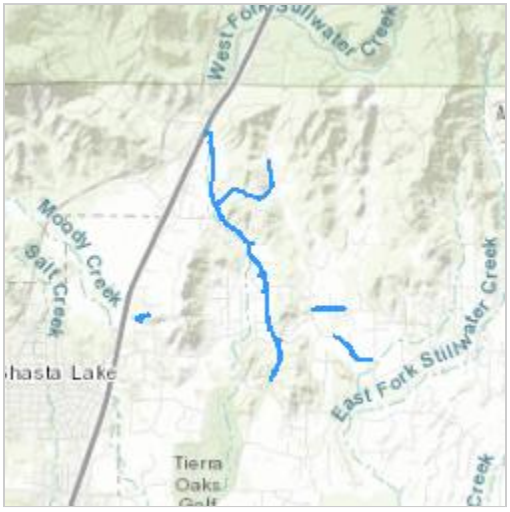
This project's location is within the jurisdiction of offices which do not participate in IPaC's automated species list delivery. Please contact the following offices directly for more information:

Red Bluff Fish And Wildlife Office
10950 Tyler Road
Red Bluff, CA 96080-7762
(530) 527-3043

Project Summary

Consultation Code: 08ESMF00-2021-SLI-0879
Event Code: 08ESMF00-2021-E-02461
Project Name: Mountain Gate CSD Water System Improvements
Project Type: WATER SUPPLY / DELIVERY
Project Description: Replace water mains, PRV Stations, install fire hydrants.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.69165545,-122.30670454003445,14z



Counties: Shasta County, California

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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Northern Spotted Owl *Strix occidentalis caurina*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/1123

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/2891

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/321

Crustaceans

NAME	STATUS
Shasta Crayfish *Pacifastacus fortis*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8284	
Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Threatened
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498	

Critical habitats

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

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

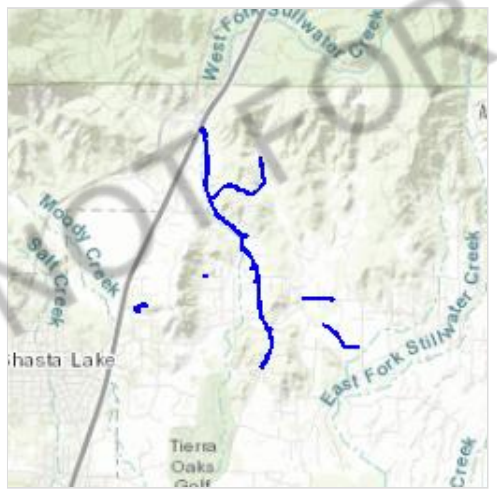
Project information

NAME

Mt. Gate CSD

LOCATION

Shasta County, California



DESCRIPTION

032-65

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

NAME	STATUS
Northern Spotted Owl Strix occidentalis caurina There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/1123	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Shasta Crayfish Pacifastacus fortis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8284	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

You should contact the local field office to determine whether critical habitat for the following species should be considered:

NAME	TYPE
Northern Spotted Owl Strix occidentalis caurina https://ecos.fws.gov/ecp/species/1123#crithab	Final

Migratory birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

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/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, 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 project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). 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, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS

ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention 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

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
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/2084

Costa's Hummingbird Calypte costae — Breeds Jan 15 to Jun 10
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/9470

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention 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/1680

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
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/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
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/4243

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of

presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

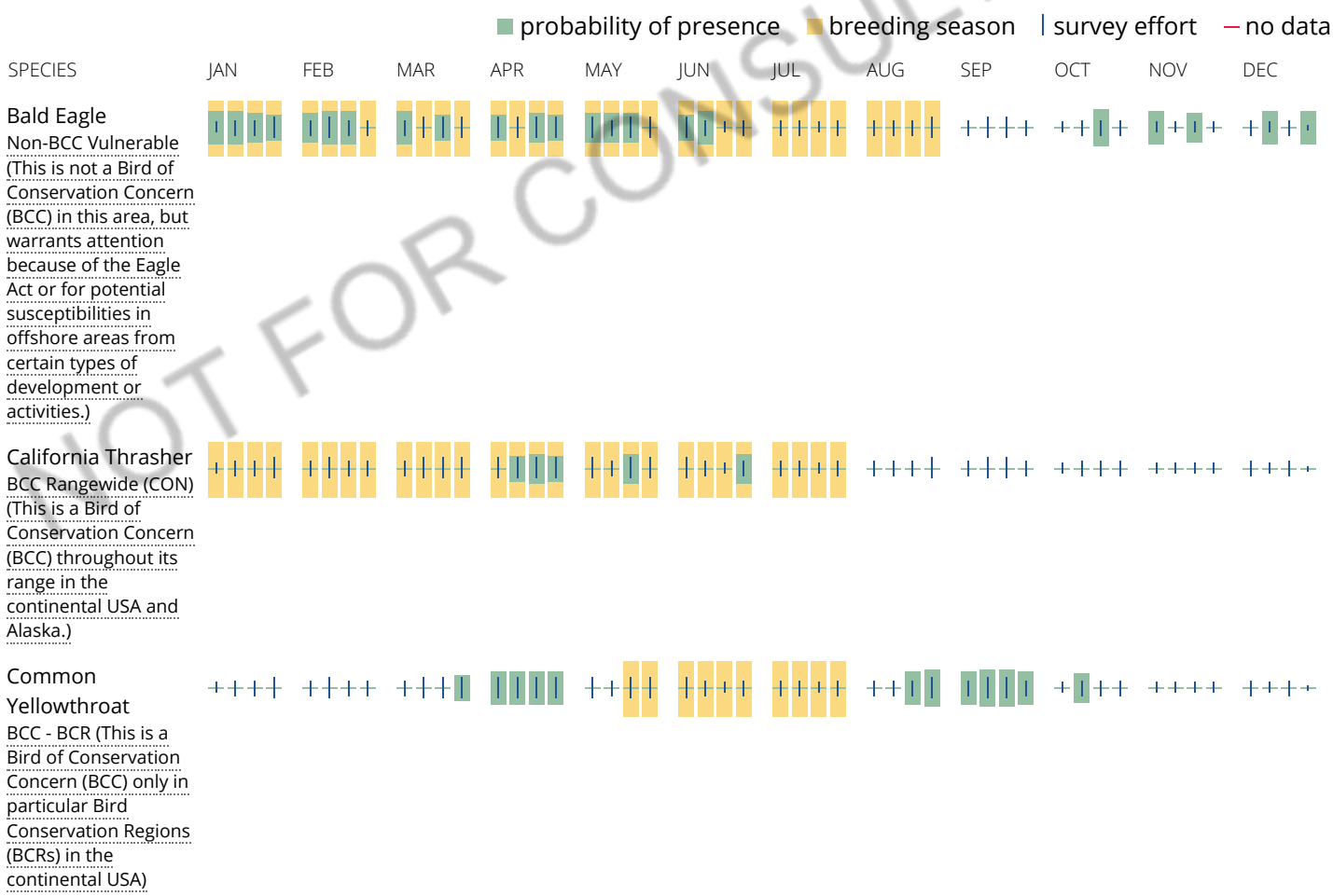
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

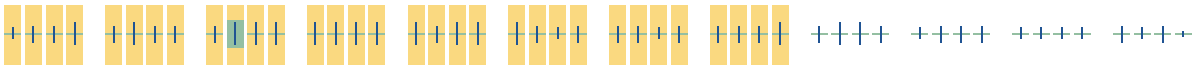
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

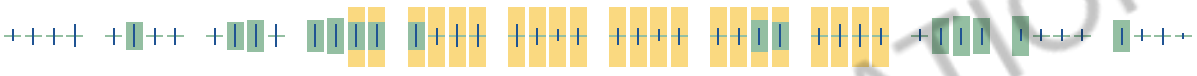


Costa's Hummingbird
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

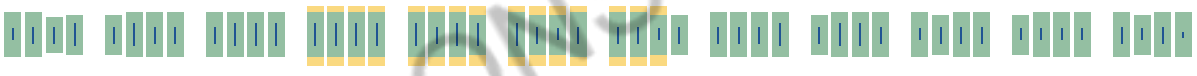
Golden Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



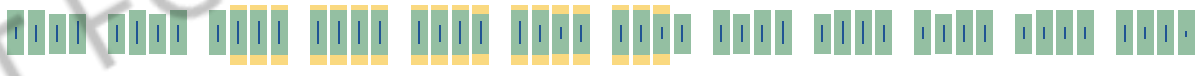
Lewis's Woodpecker
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

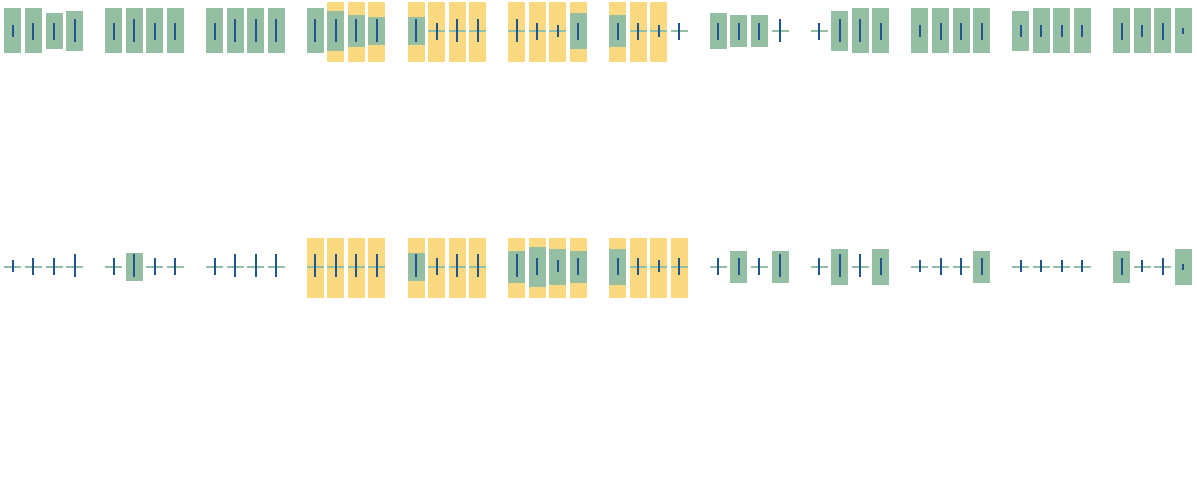


Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential

impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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 AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

- R4SBC
- R4SBA

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

National Marine Fisheries Service

Mountain Gate CSD Water System Improvement Project

March 2021

Quad Name **Project City**
Quad Number **40122-F3**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat - **X**
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -

MMPA Pinnipeds -

APPENDIX D

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mountain Gate CSD Water System Improvements
April 6, April 15, and July 22, 2020

Adoxaceae	**Muskroot Family**
Sambucus nigra subsp. *caerulea*	Blue elderberry
Agavaceae	**Century-plant Family**
Chlorogalum pomeridianum var. *pomeridianum*	Wavy-leaved soap plant
Alliaceae	**Onion Family**
Allium bolanderi var. *bolanderi*	Bolander's onion
Allium triquertum	Three-corner leek
Amaranthaceae	**Amaranth Family**
Amaranthus albus	Tumbleweed
Amaranthus retroflexus	Red-rooted amaranthus
Anacardiaceae	**Sumac Family**
Toxicodendron diversilobum	Poison-oak
Apiaceae	**Carrot Family**
Daucus carota	Queen Anne's lace
Daucus pusillus	Rattlesnake weed
Eryngium articulatum	Jointed coyote thistle
Lomatium caruifolium var. *denticulatum*	Foothill lomatium
Lomatium utriculatum	Bladder lomatium
Perideridia sp.	Yampah
Sanicula bipinnatifida	Purple sanicle
Sanicula crassicaulis	Pacific sanicle
Scandix pecten-veneris	Venus' needle
Tauschia hartwegii	Hartweg's tauschia
Torilis arvensis	Field hedge-parsley
Apocynaceae	**Dogbane Family**
Nerium oleander	Oleander
Vinca major	Greater periwinkle
Aristolochiaceae	**Birthwort Family**
Aristolochia californica	Pipevine
Asparagaceae	**Asparagus Family**
Agave sp.	Century plant
Asteraceae	**Sunflower Family**
Agoseris grandiflora	Large-flowered agoseris
Artemisia douglasiana	Mugwort
Carduus pycnocephalus	Italian thistle
Centaurea solstitialis	Yellow star thistle
Centromadia fitchii	Fitch's spikeweed
Cichorium intybus	Chicory
Cirsium occidentale var. *venustum*	Venus thistle
Erigeron canadensis	Canadian horseweed
Erigeron inornatus var. *inornatus*	California rayless fleabane

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mountain Gate CSD Water System Improvements

Asteraceae (continued)	
Eriophyllum lanatum	Woolly sunflower
Grindelia camporum	Valley gumplant
Helianthella californica var. *nevadensis*	Nevada helianthella
Hypochaeris glabra	Smooth cat's ear
Hypochaeris radicata	Rough cat's ear
Lactuca serriola	Prickly lettuce
Leontodon saxatilis	Hawkbit
Logfia gallica	Narrow-leaved cottonrose
Madia citriodora	Lemon-scented tarweed
Matricaria discoidea	Pineapple weed
Micropus californicus var. *californicus*	Slender cottonweed
Pseudognaphalium sp.	Cudweed
Senecio vulgaris	Old-man-in-the-Spring
Solidago velutina	California goldenrod
Sonchus asper subsp. *asper*	Prickly sow thistle
Taraxacum officinale	Dandelion
Tragopogon dubius	Goat's beard
Wyethia glabra	Mule ears
Xanthium strumarium	Cocklebur
Boraginaceae	**Borage Family**
Amsinckia menziesii	Menzie's fiddleneck
Amsinckia intermedia	Common fiddleneck
Cynoglossum grande	Western hound's tongue
Eriodictyon californicum	Yerba santa
Heliotropium europaeum	European pulsey
Lithospermum arvense	Gromwell
Nemophila maculata	Fivespot
Pectocarya pusilla	Little pectocarya
Plagiobothrys canescens	Valley popcorn-flower
Plagiobothrys fulvus var. *campestris*	Fulvous popcorn-flower
Plagiobothrys nothofulvus	Rusty popcorn-flower
Plagiobothrys shastensis	Shasta popcorn-flower
Plagiobothrys sp. (*stipitatus* var. *micranthus* - immature nutlets)	Small popcorn-flower
Brassicaceae	**Mustard Family**
Barbarea verna	Early wintercress
Cardamine oligosperma	Few-seeded bittercress
Hirschfeldia incana	Shortpod mustard
Lepidium nitidum	Shining peppergrass
Lepidium strictum	Peppergrass
Lunaria annua	Moonwort
Nasturtium officinale	Water cress
Raphanus raphanistrum	Jointed charlock
Sisymbrium officinale	Oriental hedge mustard
Thysanocarpus curvipes	Lace pod
Cactaceae	**Cactus Family**
Opuntia sp.	Prickly-pear

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mountain Gate CSD Water System Improvements

Caprifoliaceae	**Honeysuckle Family**
Lonicera interrupta	Chaparral honeysuckle
Caryophyllaceae	**Pink Family**
Cerastium glomeratum	Mouse-eared chickweed
Herniaria hirsuta var. *hirsuta*	Gray herniaria
Petrorhagia dubia	Grass pink
Saponaria officinalis	Bouncing bet
Scleranthus annuus subsp. *annuus*	German knotgrass
Stellaria media	Common chickweed
Chenopodiaceae	**Goosefoot Family**
Dysphania pumilio	Tasmanian goosefoot
Salsola sp.	Russian-thistle
Cleomaceae	**Spiderwort Family**
Polanisia dodecandra subsp. *trachysperma*	Clammyweed
Convolvulaceae	**Morning Glory Family**
Calystegia occidentalis	Western morning-glory
Convolvulus arvensis	Bindweed
Cucurbitaceae	**Gourd Family**
Marah watsonii	Taw man-root
Cupressaceae	**Cypress Family**
Calocedrus decurrens	Incense-cedar
Cyperaceae	**Sedge Family**
Carex densa	Dense sedge
Carex divulsa ssp. *divulsa*	Gray sedge
Carex nebrascensis	Nebraska sedge
Carex nudata	Torrent sedge
Cyperus eragrostis	Nutsedge
Eleocharis macrostachya	Creeping spikerush
Ericaceae	**Heath Family**
Arctostaphylos viscida	White-leaf manzanita
Euphorbiaceae	**Spurge Family**
Croton setigerus	Dove weed
Euphorbia maculata	Spotted spurge

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mountain Gate CSD Water System Improvements

Fabaceae	**Legume Family**
Albizia julibrissin	Silk tree
Acmispon americanus	Spanish lotus
Acmispon brachycarpus	Hairy lotus
Acmispon parviflorus	Miniature lotus
Cercis occidentalis	Western redbud
Genista monspessulana	French broom
Lathyrus latifolius	Perennial sweet pea
Lathyrus sulphureus var. *sulphureus*	Snub pea
Lupinus bicolor	Bicolored lupine
Lupinus latifolius	Broad-leaved lupine
Medicago arabica	Spotted bur-clover
Medicago polymorpha	California bur-clover
Melilotus albus	White sweetclover
Robinia pseudoacacia	Black locust
Spartium junceum	Spanish broom
Trifolium sp.	Clover
Trifolium dubium	Little hop clover
Trifolium glomeratum	Sessile-headed clover
Trifolium hirtum	Rose clover
Trifolium subterraneum	Subterranean clover
Vicia sativa	Garden vetch
Vicia villosa	Winter vetch
Fagaceae	**Oak Family**
Quercus douglasii	Blue oak
Quercus kelloggii	California black oak
Quercus lobata	Valley oak
Quercus x morehus	Oracle oak
Quercus wislizeni	Interior live oak
Geraniaceae	**Geranium Family**
Erodium botrys	Long-beaked filaree
Erodium cicutarium	Red-stemmed filaree
Erodium moschatum	White-stemmed filaree
Geranium carolinianum	Carolina geranium
Geranium dissectum	Cut-leaf geranium
Geranium molle	Dove's-foot geranium
Geranium purpureum	Little robin
Hamamelidaceae	**Witch Hazel Family**
Liquidambar styraciflua	Sweet gum
Hypericaceae	**St. John's-wort Family**
Hypericum calycinum	Aaron's beard
Hypericum perforatum	Klamath weed
Iridaceae	**Iris Family**
Iris sp.	Iris (horticultural)
Juglandaceae	**Walnut Family**
Juglans hindsii	Northern California black walnut

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mountain Gate CSD Water System Improvements

Juncaceae	**Rush Family**
Juncus patens	Spreading rush
Luzula comosa var. *laxa*	Pacific wood rush
Lamiaceae	**Mint Family**
Lamium amplexicaule	Giraffe heads
Lamium purpureum	Red henbit
Lavandula stoechas	Lavander
Marrubium vulgare	Horehound
Mentha pulegium	Pennyroyal
Mentha spicata	Spearmint
Mentha suaveolens	Apple mint
Monardella sheltonii	Shelton's monardella
Trichostema lanceolatum	Vinegar weed
Lauraceae	**Laurel Family**
Umbellularia californica	California bay
Liliaceae	**Lily Family**
Calochortus tolmiei	Pussy-ears
Fritillaria sp. (probably affinis)	Fritillary
Muscari botryoides	Grape-hyacinth
Narcissus sp.	Narcissus
Molluginaceae	**Carpet-weed Family**
Mollugo verticillata	Green carpetweed
Montiaceae	**Miner's Lettuce Family**
Claytonia perfoliata	Common miner's lettuce
Moraceae	**Mulberry Family**
Ficus carica	Common fig
Morus alba	White mulberry
Myrsinaceae	**Myrsine Family**
Anagallis arvensis	Scarlet pimpernel
Myrtaceae	**Myrtle Family**
Eucalyptus sp.	Gum tree
Callistemon sp.	Bottlebrush
Oleaceae	**Olive Family**
Fraxinus latifolia	Oregon ash
Ligustrum sp.	Privet
Olea europaea	Olive
Onagraceae	**Evening-Primrose Family**
Epilobium brachycarpum	Tall annual willowherb
Epilobium densiflorum	Dense flowered spike-primrose

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mountain Gate CSD Water System Improvements

Orobanchaceae	**Broom-rape Family**
Castilleja attenuata	Valley tassels
Cordylanthus pilosus subsp. *hansenii*	Hansen's bird's-beak
Pedicularis densiflora	Indian warrior
Oxalidaceae	**Oxalis Family**
Oxalis sp.	Wood-sorrel
Papaveraceae	**Poppy Family**
Eschscholzia caespitosa	Foothill poppy
Eschscholzia californica	California poppy
Phrymaceae	**Lopseed Family**
Erythranthe guttata	Common monkey-flower
Erythranthe microphylla	Small-leaved monkey-flower
Phytolaccaceae	**Pokeweed Family**
Phytolacca americana	Pokeweed
Pinaceae	**Pine Family**
Pinus ponderosa	Ponderosa pine
Pinus sabiniana	Grey pine
Plantaginaceae	**Plantain Family**
Keckiella lemmonii	Lemmon's keckiella
Kickxia elatine	Sharp-leaved fluellin
Plantago erecta	Hooker's plantain
Plantago lanceolata	English plantain
Veronica anagallis-aquatica	Water speedwell
Veronica persica	Persian speedwell
Poaceae	**Grass Family**
Aira caryophyllea	Silver hairgrass
Arundo donax	Giant reed
Avena barbata	Slender wild oats
Avena fatua	Wild oats
Brachypodium distachyon	False brome
Briza maxima	Big quaking grass
Briza minor	Little quaking grass
Bromus carinatus var. *carinatus*	California brome
Bromus diandrus	Ripgut grass
Bromus hordeaceus	Soft chess
Bromus laevipes	Woodland brome
Bromus madritensis subsp. *rubens*	Red brome
Bromus sterilis	Poverty brome
Bromus tectorum	Downy brome
Cortaderia sp.	Pampas grass
Cynodon dactylon	Bermuda grass
Cynosurus echinatus	Hedgehog dogtail
Dactylis glomerata	Orchard grass
Elymus glaucus subsp. *glaucus*	Blue wild rye

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mountain Gate CSD Water System Improvements

Poaceae (continued)	
Elymus hispidus	Intermediate wheatgrass
Festuca bromoides	Six-weeks fescue
Festuca myuros	Foxtail fescue
Festuca perennis	Annual ryegrass
Gastridium phleoides	Nit grass
Hordeum murinum subsp. *murinum*	Wall barley
Melica californica	California melic
Paspalum dilatatum	Dallis grass
Poa annua	Annual bluegrass
Poa bulbosa	Bulbous bluegrass
Poa secunda	One-sided bluegrass
Polypogon monspeliensis	Annual beardgrass
Sorghum halepense	Johnson grass
Stipa miliacea var. *miliacea*	Smilo grass
Polemoniaceae	**Phlox Family**
Leptosiphon bicolor	Bicolored linanthus
Polygonaceae	**Buckwheat Family**
Eriogonum nudum	Naked buckwheat
Polygonum aviculare	Common knotweed
Rumex sp.	Willow dock
Rumex crispus	Curly dock
Rumex pulcher	Fiddle dock
Primulaceae	**Primrose Family**
Primula hendersonii	Henderson's shooting star
Pteridaceae	**Brake Family**
Pentagramma triangularis subsp. *triangularis*	Goldback fern
Ranunculaceae	**Buttercup Family**
Clematis lasiantha	Pipestem
Ranunculus muricatus	Prickle-fruited buttercup
Ranunculus occidentalis	Western buttercup
Rhamnaceae	**Buckthorn Family**
Ceanothus cuneatus var. *cuneatus*	Buckbrush
Frangula californica subsp. *tomentella*	Hoary coffeeberry
Rosaceae	**Rose Family**
Heteromeles arbutifolia	Toyon
Prunus sp.	Prunus
Prunus cerasifera	Cherry plum
Prunus dulcis	Almond
Prunus virginiana var. *demissa*	Western choke-cherry
Pyracantha sp.	Pyracantha
Pyrus communis	Pear
Rosa sp.	Wild rose
Rubus armeniacus	Himalayan blackberry

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mountain Gate CSD Water System Improvements

Rubiaceae	**Madder Family**
Cephalanthus occidentalis	California buttonwillow
Crucianella angustifolia	Cross-wort
Galium aparine	Cleavers
Galium murale	Tiny bedstraw
Galium parisiense	Wall bedstraw
Galium porrigens var. *tenue*	Climbing bedstraw
Sherardia arvensis	Field madder
Salicaceae	**Willow Family**
Populus alba	White poplar
Salix exigua var. *exigua*	Sandbar willow
Salix gooddingii	Goodding's black willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Sapindaceae	**Soapberry Family**
Aesculus californica	California buckeye
Scrophulariaceae	**Snapdragon Family**
Verbascum blattaria	Moth mullein
Verbascum thapsus	Woolly mullein
Simaroubaceae	**Quassia Family**
Ailanthus altissima	Tree of heaven
Themidaceae	**Brodiaea Family**
Dichelostemma capitatum subsp. *capitatum*	Blue dicks
Dichelostemma multiflorum	Round-toothed ookow
Viscaceae	**Mistletoe Family**
Phoradendron leucarpum subsp. *tomentosum*	Oak mistletoe
Vitaceae	**Grape Family**
Vitis californica	Wild grape
Zygophyllaceae	**Caltrop Family**
Tribulus terrestris	Puncture vine

APPENDIX E

RIPARIAN VEGETATION PLANTING PLAN

RIPARIAN VEGETATION PLANTING PLAN

West Fork Stillwater Creek at Old Oregon Trail North

Introduction

The Mountain Gate Community Services District (MGCSD) is proposing improvements to the community's water distribution system. The improvements include the replacement of approximately 23,850 feet of water main with larger diameter mains, the construction of approximately 3,000 feet of new mains, completion of improvements at the South Water Tank site, installation of ±32 new or replacement fire hydrants, replacement of up to five pressure-reducing supervisory control valves (PRVs), and installation of a new emergency intertie with the Bella Vista Water District, as well as other minor improvements. Depending on funding constraints and final design work, some of the project elements noted above may not be constructed.

Project implementation would involve trenching through West Fork Stillwater Creek at Old Oregon Trail North. Pipeline installation would require removal of up to about 400 square feet of riparian vegetation along the banks of West Fork Stillwater Creek. The west bank of the stream is moderately steep and supports a thin band of willows and other riparian shrubs. Riprap has been placed on the west bank to help protect the bridge. Above this bank, is a disturbed flat with one valley oak, a ponderosa pine sapling, Himalayan blackberry, and annual herbs. The east bank is somewhat more gently sloped and does not have riprap. It supports a few willows on the stream's edge, backed by a dense stand of tree-of-heaven, an introduced invasive species.

The principal objective of this planting plan is to offset the minor impact of project construction on essential fish habitat by helping to stabilize the stream banks following completion of construction and by providing overhanging vegetation on the stream banks to serve as a source of shade and nutrients/food items for anadromous fish.

Responsible Party

Mountain Gate Community Services District is responsible for implementation of this Riparian Vegetation Planting Plan. At the District's discretion, some or all activities may be delegated to contractors.

Schedule

Construction activities at West Fork Stillwater Creek are anticipated to begin in summer 2023 and be completed prior to the onset of the fall rains. Mountain Gate Community Services District shall plant the disturbed riparian areas during the fall/winter season immediately following installation of the water main through West Fork Stillwater Creek.

Planting Areas

The temporarily disturbed riparian areas are located on the banks of West Fork Stillwater Creek, upstream (north) of the bridge. It is anticipated that approximately 400 square feet of riparian corridor will be replanted following completion of construction. The owners of the planting area are the State of California (Assessor's Parcel 307-150-006) and Shasta County (Old Oregon Trail North road right-of-way).

Site Preparation

Upon completion of construction activities, temporarily disturbed riparian areas will be contoured and stabilized to match adjacent conditions along West Fork Stillwater Creek. Appropriate erosion control measures will be implemented during this activity to stabilize the stream banks and minimize the discharge of sediments into the stream channel.

Revegetation Materials

Materials used for revegetation will consist of cuttings of native willows. Willow cuttings will be obtained from locations in and/or adjacent to the project area.

Planting Techniques

Following site preparation, temporarily disturbed riparian areas will be planted with locally obtained native willow cuttings. Willow cuttings will be planted between November 1 and January 31, after fall rains have thoroughly moistened the soil. Willow cuttings will be planted in the planting areas approximately two-feet on center. The specific planting techniques are as follows:

1) Cuttings will be collected from vigorously growing willows along West Fork Stillwater Creek, in the vicinity of the project area. Cuttings will be obtained when the plants are dormant (late fall or winter).
2) The cuttings will be approximately two feet in length. The base cut will be made at an approximately 45-degree angle to the stem. The terminal end cut will be horizontal to the stem (this will help ensure correct orientation of the cutting during planting).

3) Cuttings will be a minimum of 3/8 inches in diameter (smaller diameter cuttings may not have sufficient stored energy to consistently sprout, especially in dry conditions). The apical bud and top several inches of the stem will be removed. All side branches will also be removed.

4) Cuttings may be planted on the same day they are collected or, alternatively, may be fully submersed in water for up to ten days prior to planting.

5) Prior to planting, each cutting may be treated with a rooting hormone and fungicide, such as hormodin powder, by dipping the basal portion of the cutting. Each cutting should then dry to minimize the loss of rooting hormone through handling and planting.

6) Cuttings will be pushed into the moist soil so that at least half their length is buried; three to four buds should remain aboveground.

7) The cuttings will be planted approximately two-feet on center, in staggered rows, extending from the ordinary high water level of the stream to the upper extent of the riparian zone (as evidenced by the presence of riparian vegetation outside the work area).

Monitoring

No long-term monitoring is proposed because: 1) the impact of the project on essential fish habitat is very minor, 2) the planting area is extremely small, 3) much of the vegetation that would be removed is the non-native tree-of-heaven (*Ailanthus altissima*), 4) the environmental conditions of the project site would not be altered, therefore, riparian cover would ultimately establish on the site with or without human intervention, and 5) the District does not own the land and has no control over future vegetation management activities that may be undertaken by the landowners to maintain the road, bridge, and adjoining lands.