MADERA STATION RELOCATION PROJECT

APPENDIX A
BIOLOGICAL RESOURCES
TECHNICAL MEMORANDUM

SAN JOAQUIN JOINT POWERS AUTHORITY

October 2020

Appendix A
Biological Resources Technical Memorandum

Madera Station Relocation Project

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October 2020

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1. INTRODUCTION

The purpose of this memorandum is to document research conducted in relation to the Madera Station Relocation Project (Project) site, to determine if there are potential special-status species and other sensitive and protected habitats or plant communities on or adjacent to the site that could be affected by activities related to project construction. This technical information is provided for review under the California Environmental Quality Act (CEQA), the California Endangered Species Act (CESA), the federal Endangered Species Act (ESA), and other pertinent regulations. The findings and conclusions summarized in this memorandum are based on desktop research of publicly-available databases and information, and past surveys and environmental studies performed in the area.

2. PROJECT DESCRIPTION

The Project consists of various project elements that can be separated into two phases, based on their purpose and timing of construction and implementation. The first phase, or the "Phase 1 – San Joaquins Relocated Station" (Phase 1), consists of elements related to the Relocated Madera San Joaquins Station (Relocated Station) from Madera Acres to the location described in the vicinity of Avenue 12

The existing Madera San Joaquins Station would no longer be used for San Joaquins operations following commencement of San Joaquins service at the Relocated Station. The second phase of the Project, or the "Phase 2 – HSR Interim Operating Segment Station" (Phase 2), consists of high-speed rail improvements at the Relocated Station to allow for future HSR service along California's future Merced to Bakersfield High-Speed Rail Interim Operating Segment, to access the Relocated Station (Figures 2-4, and 2-5). This HSR services is anticipated to be operated by the SJJPA.

For both Phase 1 and 2, the design, construction, and operation of the Project's rail components would comply with applicable standards from the Federal Railroad Administration (FRA) and/or California Public Utilities Commission (CPUC). Similarly, design, construction, and operation of site access improvements, including new roadways or modifications to existing roadways, would adhere to applicable standards such as the California Manual on Uniform Traffic Control Devices (MUTCD) and local design guidelines and specifications. Design approval for specific project components would be sought from the appropriate agencies as part of detailed design and subsequent stages of the Project.

2.1 Project Environmental Footprint

The Project Environmental Footprint (Project Footprint) is shown in Figure 2-1. In the north-south direction, the Project Footprint stretches approximately 3,600 feet north of Cottonwood Creek and approximately 150 feet south of Avenue 11 to accommodate trackwork associated with the Project. The Project Footprint also widens between Avenue 13 and Avenue 11 to accommodate the Project's station facilities and access road.

Figure 2-1. Proposed Project Environmental Footprint

2.2 Phase 1 – San Joaquins Relocated Station

2.2.1 Platform

As described below, the Relocated Station for Phase 1would consist of a single side-loaded platform approximately 600 feet in length. The platform may include a canopy or canopies to offer protection from the elements for waiting passengers. There would also be fare machines, information panels, security video cameras, and lighting in the platform area. In general, the platform area would look similar to the existing Madera San Joaquins Station. Figures 2-2 and 2-3 show the proposed general layout of the Relocated Station, including the platform that the San Joaquins would utilize.

2.2.2 Trackwork

In order to access the Relocated Station platform, a new station siding track extending from the existing BNSF mainline single-track would be constructed. The entire length of the new station siding track, from the turnout locations at the north and south would be approximately 2,330 feet. The turnouts would be design for 50 mph. The new track would have a ballast base similar to the existing ballasted tracks on the BNSF Corridor.

2.2.3 Bus Depot

A bus depot would be constructed southeast of the proposed platform. The bus depot would be accessible via the access road. As part of the Phase 1, the entire footprint of the bus depot would be established, with space reserved for up to eight bus bays. However, only four of the eight bus bays would be constructed.

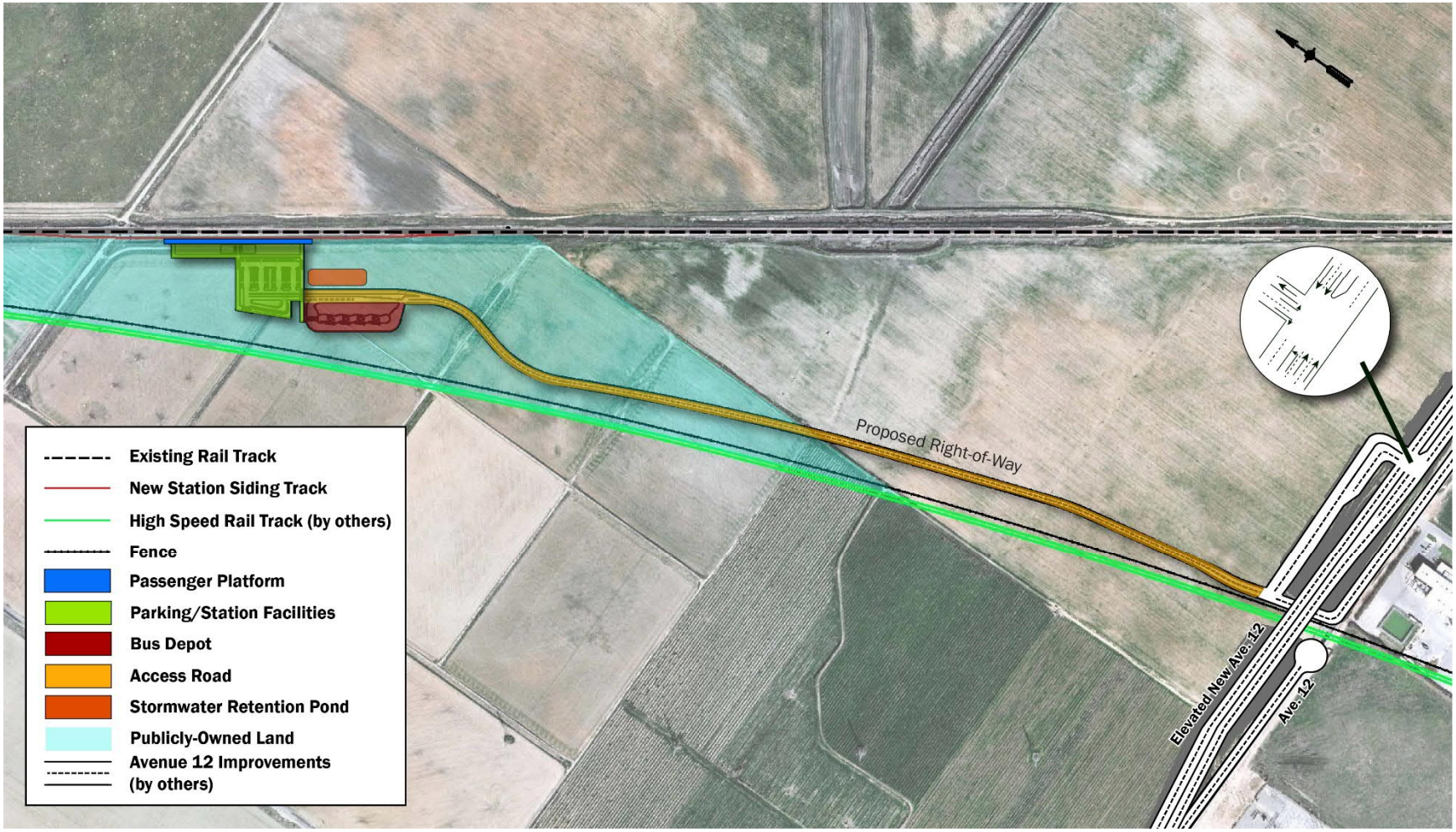
2.2.4 Parking

A surface parking lot would be constructed adjacent to and west of the Relocated Station platform, with 98 parking spaces that would be equipped with lighting and security video cameras. No parking structures are proposed. The parking lot would be accessed through via an access road connecting from Avenue 12. Parking would include disability parking. Additionally, a pick-up/drop off facility with a turnaround loop would be located within the westernmost area of the parking lot.

2.2.5 Access Road

A new two-lane access road would be constructed to provide access to the Relocated Station facilities from Avenue 12. The access road would primarily run adjacent to the CAHSR Project right-of-way and would connect to the new elevated section of Avenue 12 via a ramp structure on the north side of new grade-separated section of Avenue 12. Both the new elevated section of Avenue 12 and the ramp are being constructed as part of the CAHSR Project (Figure 2-2). No sidewalks or bike lanes would be included in the access road as part of Phase 1.

Figure 2-2 Proposed Design for Phase 1 – San Joaquins Relocated Station (Overview)



2.2.6 Roadway Network

The access road would also connect to a section of road located in an underpass through the grade-separated Avenue 12 being constructed as part of the CAHSR Project. This underpass would provide a connection to the at-grade Avenue 12 frontage road on the south side of the new elevated section of Avenue 12. The Avenue 12 frontage road is not a Project element and is section of the same roadway that is the current Avenue 12 and would provide access to properties located immediately south of Avenue 12 and in between the CAHSR Project corridor to the west and the existing BNSF corridor to the east.

2.2.7 Buildings and Structures

A small building or buildings would be constructed to house restrooms and cleaning supplies/equipment for station maintenance, which would be located immediately west the station platform. The building(s) would be one-story (approximately 12 feet) tall. In addition, lighting posts with light-emitting diode (LED) light fixtures would be installed. Various types of signage would be also installed.

A stormwater drainage system would be constructed to provide drainage for stormwater from the access road, parking lot, and other station facilities. The drainage system would lead to a stormwater retention pond located immediately south of Phase 1 parking structure. The stormwater retention pond would be designed to accommodate additional stormwater anticipated from the expanded station facilities and access road associated with Phase 2.

An onsite Wastewater Treatment System (OWTS) would be constructed to treat wastewater from the planned station restroom. It is assumed that the Project would not be hooked up to the sewer system.

2.2.8 Trains

Trainsets utilized by the San Joaquins and serving the new Relocated Station during Phase 1 would be FRA-complaint diesel-based rolling stock, the same or similar to trainset currently operated for the San Joaquins today. Most of the trainsets utilized for the San Joaquins Service will be hauled by Tier 4 locomotives at the time of service commencement (estimated for 2024).

2.3 Phase 2 – HSR Interim Operating Segment Station

2.3.1 Platform

As part of Phase 2, a new single side-loaded platform would be constructed parallel to the CAHSR Project trackwork now under construction to the west and immediately adjacent to a new station siding track (see below for more details). The platform would be approximately 1,000 feet in length and may include canopies to protect passengers from the elements. The height of the platform would be designed to accommodate trainsets to be selected for the HSR system. The platform would also be located approximately 365 feet west of the northerly edge of the platform built as part of Phase 1 (Figures 2-4, 2-5, and 2-6).

Figure 2-3. Proposed Design for the Phase 1 – San Joaquins Relocated Station (Detailed View)

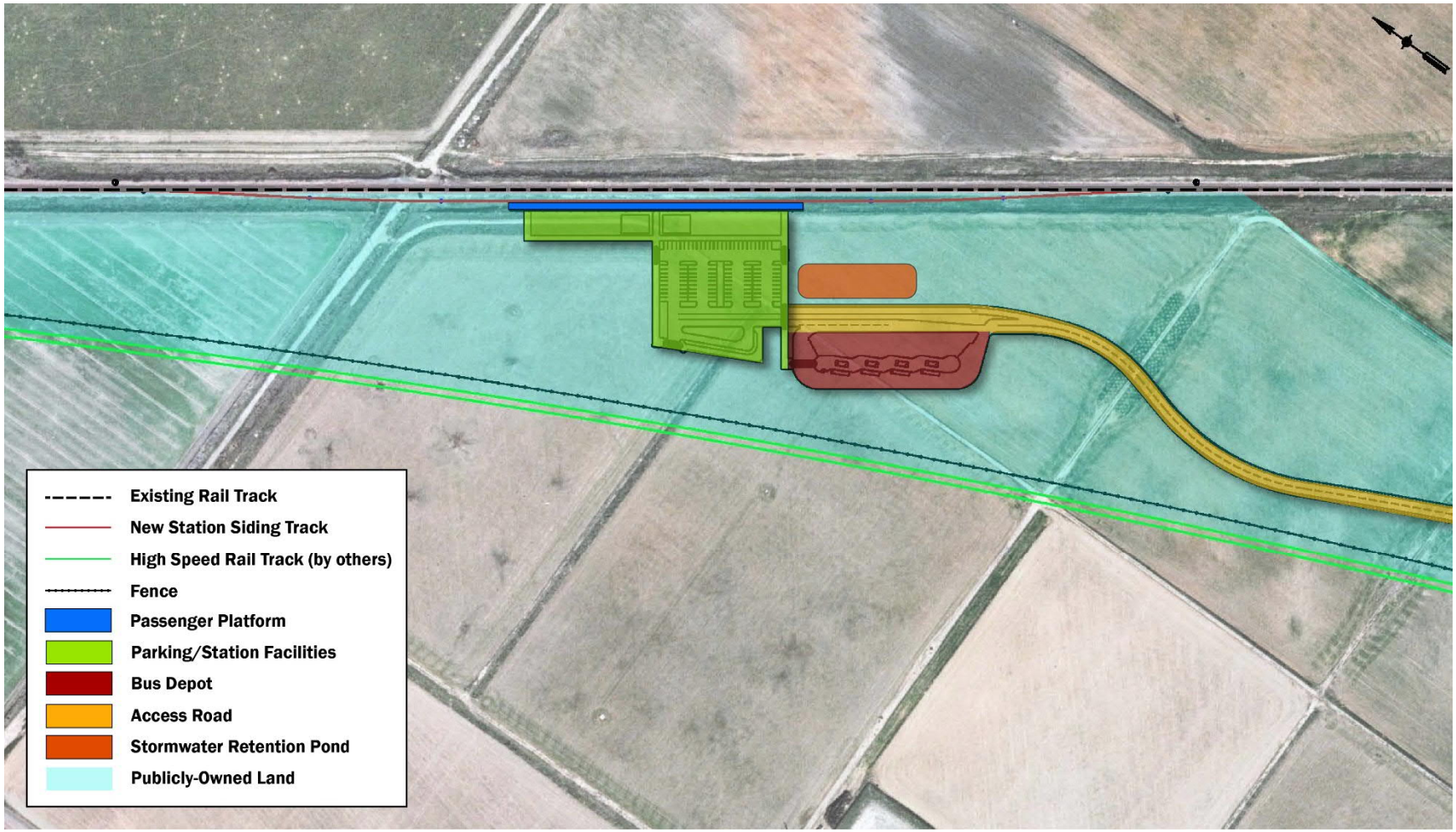


Figure 2-4. Proposed Design for the Project Phase 2 – HSR Interim Operating Segment Station (Overview)

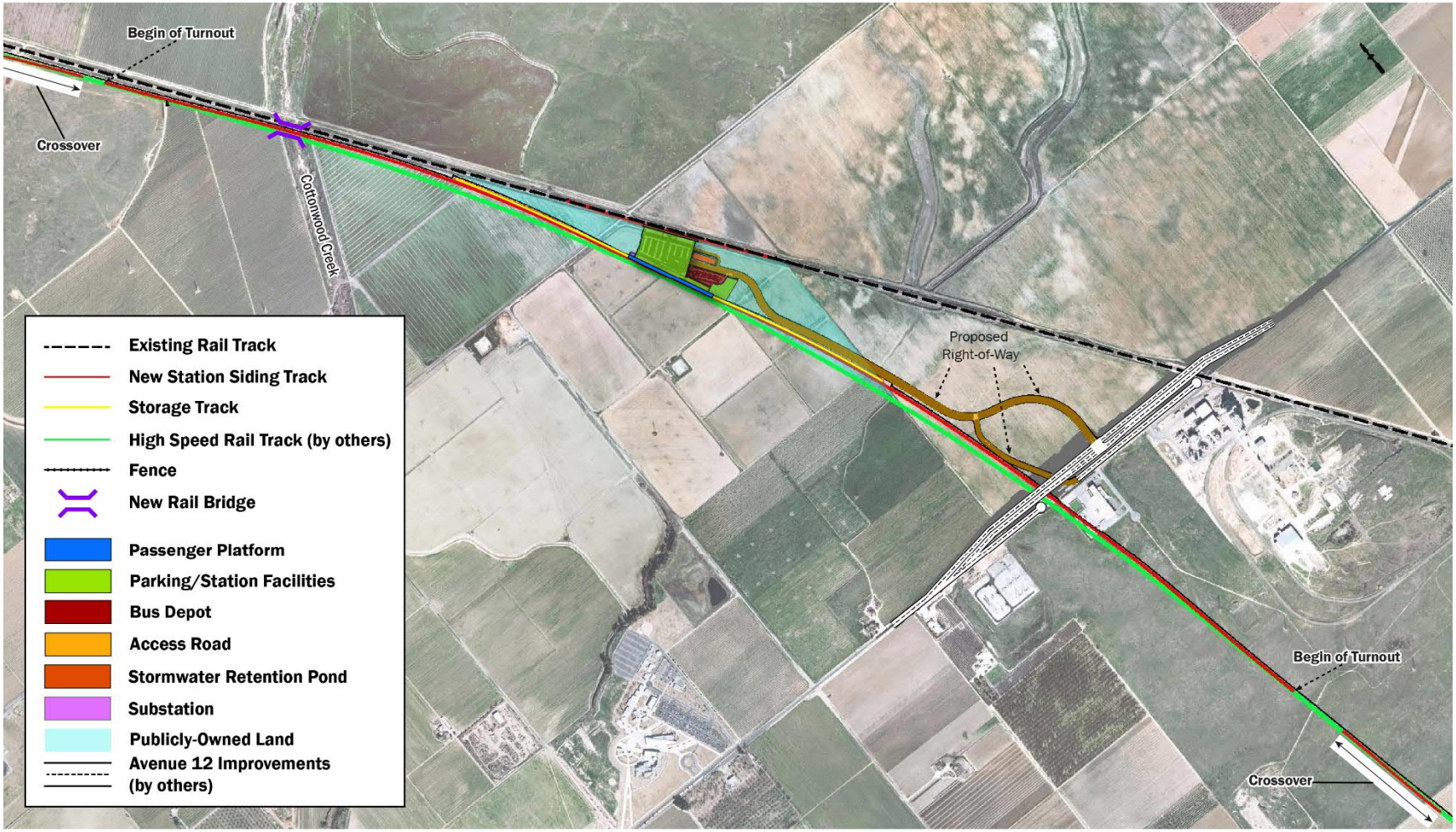


Figure 2-5. Proposed Design for the Project Phase 2 – HSR Interim Operating Segment Station (Detailed View)

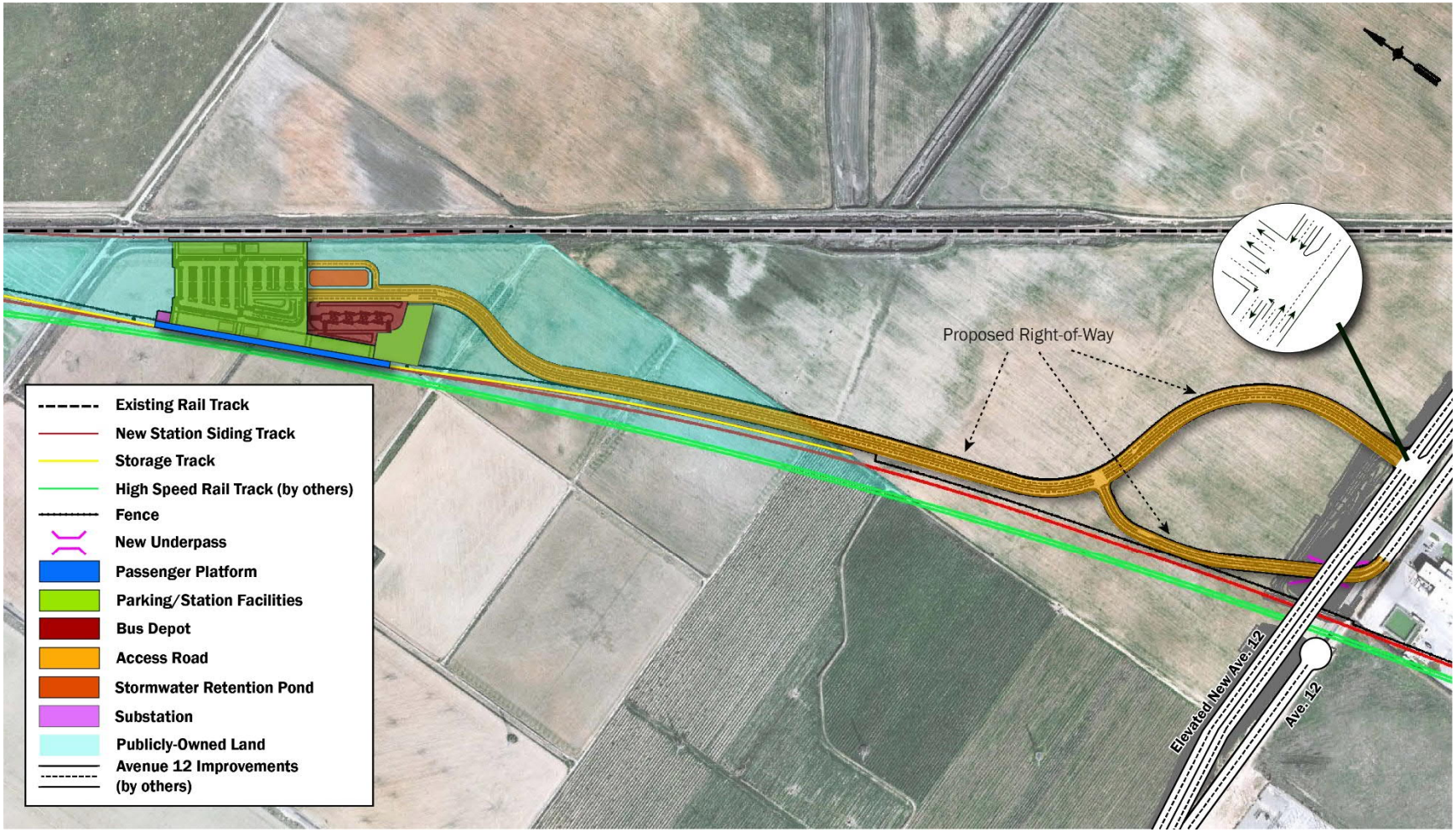
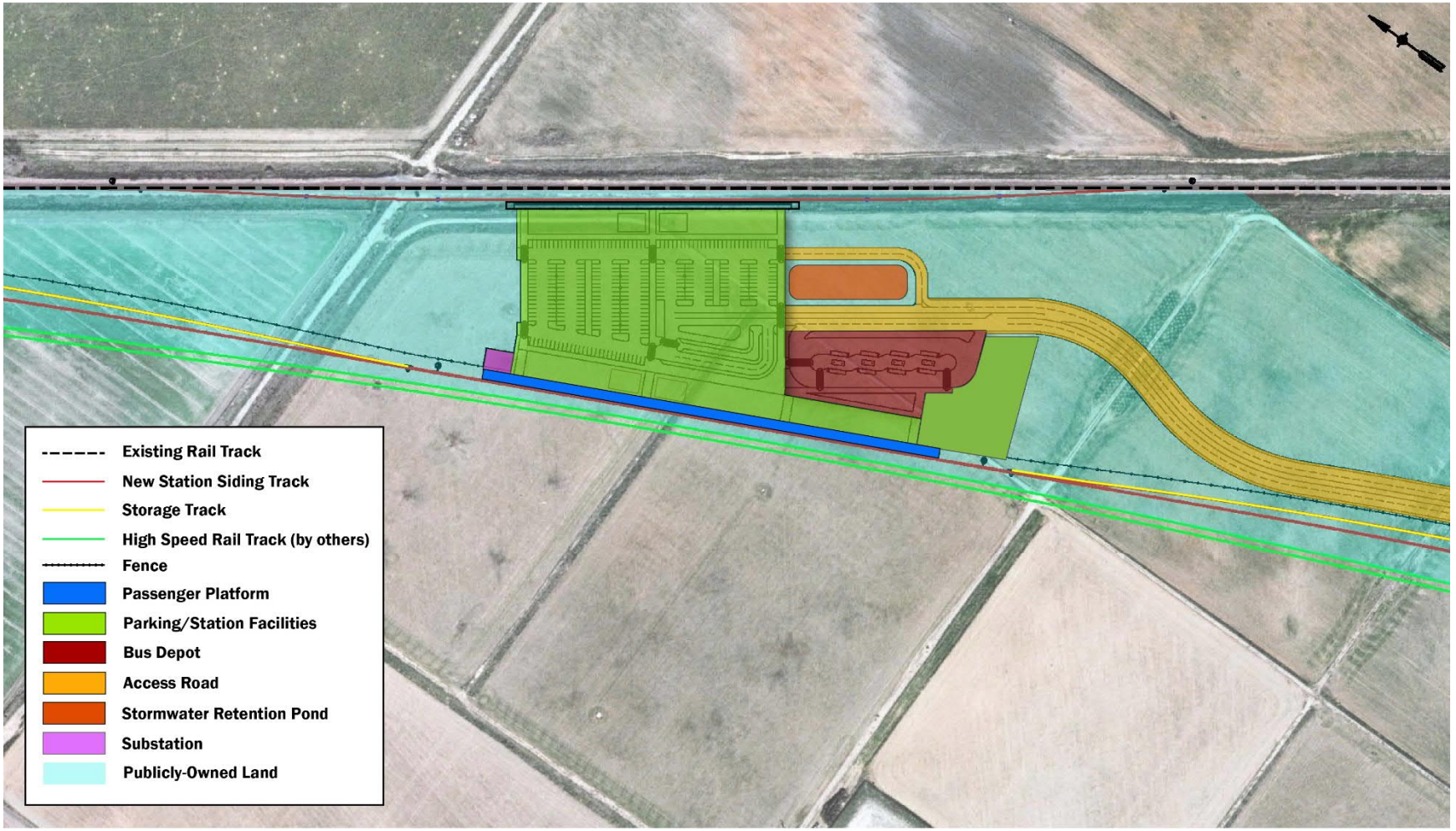


Figure 2-6. Proposed Design for the Project Phase 2 – HSR Interim Operating Segment Station (Station Close-In View)



2.3.2 Trackwork and Overhead Contact System

In order to provide access to the HSR platform, a new station siding track would be constructed to the east of the two-track mainline being constructed for the CAHSR Project. The entire length of the new station siding track, from the turnout locations at the north and south would be approximately 14,600 feet in length. The turnouts would be design for 110 mph. In addition, new crossover tracks would be constructed within the CAHSR Project corridor to the north and south of the new station siding track to allow southbound HSR trains to access the HSR platform at the Relocated Station. When including the north and south crossover tracks within the CAHSR Project right-of-way, this would extend the length of the trackwork associated with the Project to a total length of 17,300 feet. The northern crossover track would extend approximately 3,600 feet north of Cottonwood Creek. The southern crossover track would extend approximately 150 feet south of Avenue 11.

The station siding track would include a new rail bridge over Cottonwood Creek. The proposed bridge would be a single track, 5 span continuous cast-in-place, reinforced concrete slab type structure, matching the span arrangement and hydraulic conveyance capacity of the existing double-track bridge constructed as part of the CAHSR Project. The bridge would be 24 feet in width, 250 feet in length, and would be supported on 2 – 3' diameter cast-in-drilled-hole (CIDH) piles at each abutment and bent; each pile would be approximately 40 to 50 feet deep. The CIDH supported abutments would extend approximately 8 to 10 feet below the existing ground surface.

Two storage tracks for HSR trains would be constructed as part of Phase 2 of the Project. One storage track would extend from the station siding track to the north approximately 1,900 feet. A second storage track would extend south from station siding track approximately 1,900 feet (Figures 2-4, 2-5, and 2-6).

In association with the Phase 2 trackwork, an overhead contact system (OCS) would be constructed along entire length of the station siding track and storage tracks to provide electrical power to electrified trainsets. The OCS would consist of poles at intervals matching the OCS poles being constructed as part of the CAHSR Project. These OCS poles are expected to be approximately 30 feet tall and would have foundations approximately 6 to10 feet deep.

To provide power to the OCS system, a small Transmission Power Substation (TPSS) may be needed, though there is a possibility electrical power could be drawn from the OCS planned to be constructed in association with the adjacent mainline CHSRA Project tracks. If a TPSS is required, it would be located in an area in the vicinity of the north end of the HSR platform.

2.3.3 Bus Depot

A bus depot would be constructed just south of the access road as it approaches the Station parking lot. As part of Phase 1, the west side of the bus depot footprint would be built, including four bus bays. In Phase 2, four additional bus bays would be constructed such that a total of eight bus bays are operational.

2.3.4 Parking

The parking lot constructed as part of Phase 1 would be expanded by 179 additional spaces, for a total of 277 parking spaces in Phase 2. The additional parking would expand the size of surface lot; no parking structures are proposed. The parking area would be accessed through one road connecting from Avenue 12. Parking would include disability parking. The pick-up/drop-off facility already provided in Phase 1 would be expanded with an additional 530 linear feet of curbside access divided between two additional lanes.

2.3.5 Access Road

In order to accommodate the trackwork required to reach the HSR platform, a portion of the access road constructed during Phase 1 would be reconfigured and relocated. The reconfigured portion of the access road would shift to the east and rise to meet the elevated portion of the Avenue 12 grade separation where a new signalized intersection would be created (Figure 2-5). The reconfigured portion of the access road would be a four-lane road. Furthermore, the remaining portion of the Phase 1 access road that extends north to the station, would be widened from the two-lanes to a four-lane road. A sidewalk and bike lanes would be also added to the widened access road during Phase 2.

In addition, a 2-lane auxiliary segment of access road would be built around the southern and eastern sides of the proposed stormwater retaining pond to provide an additional access point into the expanded parking lot.

2.3.6 Road Network

The new station siding track associated with Phase 2 of the Project would be constructed in the same space occupied by the automobile underpass currently under construction as part of the CAHSR Project. This would result in removal of the roadway in that space and severing the original automobile access to the Avenue 12 frontage road on the south of elevated Avenue 12. To address this, a new underpass would be constructed for automobiles slightly to the east (Figure 2-5). This new underpass would connect to the at-grade frontage road along the south side of Avenue 12. Construction of the new underpass in Phase 2 of the Project would require penetrating the retained fill of the Avenue 12 grade separation structure built as part of the CAHSR Project and constructing necessary support structures for the elevated Avenue 12.

2.3.7 Buildings and Structures

A building or buildings would be constructed in close proximity to the east of the HSR platform to provide space for station staffing support facilities, restrooms and cleaning supplies/equipment for station maintenance. The building(s) would be one-story (approximately 12 feet) tall. In addition, lighting posts and signage would be installed. Additional stormwater drainage facilities would be needed for the expanded station facilities and expanded roadway, but no additional work would be needed on the stormwater drainage basin constructed in Phase 1. Additional wastewater facilities would be need for additional bathroom planned near the CAHSR platform.

2.3.8 Trains

CAHSR trainsets would likely consist of lightweight electric multiple units (EMU) trainsets. However, no final decision has been made on rolling stock to-date. This Project has no influence on the selection of CAHSR rolling stock.

2.4 Construction Period

The construction of the proposed Project would be done in phases. Phase 1 would include all Project elements required to allow for the operations of the San Joaquins service at the Relocated Station. Construction of Phase 1 of the Project is anticipated to last 12 months. Construction of Phase 1 is anticipated to commence in 2023 and be completed in 2024. The construction schedule for Phase 1 is being coordinated with the construction of the CAHSR Project. CHSRA has indicated they will need to utilize the site of the Relocated Station (currently owned by the CHSRA) as a staging area for the CAHSR project. Given this, the schedule for Phase 1 would be delayed from the original anticipated commencement date by approximately 1.5 years.

Phase 2 would include all Project elements required to allow for the operations of HSR trains at the Relocated Station. Construction of Phase 2 of the Project is anticipated to last approximately 2 years. Assuming funding is secured, construction for Phase 2 is anticipated to commence in 2026 and be completed in 2028.

Access to construction sites would occur via a temporary access road within the Project Footprint connecting with the proposed access road segments during Phase 1 and Phase 2. There could be limited, temporary road closures, and road construction that could potentially cause increased traffic congestion in areas where emergency vehicles operate. These improvements could potentially disrupt traffic during construction activities and interfere with emergency response times.

Contractors would use staging areas within the Project Footprint and standard industry equipment such as excavators, pavers, and dump and concrete trucks to support the construction of the Project. For the construction of the new bridge over Cottonwood Creek, pile-driving equipment would be utilized.

Best Management Practices (BMPs) that would be implemented as part of the Project include:

- Use of fabric-covered screening fences to minimize public views of the construction activities, equipment, and stockpiles.
- Positioning of light direction and shielding, which would minimize lighting spillover.
- Measures found in Caltrans' Construction Site Field Manual and Troubleshooting Guide (Caltrans 2003a), and the Construction Site BMP Manual (Caltrans 2003b) to reduce impacts to soil erosion
- Standard construction practices such as Best Available Technology Economically Feasible (BATs), Best Conventional Pollutant Control Technology (BCTs) would help reduce potential impacts related to storm water drainage systems

2.5 Preliminary Project Capital Cost Estimates

Preliminary cost estimates of all Project elements – including trackwork, platforms, station facilities, power systems, drainage, bus depot, access road, and parking lots – were conducted for both Phases 1 and 2. Table 2-1 below provides the estimated cost for each phase, as well as a total for both phases. For more information on the preliminary capital cost estimates, refer to Appendix F (Preliminary Project Capital Cost Estimates).

Table 2-1. Preliminary Project Capital Cost Estimates

Phase 1	Phase 2	Total (Both Phases)
$24.9 Million	**$105.0 Million**	**$129.9 Million**

Source: AECOM 2020.

For more information on the preliminary capital cost estimates, refer to Appendix F (Preliminary Project Capital Cost Estimates).

2.6 Operations

Phase 1 of the Project presumes up to eight (8) San Joaquins roundtrip a day when the Relocated Station opens for service (anticipated in 2024). Phase 2 presumes up to eighteen (18) HSR service roundtrips a day (anticipated to commence in 2029). Once HSR service commences to the Relocated Station during Phase 2, San Joaquins trains would no longer serve the Relocated Station and would instead terminate at a new downtown multi-modal hub station in Merced, where they would connect to HSR trains, leaving only 18 HSR daily roundtrips serving Relocated Station.

Once the San Joaquins terminate in Merced, it is possible that there could be local/regional passenger rail service in the future that utilizes the slots that the San Joaquins would no longer utilize. However, this would have to be separate project and is not in the scope of this Project.

Ridership analysis was conducted for Phase 1 and Phase 2 for the years 2025 and 2029 respectively, which reflect estimated ridership for the operational plans at the Relocated Station described above, as well as for a No-Build condition, where the Existing Station is not relocated. Ridership was assessed by estimating passenger "ons and offs" (or "boardings and alightings"). In this approach, each person is counted twice (once for getting on at a station and once for getting off at a station). Therefore, the number of actual passengers would be 50% of the numbers shown above. Estimating ons/offs is useful to assess usage of the station facilities, etc.

The estimated ridership is summarized in Table 2.6-1 below.

Table 2.6-1. Estimated Project Ridership

No Build[1] 2025 (San Joaquins)	Phase 1[2] 2025 (San Joaquins)	Project Phase 2[3] 2029 (High-Speed Rail Service)
40,200[1] (passenger ons/offs)	**103,100**[2] (passenger ons/offs)	**210,600**[3] (passenger ons/offs)
Notes: [1]Assumes eight (8) San Joauquins roundtrips serving the Existing Station. [2]Assumes eight (8) San Joauquins roundtrips serving the Relocated Station. [3]Assumes eighteen (18) high-speed rail roundtrips serving the Relocated Station.		

For more information on the ridership estimates, refer to Appendix G (Ridership, Vehicle Miles Traveled, and Parking Estimates).

2.7 Required Permits

The Project is subject to CEQA, and the SJJPA is the lead agency for the Project. As such, SJJPA must oversee environmental review of the Project under CEQA, prior to approving the Project. SJJPA recognizes the need for a close relationship with Madera County (County) and the nearby City of Madera (City) and wishes to pursue the planning and environmental review of the Project in such a way that SJJPA, the County and the City can agree that the Project would be of overall community benefit and that all reasonable efforts to avoid significant environmental effects have been made. Towards this end, SJJPA would comply with regulations regarding site planning and construction, including such ordinances as the County noise regulations and provisions of the County's stormwater sewer system discharge permit.

The Project requires the following approvals and permits from agencies including:

- County of Madera Public Works Department of Public Work's Grading and Erosion Control Permit.
- County of Madera Public Works Department of Public Work's Encroachment Permit Application
- Central Valley Regional Water Quality Control Board's NPDES Construction General Permit Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ).
- Central Valley Regional Water Quality Control Board, Clean Water Act (CWA) Section 401 Permit/Waste Discharge Requirements.
- A consultation with U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) would be conducted if special status plant specifies cannot be protected and an Incidental Take Permit (ITP) would be attained.
- CDFW Section 1600 Streambed Alteration Agreement.
- Central Valley Flood Protection Board (CVFPB) Encroachment Permit.
- Army Corps of Engineering Clean Water Act (CWA) Section 404 Permit.
- The California High-Speed Rail Authority (CHSRA) would need to approve connection into their track infrastructure.

2.8 Public Outreach

The SJJPA has engaged local stakeholders and agencies, as well as the general public in the Project's development since before the environmental process began. SJJPA has conducted ongoing coordination

with the Madera County, Madera CTC, and the City of Madera since late 2016. The Madera CTC and Madera County sent letters of support for the Madera Station Relocation's TIRCP application. In 2018, SJJPA prepared and made available to the public a Madera Relocation Station Planning document that discussed the history and best sites for relocating the existing Madera Station. This document was updated in Spring of 2020 and made public.

Early on in the environmental process, SJJPA decided to include a robust public outreach component, even though CEQA does not require a substantial outreach effort for an IS/MND (relative to an Environmental Impact Report). An extensive stakeholder and public outreach process was undertaken to educate the public about the Project. Numerous materials were developed that include various information about the Project, including a Project factsheet. Additionally, a dedicated Project webpage was created (housed within the SJJPA website) that not only provided information about the Project but contained a tool to allow members of the public to sign-up to the Project stakeholder list.

In addition to providing general information about the Project, in-person public open houses were conceived at the onset of the Project's environmental process to further inform the public. However, due to COVID-19 and State and local restrictions on gatherings, and for the safety of the public, it was decided that webinars would be held instead of physical public open houses. Three webinars (two in English and one in Spanish) were held on May 14, 2020.

Several methods were utilized to promote the public webinars. E-mail notifications (e-blasts) were conducted to the extensive list of stakeholders assembled for the Project. Additionally, flyers, social media posts, and newspaper advertisements (both print and digital) were disseminated to inform the public about public webinars. Additionally, agencies and key stakeholders within Madera County were leveraged to further the reach of e-blasts, flyers and social media posts.

The format of all three webinars consisted of a 20-minute PowerPoint presentation on the Project history, the Project description, an overview of the environmental process, and a review of the proposed schedule for the Project. The presentation portion of the webinars were followed by a question and answer session. Approximately 20 people joined for all three meetings.

- The email notifications (e-blasts), information sheets (English and Spanish), PowerPoint presentations (English and Spanish), and Project website screenshot are presented in Appendix H (Public Outreach). A second outreach effort will be made once the Draft IS/MND is published.

3. METHODS

A qualified AECOM biologist searched the several public databases for records of special-status plants and wildlife documented on or around the Project Footprint. The California Native Plant Society (CNPS 2020a) and the California Natural Diversity Database (CNDDB) (CDFW 2020) were searched for species and sensitive natural communities documented within the Gregg and eight surrounding United States Geological Survey (USGS) 7.5-minute quadrangles; the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) project planning tool (USFWS 2020) was used to generate an IPaC resource list, which includes federally-listed species with potential to occur in the region along with their

known or expected range; and the eBird database, which is managed by the Cornell Lab of Ornithology (eBird 2020).

In addition to these resources, this analysis included a review of the Biology Resources and Wetlands section in the California High-Speed Train: Merced to Fresno Section Draft Project Environmental Impact Report/Environmental Impact Statement (CAHSR EIR/EIS) (CAHSRA 2011), which included reconnaissance-level field surveys that determined presence or absence of biological resources and documented the location of biological resources through habitat characterization and mapping.

The searches and analysis resulted in a list of special-status plant and wildlife species that have been previously documented and/or could potentially to occur on or in the vicinity of the proposed Project Environmental Footprint (Project Footprint). The special-status species list is summarized in Tables 1 and Table 2 (Attachment B) and also includes suitable habitat typically associated with each species; critical seasonal periods associated with the species' natural history; potential for the species to occur on or near the Project Footprint; and general comments. A map showing the documented CNDDB occurrences within a 3-mile radius of the Project Footprint is presented in Attachment A, Figure-3.

4. ENVIRONMENTAL SETTING

Madera County is located within the California Floristic Province, which is characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. The elevation of the Project Footprint ranges from approximately 280 to 290 feet above mean sea level. Soils consist of 12 types of sandy loam, two of which are over hardpan; one sandy soil over hardpan, and one clay soil; nearly all the soils are from toe slope and/or alluvium origins; and they vary from 0 to 8 percent slopes.

Nearly all the land cover within the Project Footprint is comprised of agriculture that includes orchards, grapes, and grain fields. Some of the grain fields are periodically uncultivated and plowed and/or in a fallow state, as are orchard and grape fields that remove old stock and replant the fields. The only uncultivated areas of land are narrow bands of annual grassland and ruderal vegetation that parallel the west side of the existing San Joaquins BNSF Corridor track, between the track and the dirt roads that border the agricultural fields. These areas are highly disturbed from being immediately adjacent to the agriculture operations, but six small linear-to-oblong depressions, mapped as seasonal wetlands, are located parallel to the toe of the railroad embankment and have potential to provide potentially suitable habitat for special-status vernal pool species. One other wetland feature at the northern end of the Project Footprint is located slightly farther west from the railroad tracks in the edge of a grain field and is mapped as a vernal pool due to recent CNDDB records of a special-status vernal pool plant species, hairy Orcutt grass (Orcuttia Pilosa) in the pool, and because this field and others to the north and east contain numerous vernal pools and documented special-status species. There is also an ephemeral or intermittent stream (Cottonwood Creek) located approximately 0.5 mile north of Avenue 13. The stream crosses under the San Joaquins BNSF Corridor track and a newly constructed crossing/span that will support the CAHSR track, both are elevated over the creek. Within and immediately upstream and downstream the Project Footprint, Cottonwood Creek is dry most of the year and only flows periodically during wet season. The CAHSR EIR/EIS refers to Cottonwood Creek as an intermittent drainage, but the creek is mapped as an ephemeral drainage by USGS (USGS 2018). Due to the dry conditions in this reach of the channel, there is a lack of well-established riparian vegetation. There are, however, occasional Goodding's willow (Salix gooddingii) and Fremont

cottonwood (Populus fremontii) trees north and south of the crossings that provide nesting habitat for birds. The creek is not expected to provide suitable habitat for special-status fish or plant species, but multiple Swainson's hawk (Buteo swainsoni) nests are documented in the CNDDB in 2016 and 2017 downstream of the track crossings. Surrounding land use is primarily the same kind of agriculture described within the Project Footprint, but there are large uncultivated areas of vernal pool habitat on the east side of the San Joaquins BNSF Corridor track north of Avenue 13, another smaller triangular-shaped area with vernal pools immediately south of Avenue 13, and the field partially within and mostly adjacent and north of the Project Footprint is cultivated with grain crops but also contains vernal pool habitat. A map of the of the land cover and habitat types is presented in Attachment A, Figure 4.

5. SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources addressed in this section include those that are afforded consideration or protection under the California Environmental Quality Act (CEQA), California Fish and Game Code, California Endangered Species Act (CESA), Federal Endangered Species Act (ESA), Clean Water Act (CWA), and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

6. SPECIAL-STATUS SPECIES

Special-status species include plants and animals in the following categories:

- Species officially listed by the state or Federal government as endangered, threatened, or rare;
- Candidates for state or Federal listing as endangered or threatened;
- Taxa (i.e., taxonomic categories or groups) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines;
- Species identified by the California Department of Fish and Wildlife (CDFW) as species of special concern;
- Species listed as Fully Protected under the California Fish and Game Code;
- Species afforded protection under local or regional planning documents; and
- Taxa considered by CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes six rarity and endangerment ranks for categorizing plant species of concern, which are summarized as follows:
    - CRPR 1A – Plants presumed to be extinct in California;
    - CRPR 1B – Plants that are rare, threatened, or endangered in California and elsewhere;
    - CRPR 2A – Plants presumed to be extinct in California, but more common elsewhere;
    - CRPR 2B – Plants that are rare, threatened, or endangered in California, but more common elsewhere;
    - CRPR 3 – Plants about which more information is needed (a review list); and
    - CRPR 4 – Plants of limited distribution (a watch list).

7. SENSITIVE NATURAL COMMUNITIES AND HABITATS

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration through CEQA Guidelines, Section 1602 of the California Fish and Game Code, Section 404 of

the CWA, and the State's Porter-Cologne Act, as noted in the Regulatory Setting section below. Sensitive natural communities may be of special concern to these agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species. Sensitive habitats often provide other important ecological functions, such as enhancing flood and erosion control and maintaining water quality.

CDFW maintains a list of California Sensitive Natural Communities that are native to California (CDFW 2019). Within the current list, CDFW identifies special-status (or sensitive) natural communities, which they define as communities that are of limited distribution statewide or within a county or region and often vulnerable to environmental effects of projects. These communities may or may not contain special-status species or their habitat.

8. REGULATORY SETTING

Many federal, state and local laws and regulations protect biological resources in California. The following are applicable to the Project:

- Federal Clean Water Act (Section 404 and 401) – protection of wetlands and other waters of the United States
- State Porter Cologne Act – protects waters of the State
- Federal and State Endangered Species Acts (ESA and CESA) – protection of species federally or state listed or proposed for listing
- Federal Migratory Bird Treaty Act (MBTA) – protects birds and their nests
- Fish and Game Code Section 3503 – protects active nest or eggs of any bird
- Fish and Game Code Section 1600 – requires permit to alter bed and bank of streams and lakes
- Madera County General Plan – contains policies to protect species and wetlands

9. THRESHOLDS FOR BIOLOGICAL RESOURCES

To determine whether a proposed Project would have a significant impact on biological resources, Appendix G to the CEQA Guidelines requires consideration of whether a project would result in:

- A substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the USFWS;
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service;
- A substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- A conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and

- A conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

10. POTENTIAL IMPACTS

10.1 Potential Impacts to Special-Status Species

The following special-status species were determined to have potential to occur within the Project Footprint and be subjected to disturbance by construction and/or operational impacts.

10.1.1 Special-Status Plants: Hairy Orcutt grass (Orcuttia Pilosa), San Joaquin Valley Orcutt grass (Orcuttia inaequalis), succulent owl's-clover (Castilleja campestris var. succulenta), and spiny-sepaled button-celery (Eryngium spinosepalum)

There are six small linear-to-oblong depressions mapped as seasonal wetlands (Attachment A, Figure 4) that are located parallel to the toe of the existing railroad embankment, which have characteristics of potential habitat for special-status plants. One of these features (SW-4) is located below the footprint of the new Madera Station and therefore would be filled and degraded from the construction activities. Although Hairy Orcutt grass, San Joaquin Valley Orcutt grass, succulent owl's-clover, and spiny-sepaled button-celery are known to inhabit vernal pools that contain specific hydrological and soil characteristics and conditions, those specific hydrological and soil characteristics are not expected to occur in these any of these six seasonal wetlands. Therefore, the construction of the Madera Station would not adversely affect special-status plant species.

The vernal pool feature mapped at the northern end of the Project Footprint could potentially support hairy Orcutt grass, San Joaquin Valley Orcutt grass, succulent owl's-clover, and spiny-sepaled button-celery. While this vernal pool feature is within the Project Footprint, it is approximately 10 feet east of the CAHSR track construction footprint. Construction activities in this vernal pool would result in direct impacts on these special-status plant species. In addition, alteration of soil conditions in or near the vernal pool by clearing and grading may result in the loss of native seed banks, or changes to topography and drainage patterns that could impair the ability of the habitat to support these vernal pool species in the future.

Potential indirect impacts on these special-status plants from nearby construction activities include deposition of dust from construction activities that may reduce photosynthetic capacity or inhibit reproduction by coating leaves and reproductive structures. Indirect impacts could also result from the creation of conditions favorable for the invasion of weedy exotic species that outcompete native species and prevent the reestablishment of desirable vegetation, including special-status plants. Ground-disturbing activities have the potential to result in the introduction and spread of noxious weed species of concern to local agricultural interests and to the California Invasive Plant Council (Cal-IPC 2020). Invasive plant seeds can be introduced via construction vehicles and personnel, soils used from backfill, and grading and clearing of vegetated areas. Invasive seeds may also be introduced after construction by off-highway vehicles, or livestock from newly created access to areas that previously had limited access. The potential direct and indirect impacts of construction on these special-status plant species, which are regionally rare and of limited distribution, would be significant.

This potential impact can be reduced to less than significant with implementation of the mitigation measures listed below. These measures are consistent with the mitigation measures in the California High-

Speed Train: Merced to Fresno Section Draft Project Environmental Impact Report/Environmental Impact Statement (CAHSRA 2011). The common mitigation MM-BIO-1 through MM-BIO-14 identify avoidance, minimization, and compensation measures to minimize potential impacts and effects on special-status species and other sensitive biological resources. Mitigation Measures MM-BIO-1 through MM-BIO-14 have multiple benefits that avoid, protect, or compensate for project impacts and effects on special status species and other biological resources and will be applied to all impacts described below as appropriate. To refine the mitigation measures presented below, coordination with federal, state, and local agencies (e.g., USFWS, CDFW) would be conducted before construction.

In addition, implementation of MM-BIO-15 would reduce construction impacts on hairy Orcutt grass, San Joaquin Valley Orcutt grass, succulent owl's-clover, and spiny-sepaled button-celery to less than significant by protecting special-status plant occurrences in ERAs and environmentally sensitive areas during construction, or by implementing compensatory mitigation to offset impacts. If direct impacts cannot be avoided, compensatory mitigation would be accomplished by purchasing credits at a mitigation bank or by developing and implementing a Special-Status Plant Mitigation Plan. Mitigation for either approach would be at a 1:1 ratio at a minimum and would offset the loss of special-status plants due to construction activities.

Future operation of the Madera Station, the San Joaquins and CAHSR trains, and the increased vehicular traffic at the Madera Station is not expected to have effects on special-status plants that differ substantially from existing conditions. Operational impacts of the CAHSR on special-status plant species would therefore be considered less than significant.

10.1.2 California Tiger Salamander (Ambystoma californiense)

California tiger salamander was documented at multiple locations within and immediately adjacent to the Project Footprint in 2015, 2016, and 2017. The CNDDB record documents these locations in eight polygons for California tiger salamander, with six along both sides of Avenue 12, from the San Joaquins BNSF Corridor tracks to approximately 0.5 mile west of the tracks, and two approximately 0.25 mile south behind a PG&E substation in a vernal pool. Of the locations along Avenue 12, one was found dead in 2015, one was taken from a burrow excavation in 2016 and relocated, and five adults and one juvenile were displaced by construction from January to May 2017. Since May 2017, construction of the CAHSR required grading of the entire area, thus any previous habitat has been entirely removed and no longer exists.

California tiger salamander could potentially occur in SW-4, which is a long, narrow anthropogenic wetland at the toe of the railroad embankment that is located beneath the proposed Madera Station, and in other seasonal wetlands (SW-1 through SW-6) in the Project Footprint (Attachment A, Figure 4). Vernal pool habitat with documented breeding California tiger salamander is located approximately 800 feet south of Avenue 12, approximately 0.5 mile south of the most southern seasonal wetlands (SW-1 through SW-3), and approximately 1.1 miles south of the proposed Madera Station and SW-4. Aestivating California tiger salamander could therefore potentially occur in small mammal burrows anywhere within the Project Footprint, but especially uncultivated areas between agriculture fields and the San Joaquin tracks.

The vernal pool in the northern portion of the Project Footprint could also potentially provide breeding habitat for California tiger salamander, and outside of the Project Footprint there are considerably larger pools in the same field that are 0.5 mile or less to the northeast. Additional pools are located to the east of

the railroad tracks. Aestivating California tiger salamander could therefore potentially occur in small mammal burrows around this vernal pool or across most of the Project Footprint if they migrate between wetlands.

If California tiger salamander is present in the seasonal wetlands, the vernal pool, or in small mammal burrows in adjacent uplands, direct impacts would include crushing from construction equipment, exposure to accidental spills, including contaminants or pollutants, changes in micro/local hydrology, and displacement due to habitat modification. Direct impacts would also include the permanent conversion of occupied habitat. Indirect impacts may result from grading and stockpiling soils upslope of the pools, leading to sediment transfer into the water column. Chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks could contaminate the water column, resulting in mortality or reduced reproductive success of California tiger salamanders. All of the above direct and indirect impacts associated with construction of Phase 1 of the Project would be significant.

These potential impacts can be reduced to less than significant with implementation of the mitigation measures MM-BIO-1 through MM-BIO-14 and with implementation of MM-BIO-16 and MM-BIO-17, which requires a preconstruction survey for California tiger salamander and implementation of compensatory mitigation if warranted. MM-BIO-16 would reduce construction impacts on California tiger salamander to less than significant by providing compensatory mitigation for loss of aquatic and/or upland California tiger salamander habitat at a 1:1 ratio.

Future operation of the Madera Station, the San Joaquins and CAHSR trains, and the increased vehicular traffic at the Madera Station is not expected to have effects on California tiger salamanders that differ substantially from existing conditions. Operational impacts of the Madera Station on California tiger salamander would therefore be considered less than significant.

10.1.3 Western Spadefoot (Spea hammondii)

Western spadefoot is documented in the CNDDB at the same general locations as California tiger salamander along Avenue 12. The record notes the habitat was on the north side of Avenue 12, associated with a manmade berm and agricultural dirt road, that four adults were relocated in April and May of 2017, and that one adult and dozens of larvae were observed from March to April 2018. Several other CNDDB records from 2019 document western spadefoot breeding in vernal pools approximately 0.3-mile northeast of the Project Footprint, immediately east of the San Joaquins BNSF Corridor tracks.

The seasonal wetlands (SW-1 through SW-6) and the vernal pool located in the northern end of the Project Footprint could provide breeding habitat for western spadefoot, and small mammal burrows in nearby upland habitat in the Project Footprint could provide refugia for aestivating. If western spadefoot is present in the seasonal wetlands, the vernal pool, or in small mammal burrows in adjacent uplands, the same direct and indirect impacts described above for California tiger salamander above could occur to western spadefoot. These impacts would be significant because this species is of limited distribution and increasingly imperiled in the state and in Madera County (USFWS 2005).

These potential impacts can be reduced to less than significant with implementation of mitigation measures MM-BIO-1 through MM-BIO-14, MM-BIO-19, and MM-BIO-20. These measures involve conducting a habitat assessment, implementing avoidance and minimization measures to protect western

spadefoot habitat, and securing compensatory mitigation at an approved mitigation bank at a 1:1 ratio if the avoidance and minimization measures cannot be implemented. The compensatory mitigation would reduce impacts to less than significant by offsetting the loss of aquatic and/or upland western spadefoot habitat.

Future operation of the Madera Station, the San Joaquins and CAHSR trains, and the increased vehicular traffic at the Madera Station is not expected to have effects on western spadefoot that differ substantially from existing conditions. Operational impacts of the Madera Station on western spadefoot would therefore be considered less than significant.

10.1.4 Vernal Pool Fairy Shrimp (Branchinecta lynchi)

Vernal fairy shrimp is documented in the CNDDB at two locations that are adjacent but outside the Project Footprint. One occurrence from 2017 is south of Avenue 12 behind a PG&E substation, where vernal pool habitat is approximately 850 feet west of the Project Footprint and 800 feet south of Avenue 12. The second occurrence is from 1994 and is immediately south of Avenue 13 and east of the San Joaquins BNSF Corridor tracks in a grassland area with vernal pools, some that are immediately east of the tracks and the Project Footprint. No CNDDB records exist for vernal pool fairy shrimp within the Project Footprint, but these nearby occurrences indicate that there is potential for this species to occur in the area.

Vernal pool fairy shrimp have a low to moderate potential to occur in the seasonal wetland and vernal pool habitat within the Project Footprint, respectively. This potential is based on the seasonal wetlands being more disturbed and created by the railroad embankment, while the vernal pool to in the north end of the footprint is in a field known to support vernal pool plant species and with other vernal pools nearby.

If vernal pool fairy shrimp are present in the seasonal wetland under the direct footprint of the proposed Madera Station (SW-4), direct impacts could include crushing of adults, eggs or cysts from construction equipment. The vernal pool at the north end of the Project Footprint would not be directly impacted by construction of the Madera Station, nor would the other seasonal wetlands in the Project Footprint, but construction activities adjacent to or within the watershed of vernal pools can adversely affect vernal pool fairy shrimp and other vernal pool invertebrates. These indirect disturbances include changes in the retention/infiltration of runoff to the pool and other changes in micro/local hydrology, and exposure to accidental spills, including contaminants or pollutants. Indirect impacts may also result from grading and stockpiling soils upslope of the wetland, leading to sediment transfer into the water column. Chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks could contaminate the water column, resulting in mortality of vernal pool invertebrates. These direct and indirect impacts on vernal pool invertebrates would be significant.

These potential impacts can be reduced to less than significant with implementation of the mitigation measures MM-BIO-1 through MM-BIO-14 and with implementation of MM-BIO-21 and MM-BIO-22, which require a preconstruction site assessment for vernal pool fairy shrimp and flagging or marking environmentally sensitive areas and ERAs. MM-BIO-22 would reduce construction impacts on vernal pool fairy shrimp to less than significant by providing compensatory mitigation for loss of vernal pool invertebrates at a 1:1 ratio.

Future operation of the Madera Station, the San Joaquins and CAHSR trains, and the increased vehicular traffic at the Madera Station are not expected to have adverse effects on vernal pool fairy shrimp that differ substantially from existing conditions. Operational impacts of these future operations on vernal pool fairy shrimp would therefore be considered less than significant.

10.1.5 Swainson's Hawk (Buteo swainsoni)

Fallow agricultural grain fields and row crops within the Project Footprint provide foraging habitat for Swainson's hawk, while scattered individual Goodding's willow and Fremont cottonwood trees in Cottonwood Creek, upstream and downstream of the Project Footprint, provide nesting habitat. A CNDDB record documents multiple Swainson's hawk nests in 2016 and 2017 that were located immediately southwest and downstream of the Project Footprint. The record indicates that in 2016 multiple nests, one as close as 150 feet from the Project Footprint, failed but a fledgling was observed in the area, and that in 2017 a successful nest approximately 1,500 feet downstream produced two young.

The minor loss of foraging habitat due to construction of the Madera substation would be less than significant, but if construction of Phase 1 or Phase 2 occurred near an active Swainson's hawk nest, the related noise and disturbance could result in nest abandonment or decreased reproductive success, which would be significant. Potential impacts on nesting Swainson's hawks can be reduced to less than significant, however, with mitigation measure MM-BIO-23, which would require pre-construction surveys for Swainson's hawks and establishing non-disturbance buffers to protect nests during construction.

Future operation of the Madera Station, the San Joaquins and CAHSR train services, and the increased vehicular traffic at the Madera Station are not expected to have adverse effects on Swainson's hawks that differ substantially from existing conditions. Operational impacts of these future operations on Swainson's hawk would therefore be considered less than significant.

10.1.6 Burrowing Owl (Athene cunicularia)

Burrowing owl is not documented in or near the Project Footprint. The closest CNDDB occurrence records document this species approximately 6 miles northwest and 9 miles northeast. The closer record notes the burrow was later destroyed and the other record that the site contained open grassland habitat with abundant ground squirrel burrows. Although burrowing owl is not documented in the area, this species often occurs in highly modified landscapes and could nest in ground squirrel burrows adjacent to the existing railroad tracks or in small mammal burrows in ruderal grassland habitat adjacent to agricultural fields. The habitat is considered low-quality due to the agriculture and other disturbance, but this habitat still has potential to provide foraging or nesting habitat.

Construction activities related to the new Madera Station and its interim access road, and Phase 2 could directly harm burrowing owl nests by crushing burrows, or the noise and disturbance associated with construction could indirectly cause nest abandonment. The impact would be significant but can be reduced to less than significant with implementation of mitigation measure MM-BIO-24. This measure calls for conducting pre-construction surveys for burrowing owls, establishing non-disturbance buffers to protect nesting burrowing owls during construction, and potentially exclusion and relocation plans if nesting sites cannot be avoided. If active burrows cannot be avoided during the nonbreeding season (September 1 to January 31), the applicant and/or their Project Biologist will develop a burrowing owl exclusion and

relocation plan, in consultation with CDFW, according to guidance provided in Appendix E of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012) in order to relocate the owls. If an active burrow is found during the breeding season, relocation will not be allowed, and the applicant and/or their Project Biologist will establish appropriate-sized buffers, in consultation with CDFW, to protect the nest until the fledglings are capable of independent survival and can be relocated.

Future operation of the Madera Station, the San Joaquins and CAHSR train services, and the increased vehicular traffic at the Madera Station are not expected to have adverse effects on burrowing owl that differ substantially from existing conditions. Operational impacts of these future operations on burrowing owl would therefore be considered less than significant.

10.1.7 Nesting Migratory Birds

Vegetation removal, grading, and other Project construction activities associated with Phase 1 and its interim access road, and the station and new tracks associated with Phase 2 could result in mortality of individuals and nest abandonment of migratory birds. The nests of most bird species found in California are protected by the MBTA and California Fish and Game Code 3503. If vegetation is removed during the nesting bird season (generally late February through early September), mortality of eggs and chicks of tree/shrub nesting and ground nesting birds could result if an active nest were present. Project construction could also disturb active nests near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. The potential loss of an active nest or mortality of chicks and eggs of any special-status or protected bird species would be a significant impact. This potential impact can be reduced to less than significant with implementation of mitigation measure MM-BIO-25. This measure calls for conducting pre-construction nesting bird surveys and establishing non-disturbance buffers to protect nesting birds during construction.

Future operation of the Madera Station, including the CAHSR portion of the station, both train services, and increased vehicular traffic at the Madera Station are not expected to have adverse effects on migratory birds that differ substantially from existing conditions. Operational impacts of these future operations on migratory birds would therefore be considered less than significant.

10.2 Potential Impacts to Riparian and Other Sensitive Natural Communities

The construction of Phase 1 and Phase 2 of the Project would not result in any impacts to riparian habitat because no such habitat exists within the Project Footprint. The new CAHSR track would be constructed on the existing span over Cottonwood Creek, but the closest riparian woodland habitat is 100 to 150 feet downstream in the channel from the Project Footprint and therefore would not be impacted. Additionally, the seasonal wetlands (SW-1 through SW-6) located along the base of the existing San Joaquins BNSF Corridor tracks, of which SW-4 would be degraded or destroyed by the construction of the Madera Station, are not considered a sensitive natural community or jurisdictional waters of the United States. However, the vernal pool wetland at north end of the Project Footprint is considered a sensitive natural community and classified as a Northern Claypan Vernal Pool (Sawyer and Keeler-Wolf 1995) or Fremont's goldfields–Downingia vernal pools (CDFW 2019 and CNPS 2020b).

Construction activities associated with the Phase 2 include building the new CAHSR track through the northern section of the Project Footprint. The track alignment would be along the west edge of the vernal

pool, and a border fence would be constructed within or along the east edge. Excavating, digging, and heavy equipment working at this location could degrade and destroy the pool, which would result in permanent direct impacts to this community, and the permanent loss of plant and wildlife species, hydrological functions, and possibly the hardpan soil layer. This impact on a sensitive natural community would be significant.

Mitigation Measure MM-BIO-26 calls for a delineation of the extent of the vernal pool in the Project Footprint and requires compensatory mitigation for permanent impacts to this sensitive natural community. If direct impacts to protected wetlands cannot be avoided by protecting the occurrences within an environmentally sensitive area or an ERA, as described in mitigation measures MM-BIO-17, MM-BIO-19 and MM-BIO-21 for special-status vernal pool species, mitigation will be accomplished by purchasing credits from an existing mitigation bank that provides habitat for vernal pool wetlands. Mitigation will be at least 1:1 for the actual impact (calculated by area per as-built construction drawings and the results of the preconstruction plan surveys). Implementing these mitigation measures would reduce construction impacts on sensitive natural communities to less than significant by protecting the vernal pool wetland in an ERA during construction, or by implementing compensatory mitigation to offset impacts. Together, MM-BIO-17, MM-BIO-19, MM-BIO-21 and MM-BIO-26 would reduce impacts on this vernal pool to less than significant by protecting the feature in an environmentally sensitive area and ERA during construction, or by implementing compensatory mitigation to offset impacts on the sensitive natural community.

Future operation of Phase 1, including the Phase 2 portion of the station, both train services, and increased vehicular traffic at Phase 1 are not expected to have adverse effects on sensitive natural communities that differ substantially from existing conditions. Operational impacts of these future operations on sensitive natural communities would therefore be considered less than significant.

10.3 Potential Impacts to Federally-Protected Wetlands Defined by Section 404 of the Clean Water Act

The seasonal wetlands, which are isolated features along the west side of the San Joaquins BNSF Corridor tracks, are non-jurisdictional under Section 404 of the Clean Water Act (CWA) and therefore not federally protected; however, the single vernal pool and Cottonwood Creek in the northern portion of the Project Footprint are potentially subject to USACE jurisdiction under Section 404 of the CWA.

While no impacts are expected in Cottonwood Creek because the new elevated crossing for the CAHSR is already constructed, construction activities associated with Phase 2 include building the new CAHSR track through northern section of the Project Footprint. The track alignment would be along the west edge of the single vernal pool, and a border fence would be constructed within or along the east edge. Excavating, digging, and heavy equipment working at this location could degrade and destroy the pool, which would result in permanent direct impacts to a federally-protected wetland, and permanent hydrological alterations could result in the loss of this feature entirely, which would be a significant impact.

Mitigation Measure MM-BIO-26 calls for a delineation of the extent of the vernal pool in the Project Footprint and requires compensatory mitigation for permanent impacts to this federally protected wetland. If direct impacts to protected wetlands cannot be avoided by protecting them within an environmentally sensitive area or an ERA, as described in mitigation measures MM-BIO-17, MM-BIO-19 and MM-BIO-21, mitigation will be accomplished by purchasing credits from an existing mitigation bank that provides habitat for vernal pool wetlands. Mitigation will be at least 1:1 for the actual impact (calculated by area per as-built

construction drawings and the results of the preconstruction plan surveys). Implementing these mitigation measures would reduce construction impacts on protected wetlands to less than significant by protecting the vernal pool wetland in an ERA during construction, or by implementing compensatory mitigation to offset impacts.

Future operation of Phase 1, including Phase 2 portion of the station, both train services, and increased vehicular traffic at the Madera Station are not expected to have adverse effects on federally protected wetlands that differ substantially from existing conditions. Operational impacts of these future operations on federally protected wetlands would therefore be considered less than significant.

10.4 Potential Impacts to Native Migratory Fish or Wildlife or Native Wildlife Corridors to the Native Wildlife Nursery Sites

Wildlife corridors provide broad connections for wildlife movement between two or more habitat areas. Section 3.7 (Biological Resources and Wetlands) in the CAHSR EIR/EIS (CAHSR 2011) referred to studies that, in general, identified that wildlife movement within corridors that included riparian corridors or waterways, contiguous or semi-contiguous habitat patches, and culvert/bridge underpasses. Conversely, features that correlated with impeding wildlife movement included roads/highways, urbanization, gaps in habitat patches, agriculture/ranching, dams and diversions.

While the CAHSR EIR/EIS (CAHSR 2011) does not identify Cottonwood Creek as one of the important or major wildlife corridors in the region, it is the only established native resident or migratory wildlife corridor that crosses the Project Footprint. The creek is mapped as an ephemeral or intermittent drainage, so its creek bed is often dry, and the channel from the top of bank on each side, including the upland/riparian vegetation, is 250-feet wide. These conditions are suitable for free-roaming wildlife to utilize the channel to migrate, and the San Joaquins and CAHSR track crossing are elevated over the channel, so there is no barrier to movement.

No direct impacts would occur to this wildlife corridor because both crossings are already completed and elevated, but indirect impacts could occur from construction activities such as lighting, noise, motion, and other startle effects if they were to occur in the vicinity of Cottonwood Creek, and they could result in indirect and temporary disruption of wildlife movement. Other temporary but direct impacts could occur across the entire Project Footprint from the placement of barriers during construction and would affect the ability of wildlife to move across the Project Footprint and potentially move off the Project Footprint after being displaced by construction activities such as digging or grading with heavy equipment. Temporary direct impacts could also potentially affect wildlife in adjacent habitats by interfering with movement patterns or by causing wildlife to temporarily avoid areas adjacent to the construction areas. These impacts would be temporary and minor, given that the Project Footprint is not a major movement corridor for wildlife, and are considered less than significant.

The Project is located within mapped essential fish habitat defined by Magnuson-Stevens Fisheries Conservation and Management Act (MSFCMA) for Pacific Coast Salmon; however, there is no suitable habitat to support chinook salmon or any other salmon species, so this does not apply to this project, and the project would not impact any migratory fish species. The Project Footprint also does not provide a breeding or nursery site for native wildlife, therefore, the construction and operation of the project will not result in impacts to a nursery site for wildlife.

Future operation of the Madera Station, including the CAHSR portion of the station, both train services, and increased vehicular traffic at the Madera Station are not expected to have adverse effects on wildlife movement that differ substantially from existing conditions. Operational impacts on wildlife movement would therefore be considered less than significant.

10.5 Potential Conflicts with Local Policies or Ordinances Protecting Biological Resources

The Project would not conflict with any known local policies or ordinances and would be consistent with provisions of the Madera County General Plan for protecting wetland communities and related riparian areas (Goal 5.D), fish and wildlife habitat (Goal 5.E) and vegetation (Goal 5.F). The following policies within these goals apply to this Project:

- Policy 5.D.2 – The County shall require new development to mitigate wetland loss in both regulated and non-regulated wetlands through any combination of avoidance, minimization, or compensation. The County shall support mitigation banking programs that can provide the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.
- Policy 5.E.10 – Prior to approval of discretionary development permits involving parcels within a significant ecological resource area, the County shall require, as part of the environmental review process, a biotic resources evaluation of the sites by a qualified biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of rare, threatened, or endangered species of plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either identify feasible measures to mitigate such impacts or indicate why mitigation is not feasible.
- Policy 5.F.2 – The County shall require developers to use native and compatible non-native species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation.
- Policy 5.F.5 – The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects.

The Project and the general and species-specific mitigation measures that will be implemented are consistent with these goals and policies; therefore, no impact would occur.

10.6 Potential Conflicts with an Adopted Habitat Conservation Plan or Other Approved Local, Regional, or State Plans

No draft or adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans exist for Madera County; therefore, no impact would occur.

11. RECOMMENDED MITIGATION MEASURES

MM-BIO-1: Designate Project Biologist(s), Contractor's Biologist(s), and Project Biological Monitor(s).

During contract procurement and for construction management and Contractor selection and prior to ground-disturbing activities, designate a Project Biologist(s), a Contractor's Biologist(s), and a Project

Biological Monitor(s) responsible for conducting biological monitoring, overseeing regulatory compliance requirements, and monitoring restoration activities associated with ground-disturbing activities in accordance with the adopted mitigation measures and applicable laws. These roles are defined below:

- Project Biologist: The Project Biologist represents the construction management team, reports directly to the Construction Management Team, and is responsible for reporting and overseeing the biological resources mitigation measures presented below. The Project Biologist is also responsible for ensuring that the terms and conditions in USFWS, USACE, RWQCB, and CDFG permits are outlined in the Mitigation Monitoring and Reporting Program (MMRP). The Project Biologist will report to the overall construction management team, interact with the designated Resident Engineer, and will work to provide quality assurance on the implementation of the mitigation measures as performed by the Contractor and the designated Contractor's Biologist. It is anticipated that the Project Biologist will have specialized support from other biological monitors and will work with the construction management team during deployment of the monitors and their respective responsibilities.
- Contractor's Biologist: The Contractor's Biologist is responsible for implementing mitigation measures in compliance with the terms and conditions outlined in the MMRP and USFWS, USACE, RWQCB, and CDFG permits. The Contractor's Biologist will work to implement mitigation reflected within the construction drawings and specifications. The Contractor's Biologist will keep the Project Biologist informed of the progress, planning, implementation, and activities conducted in support of implementing the mitigation measures.
- Project Biological Monitor: The Project Biological Monitor will be approved by and report directly to the Project Biologist. The Project Biological Monitor will be onsite during all ground-disturbing activities that have the potential to affect biological resources and would be the principal agent(s) in the direct implementation of the MMRP and compliance assurance. The Project Biological Monitor is responsible for Worker Environmental Awareness Program (WEAP) training, general surveys, compliance monitoring, and reporting. The Project Biological Monitor will act on behalf of the Project Biologist.

The Project Biologist's duties include reviewing design documents and construction schedules and determining which Project Biological Monitor(s), depending on type of biological issues, need(s) to report to the construction site each day. The Project Biologist informs the Biological Monitors as to which mitigation measures should be documented each day and of any special issues that arise during meetings with the construction management team and/or the Contractor's team.

The Contractor's Biologist is responsible for the timely implementation of the biological mitigation measures as outlined in the MMRP and construction documents and pertinent resource agency permits. The Project Biological Monitor's duties include monitoring construction crew activities, as needed, to document compliance with applicable mitigation measures and permit conditions.

MM-BIO-2: Regulatory Agency Access.

If requested, before, during, or upon completion of ground-disturbing activities, allow access by USFWS, USACE, RWQCB, and CDFG staff to the construction site. Due to safety concerns, check in with the Resident Engineer prior to accessing the construction site.

MM-BIO-3: Prepare and Implement a Worker Environmental Awareness Program.

Prior to ground-disturbing activities, the Contractor shall prepare and implement a Worker Environmental Awareness Program (WEAP) for construction crews. WEAP training materials include the following: discussion of the federal Endangered Species Act (ESA), Californian Endangered Species Act (CESA), Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act (MBTA), Clean Water Act, and the California Fish and Game Code; consequences and penalties for violation or noncompliance with these laws and regulations and Project permits; identification and value of special-status plants, special-status wildlife, jurisdictional waters, and special-status plant communities; hazardous substance spill prevention and containment measures; the contact person in the event of the discovery of a dead or injured wildlife species; and review of mitigation measures. In the WEAP, detail construction timing in relation to habitat and species' life stage requirements and discuss Project maps, showing areas of planned minimization and avoidance measures.

The Contractor shall implement the WEAP training before the initiation of construction activities and repeat, as needed, when new personnel begin work within the construction Footprint. The Contractor shall perform daily updates and synopsis of the training during the daily safety ("tailgate") meeting. The Contractor shall require that all personnel who attend the training sign an attendance list stating that they have received the WEAP training.

MM-BIO-4: Prepare and Implement a Weed Control Plan.

Prior to ground-disturbing activities, prepare and implement a Weed Control Plan to minimize or avoid the spread of weeds during ground-disturbing activities. In the Weed Control Plan, address the following:

- Identify weed control treatments including permitted herbicides, and manual and mechanical methods for application. Restrict herbicide application from use in environmentally sensitive areas.
- Determine timing of the weed control treatment for each plant species.
- Identify fire prevention measures.

The Contractor shall implement the Noxious Weed Control Plan during the construction period and require that maintenance crews follow the guidelines in the Noxious Weed Control Plan during both the construction and operations of the Project.

MM-BIO-5: Prepare and Implement a Biological Resources Management Plan.

During final design, the Contractor shall prepare a Biological Resources Management Plan (BRMP) and assemble the biological resources mitigation measures. In the BRMP, the Contractor shall include terms and conditions from applicable permits and agreements and make provisions for monitoring assignments, scheduling, and responsibility. The BRMP shall also include habitat replacement and revegetation, protection during ground-disturbing activities, performance (growth) standards, maintenance criteria, and monitoring requirements for temporary and permanent native plant community impacts. The Contractor shall form the parameters for the BRMP with the mitigation measures from this section, including terms and conditions as applicable from the USFWS, USACE, RWQCB, and CDFW permits, as applicable.

In the BRMP, the Contractor shall organize the biological resources mitigation measures and terms and conditions to help facilitate their implementation. The Contractor shall oversee the implementation of the BRMP and shall prepare compliance reports to document implementation and performance.

MM-BIO-6: Prepare and Implement a Restoration and Revegetation Plan.

During final design, the Contractor shall prepare a restoration and revegetation plan (RRP) for habitat subject to temporary ground disturbances during construction that would require decompaction or regrading, if appropriate.

MM-BIO-7: Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in-field).

Prior to ground-disturbing activities, to the extent practicable, the Contractor shall verify that environmental sensitive areas and environmentally restricted areas (ERAs) are delineated as appropriate. Environmentally sensitive areas are areas within the construction zones containing suitable habitat for special-status species and habitats of concern that may allow construction activities, but have restrictions based on the presence of special-status species or habitats of concern at the time of construction. ERAs are areas outside the Project Footprint under construction that must be protected in-place during all construction activities.

Prior to ground-disturbing activities, the Contractor shall include all environmentally sensitive areas and ERAs on final construction plans (including grading and landscape plans). The Contractor shall prepare maps of all environmentally sensitive areas and ERAs on the design drawings and work to update these maps as necessary. The Contractor shall submit these maps to the SJJPA for their review and approval prior to the start of construction.

Prior to ground-disturbing activities, install the environmentally sensitive area and ERAs. Mark environmentally sensitive areas and ERAs with high visibility temporary fencing to prevent encroachment of construction personnel and equipment onto sensitive areas. Designate the two categories, environmentally sensitive area and ERA, differently in the field (e.g., different colored flagging/fencing). Use sub-meter accurate GPS equipment to delineate all environmentally sensitive areas and ERAs. Remove environmentally sensitive areas and ERA fencing when construction is complete, or the resource has been cleared according to agency permit conditions in the MMRP and construction drawings and specifications.

MM-BIO-8: Equipment Staging Areas.

Prior to ground-disturbing activities, locate staging areas for construction equipment outside sensitive biological resources including habitat for special-status species, habitats of concern, and wildlife movement corridors, to the maximum extent possible.

MM-BIO-9: Avoid Mono-Filament Netting.

During ground-disturbing activities, Contractor shall verify that plastic monofilament netting (erosion-control matting) or similar material is not used in erosion control materials; substitutes include coconut hair matting or tackified hydroseeding compounds.

MM-BIO-10: Vehicle Traffic.

During ground-disturbing activities, the Contractor shall restrict Project-related vehicle traffic, within the construction area, to established roads, construction areas, and other designated areas. Contractor shall establish vehicle traffic locations disturbed by previous activities to prevent further adverse effects. Workers shall observe a 20-mph speed limit for construction areas with potential special-status species habitat. Lastly, the Contractor shall clearly flag and mark access routes and prohibit off-road traffic.

MM-BIO-11: Entrapment Prevention.

The Contractor shall cover all excavated, steep-sided holes or trenches, more than eight inches deep, at the close of each working day with plywood or similar materials or provide a minimum of one escape ramp per 10 feet of trenching constructed of earth fill. The Contractor shall thoroughly inspect such holes or trenches for trapped animals before filling.

Screen all culverts, or similar enclosed structures, with a diameter of 4 inches or greater to prevent use by wildlife. Clear stored material at the construction site for common and special-status wildlife species before the material is subsequently used or moved.

MM-BIO-12: Work Stoppage.

During ground-disturbing activities, the Contractor shall halt work in the event that a special-status wildlife species gains access to the Project Footprint under construction. The Contractor shall suspend ground-disturbing activities in the immediate area that could reasonably result in a take of special-status wildlife species. The Contractor shall continue the suspension until the individual leaves voluntarily, is relocated to a release area using USFWS- and/or CDFW-approved handling techniques and relocation methods, or as required by USFWS or CDFW.

MM-BIO-13: 'Take' Notification and Reporting.

The Contractor shall notify the USFWS and/or CDFW immediately in the case of an accidental death or injury to a federal or state listed species during Project-related activities.

MM-BIO-14: Post-Construction Compliance Reports.

The Contractor shall submit post-construction compliance reports consistent with the appropriate agency (e.g., USFWS and CDFW) protocols within 90 days of completion of construction.

MM-BIO-15: Conduct Pre-Construction Surveys for Special-Status Plant Species and Implement Avoidance, Minimization and Mitigation Measures.

A qualified botanist shall conduct protocol-level preconstruction special-status plant surveys for potentially occurring species during the appropriate survey period, based on the blooming or identification period, and preceding the start of construction. All plant species encountered on the Project area shall be identified to the taxonomic level necessary to determine species status. The surveys shall be conducted no more than 5 years prior and no later than the blooming period immediately preceding the approval of a grading or improvement plan or any ground disturbing activities, including grubbing or clearing. If one or more occurrences of hairy Orcutt grass, San Joaquin Valley Orcutt grass, succulent owl's-clover, or spiny-sepaled button-celery are detected, CDFW and/or USFWS shall be consulted to develop avoidance and minimization

measures to protect these occurrences from direct and indirect impacts during construction. Protection shall involve establishment of ERAs and marking them as environmentally sensitive areas for all occurrences, as described above in MM-BIO-7. If direct and indirect impacts on special-status plants cannot be avoided by protecting the occurrences within ERAs, MM-BIO-16 shall be implemented.

MM-BIO-16: Implement Compensatory Mitigation Measures for Special-Status Plant Species in Consultation with CDFW and/or USFWS

If special-status plant species in the vernal pool cannot be protected from direct and indirect impacts, USFWS and CDFW will be consulted to determine if an Incidental Take Permit (ITP) is required and to develop appropriate compensatory mitigation for loss of special-status plants in the vernal pool. As directed by CDFW and/or USFWS (depending on whether the plant occurrences are state or federally listed), mitigation will be accomplished by either (1) purchasing credits from an existing, approved mitigation bank that provides habitat for the affected special-status plant species, or (2) developing and implementing a Special-Status Plant Mitigation Plan for salvage, relocation and/or propagation of special-status plant species. Mitigation will be at least 1:1 for the actual impact (calculated by area per as-built construction drawings and the results of the preconstruction plan surveys) or at a greater ratio if specified in the ITP. If a Special-Status Plant Mitigation Plan is developed, the mitigation strategy in the plan will include performance standards for successful establishment of the target special-status plants and/or enhancement of existing habitat, and a monitoring and reporting program to track revegetation and/or enhancement success. This plan will be developed in consultation with and approved by CDFW before construction begins. The Special-Status Plant Mitigation Plan will include at least the following provisions:

- Before Project disturbance, identification of restoration areas within the Project Footprint for seeding and/or transplanting of special-status plants, with data collection to determine appropriate microsites
- Before Project disturbance, measurement of existing special-status plant populations within the Project Footprint for percent cover and density and establishment of these characteristics as the minimum success criteria for the species' cover and density as a result of restoration/enhancement.
- A plan and protocols for appropriate and ecologically sensitive collection and storage of special-status plant seeds, rhizomes, and plants from the Project Footprint.
- Transplanting and seeding protocols for special-status plants.
- Adaptive management measures and a remedial planting plan.
- Revegetation and/or enhancement monitoring and reporting for at least 3 years.

MM-BIO-17: Conduct a Site Assessment for California Tiger Salamander and Implement Avoidance and Minimization Measures.

Prior to ground-disturbing activities, the Project Biologist shall conduct a site assessment of the Project area vernal pool and seasonal wetlands and adjacent uplands in accordance with the Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (USFWS 2003). If the site assessment determines that there is a likelihood that the California tiger salamander may occur in wetlands or in upland habitat within the Project Footprint, the USFWS and CDFW shall be consulted, and field surveys shall be conducted to confirm presence or absence of California

tiger salamanders, as required in the USFWS 2003 guidance. If aquatic and upland habitat for California tiger salamanders are identified during the survey, these areas shall be mapped and flagged during preconstruction surveys. Protection shall involve establishment of environmentally restricted areas (ERAs) and environmentally sensitive areas to protect aquatic and/or upland habitat for California tiger salamander within and near the Project Footprint, as described above in MM-BIO-7. If direct and indirect impacts on California tiger salamander habitat cannot be avoided by protecting the habitat within an environmentally sensitive areas and ERAs, mitigation shall be accomplished as described below in MM-BIO-18.

MM-BIO-18: Secure Incidental Take Permits for California Tiger Salamander from CDFW and USFWS and Implement Compensatory Mitigation as Required by Permit Conditions.

If the site assessment and surveys described in MM-BIO-17 establish that California tiger salamander are likely to be present in aquatic or upland habitat in the Project Footprint, and that impacts on aquatic and upland habitat for California tiger salamanders cannot be avoided during construction, ITPs shall be secured from the USFWS and CDFW before construction. All avoidance, minimization and mitigation measures specified in the USFWS and CDFW ITPs shall be implemented during construction. Mitigation shall include purchase of credits at an approved California tiger salamander mitigation bank at a minimum 1:1 ratio, or at a higher ratio if specified in the ITP conditions.

MM-BIO-19: Conduct a Site Assessment for Western Spadefoot and Implement Avoidance and Minimization Measures.

Prior to ground-disturbing activities, the Project Biologist shall conduct a site assessment for western spadefoot. If the site assessment determines that there is a likelihood that western spadefoot may occur in wetlands or upland habitat within the Project Footprint, aquatic and upland habitat for this species shall be mapped and flagged during the surveys. Protection shall involve establishment of ERAs and environmentally sensitive areas to protect aquatic and/or upland habitat for western spadefoot within and near the Project Footprint, as described above in MM-BIO-7. If direct and indirect impacts on western spadefoot habitat cannot be avoided by protecting the habitat within environmentally sensitive areas and ERAs, mitigation shall be accomplished as described below in MM-BIO-20.

MM-BIO-20: Secure Compensatory Mitigation to Offset Impacts on Western Spadefoot.

If the surveys described in MM-BIO-19 determine that western spadefoot are present in aquatic or upland habitat in the Project Footprint, mitigation credits shall be purchased at an approved mitigation bank for western spadefoot at a minimum 1:1 ratio.

MM-BIO-21: Establish Environmentally Sensitive Areas and ERAs around Seasonal Wetlands and the Vernal Pool to Protect Vernal Pool Fairy Shrimp and Other Vernal Pool Invertebrates.

Prior to ground-disturbing activities, the Project Biologist and the Contractor Biologist shall establish ERAs and environmentally sensitive areas to protect aquatic habitat (the vernal pool and six seasonal wetlands) for vernal pool invertebrates. If direct and indirect impacts on vernal pool fairy shrimp and other special-

status vernal pool invertebrates cannot be avoided by protecting the habitat within environmentally sensitive areas and ERAs, mitigation shall be accomplished as described below in MM-BIO-22.

MM-BIO-22: Secure Incidental Take Permit for Vernal Pool Fairy Shrimp from USFWS and Implement Compensatory Mitigation as Required by Permit Conditions.

If direct and indirect impacts on vernal pool fairy shrimp cannot be avoided with establishment and maintenance of environmentally sensitive areas and ERAs, an ITP shall be secured from the USFWS before construction. All avoidance, minimization and mitigation measures specified in the ITPs shall be implemented during construction. Mitigation shall include purchasing credits at an approved vernal pool fairy shrimp mitigation bank at a minimum 1:1 ratio, or at a higher ratio if specified in the ITP conditions.

MM-BIO-23: Conduct Pre-Construction Surveys for Swainson's Hawk and Implement Protective Buffers.

The Project Biologist shall conduct preconstruction surveys for Swainson's hawks during the nesting season (March 1 through August 21) within the Project Footprint and of all suitable nesting habitat within line of sight of construction activities within a 0.5-mile radius of the Project Footprint. The surveys shall be conducted no less than 14 days and no more than 30 days before the beginning of construction. Guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (SHTAC 2000) shall be followed for surveys for Swainson's hawk. This requires that surveys be conducted for at least the two survey periods prior to the start of construction. The survey periods are as follows:

- Period I. January-March 20,
- Period II. March 20 to April 5,
- Period III. April 5 to April 20,
- Period IV. April 21 to June 10 (monitoring known nests only),
- Period V. June 10 to July 30 (post-fledging).

If active Swainson's hawk or other raptor nests are found, appropriate buffers shall be established around active nest sites, in coordination with CDFW, to provide adequate protection for nesting raptors and their young. No Project activity shall commence within the buffer areas until the Project Biologist has determined in coordination with CDFW, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment.

Monitoring of the nest by the Project Biologist or Project Biological Monitor during construction activities may be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by the Project Biologist or Project Biological Monitor.

MM-BIO-24: Conduct Pre-Construction Surveys for Burrowing Owls and Implement Protective Buffers.

The Project Biologist shall conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the Project Footprint. Surveys shall be conducted prior

to the start of construction activities and in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012) which requires that four survey visits be conducted. Surveys conducted during the breeding season (February 1 to August 31) must include one visit between February 15 and April 15 and a minimum of three survey visits spread three weeks apart between April 15 and July 15. Four survey visits spread evenly through the nonbreeding season (September 1 through January 31) are required for nonbreeding surveys. If no occupied burrows are found, no further avoidance and minimization measures shall be required. Surveys for burrowing owl shall be conducted by walking transects with centerlines spaced no more than 65 feet apart to search the ground for burrows.

If an active burrow is found during the nonbreeding season, the Project applicant shall consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion and relocation plan shall be developed according to guidance provided in Appendix E of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). Owls shall be relocated outside of the impact area using passive or active methodologies developed in consultation with CDFW and may include active relocation to preserve areas if approved by CDFW and the preserve managers. No burrowing owls shall be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW.

If an active burrow is found during the breeding season, occupied burrows shall not be disturbed and shall be provided with a 150- to 1,500-foot protective buffer unless the Project Biologist or Project Biological Monitor verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The appropriate size of the buffer (between 150- to 1,500-feet) shall depend on the time of year and level of disturbance as outlined in the CDFW Staff Report (2012:9). The size of the buffer may be reduced if the Project Biologist or Project Biological Monitor, in consultation with CDFW, determines burrowing owls would not be adversely affected by the proposed activities. If a smaller than recommended buffer is used, a scientifically-rigorous monitoring program approved by CDFW shall be implemented to ensure burrowing owls are not detrimentally affected. Once the fledglings are capable of independent survival, the owls shall be relocated outside the impact area if their burrows cannot be avoided or adequately protected with a no-disturbance buffer. Relocation shall follow a burrowing owl exclusion and relocation plan developed according to guidance provided in Appendix E of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). No burrowing owls shall be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW.

MM-BIO-25: Conduct Pre-Construction Surveys for Nesting Bird Species and Establish Protective Buffers.

If construction activities occur during the nesting bird season (February 1 – August 31), a focused survey to identify protected bird nests shall be conducted by the Project Biologist or the Project Biological Monitor before construction begins. Surveys shall include all areas of suitable nesting habitat within 300 feet of the Project Footprint. If no active nests are found, no further avoidance and minimization measures shall be required.

If active nests are found, appropriate buffers shall be established to avoid impacts. No Project activity shall commence within the buffer area until the Project Biologist or Project Biological Monitor, in consultation

with CDFW, confirms the nest is no longer active. Depending on the species of bird and its sensitivity, 50 to 300-feet shall likely to be needed to avoid indirect Project impacts on nesting activities. The size of the buffers may be reduced in consultation with CDFW if the Project Biologist or Project Biological Monitor determines that Project activity within a reduced buffer shall not be likely to adversely affect the nest.

Monitoring of active nests by the Project Biologist or Project Biological Monitor during construction activities may be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by the Project Biologist or the Project Biological Monitor.

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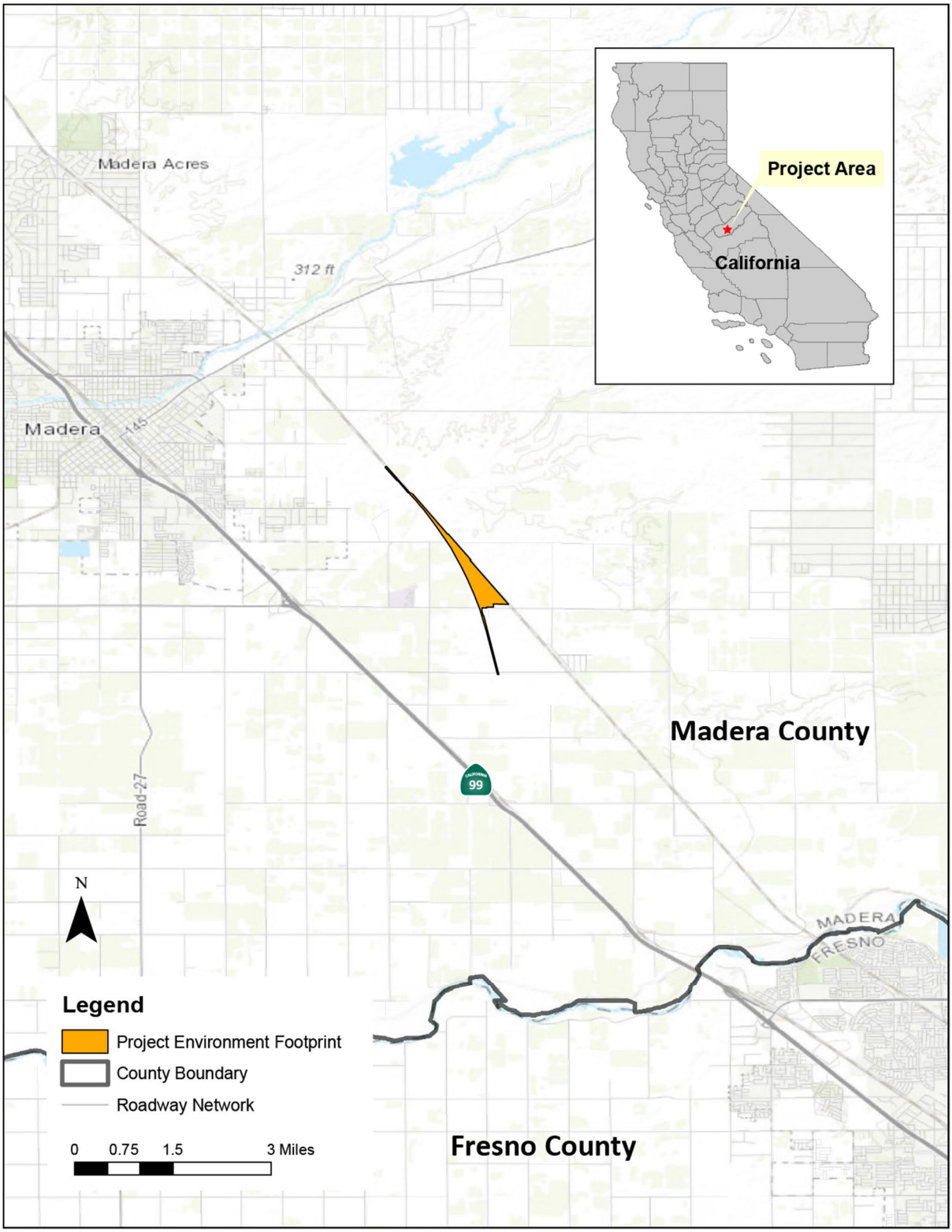
ATTACHMENT A

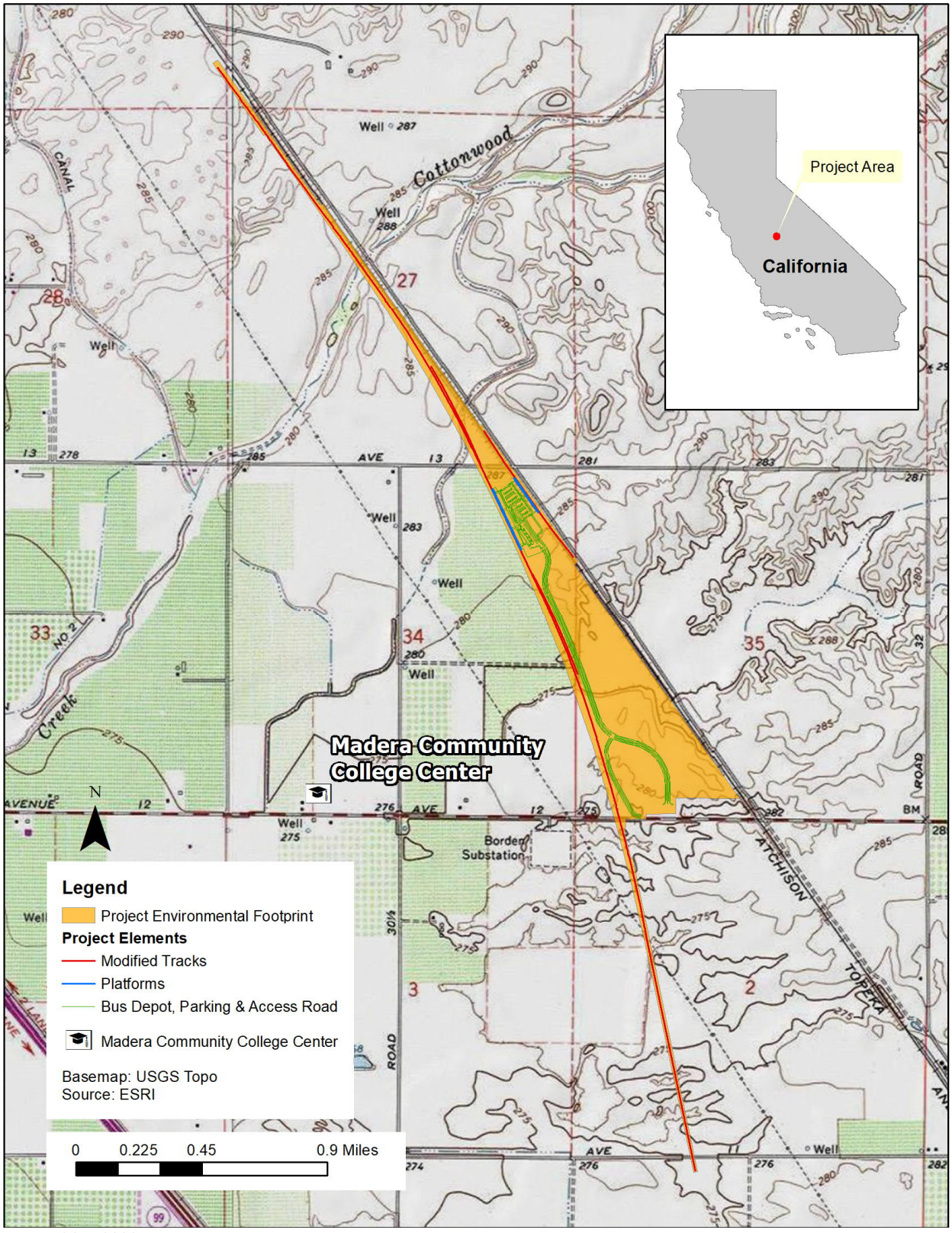
Figures 1 – 8

Figure 1 Regional Project Location



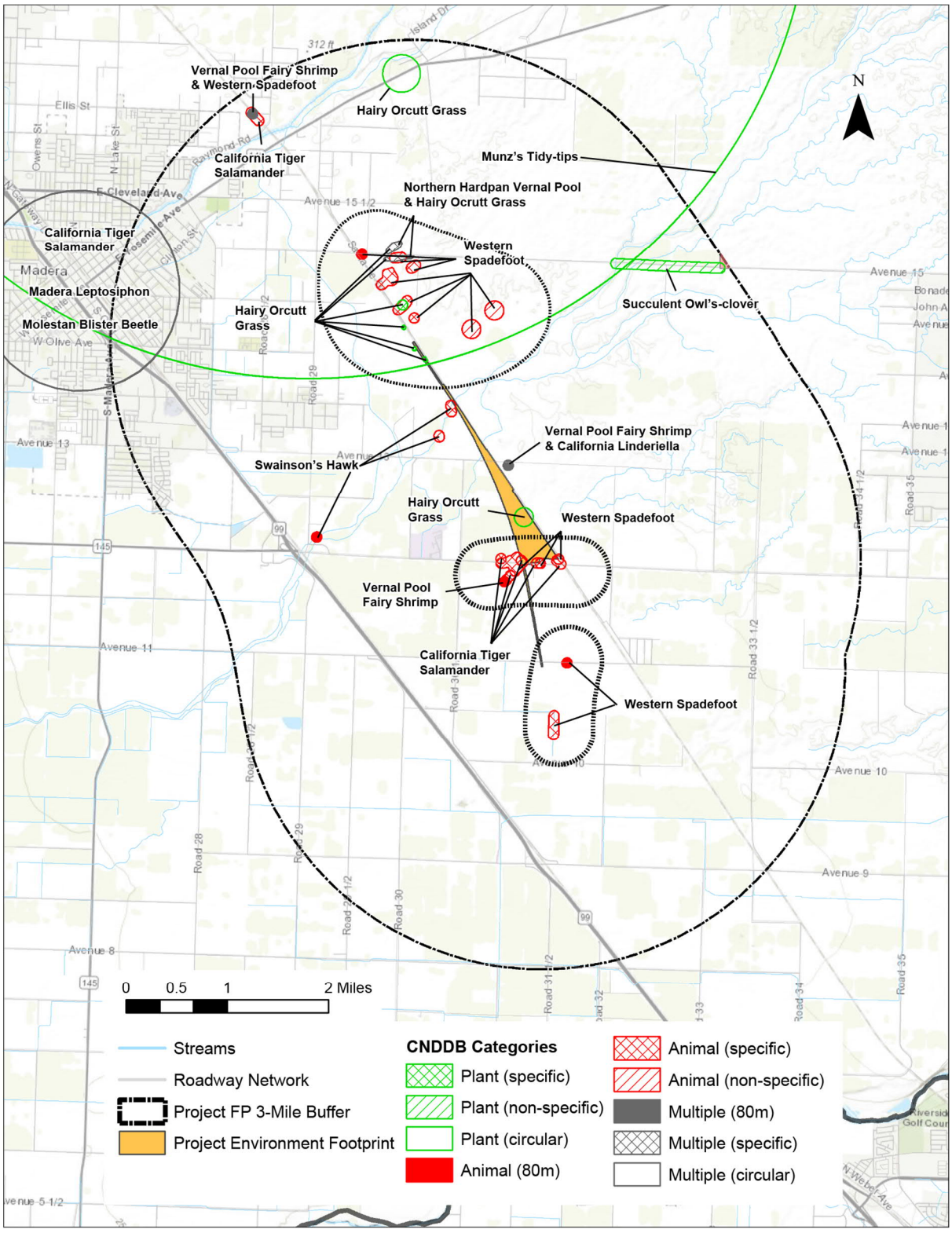
Source: AECOM 2020

Figure 2- Project Footprint



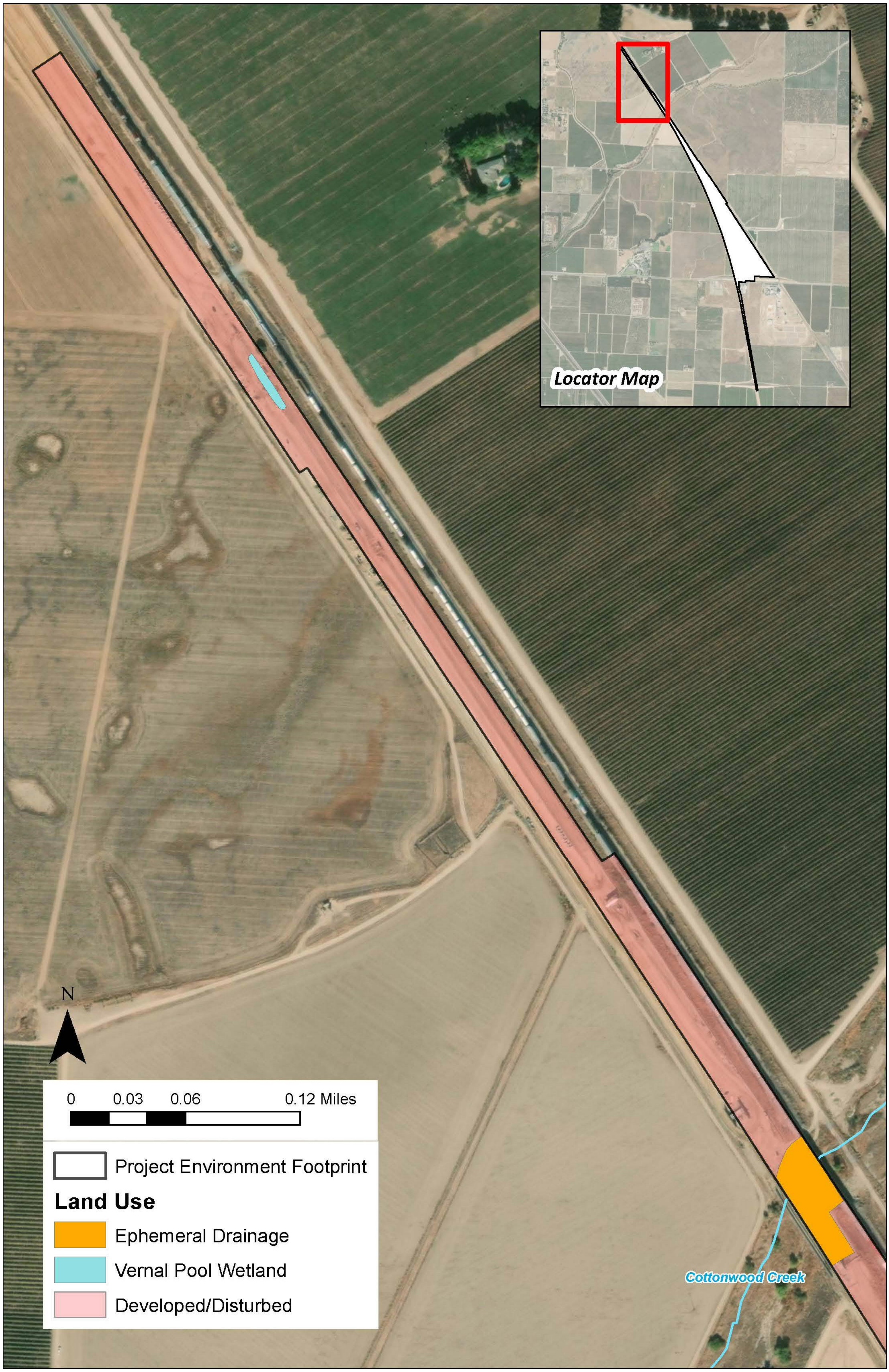
Source: AECOM 2020

Figure 3 Special-Status Plant Species



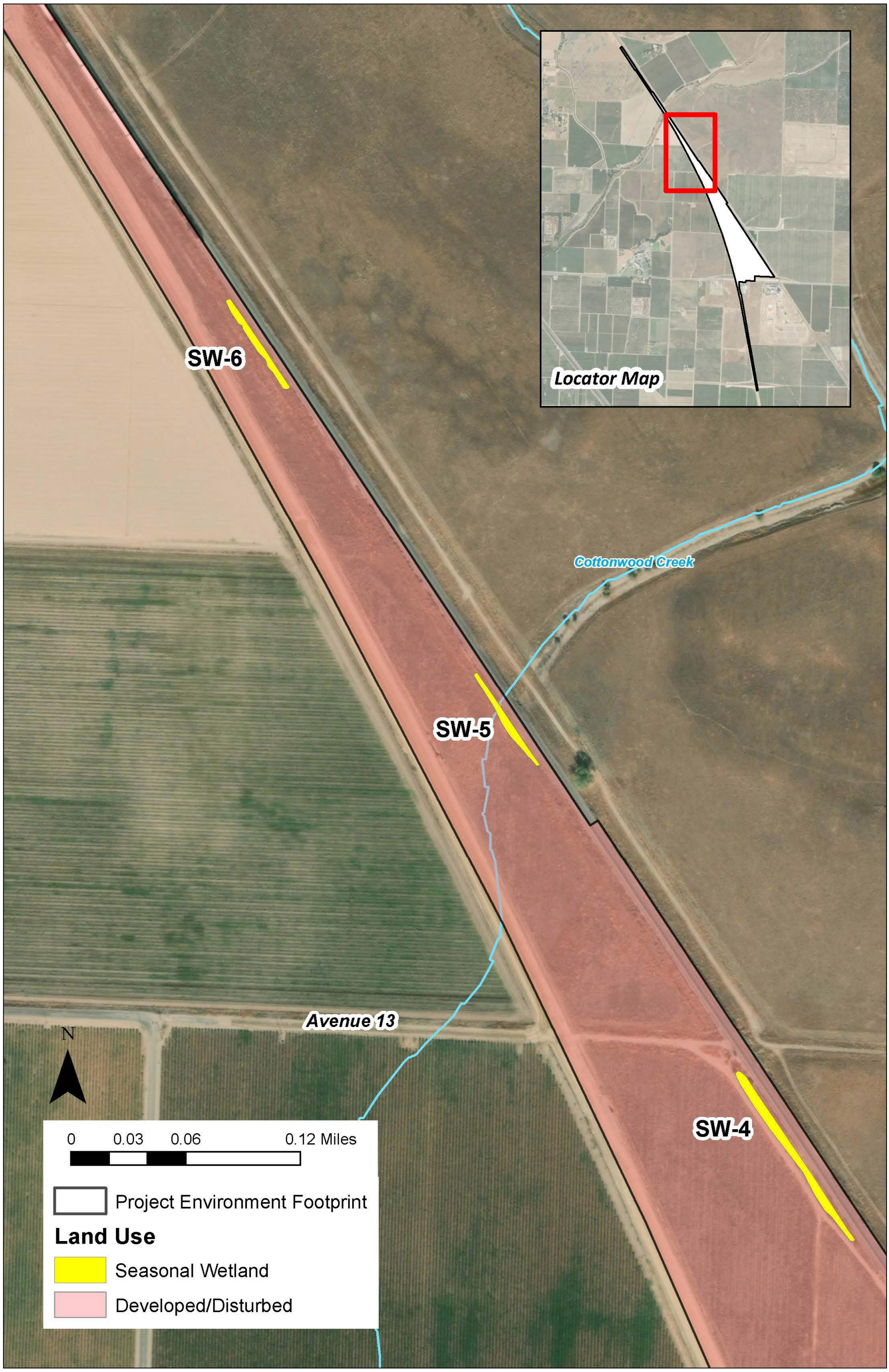
Source: AECOM 2020

Figure 4 Land Cover and Habitat Map (1 of 5)



Source: AECOM 2020

Figure 5 Land Cover and Habitat Map (2 of 5)

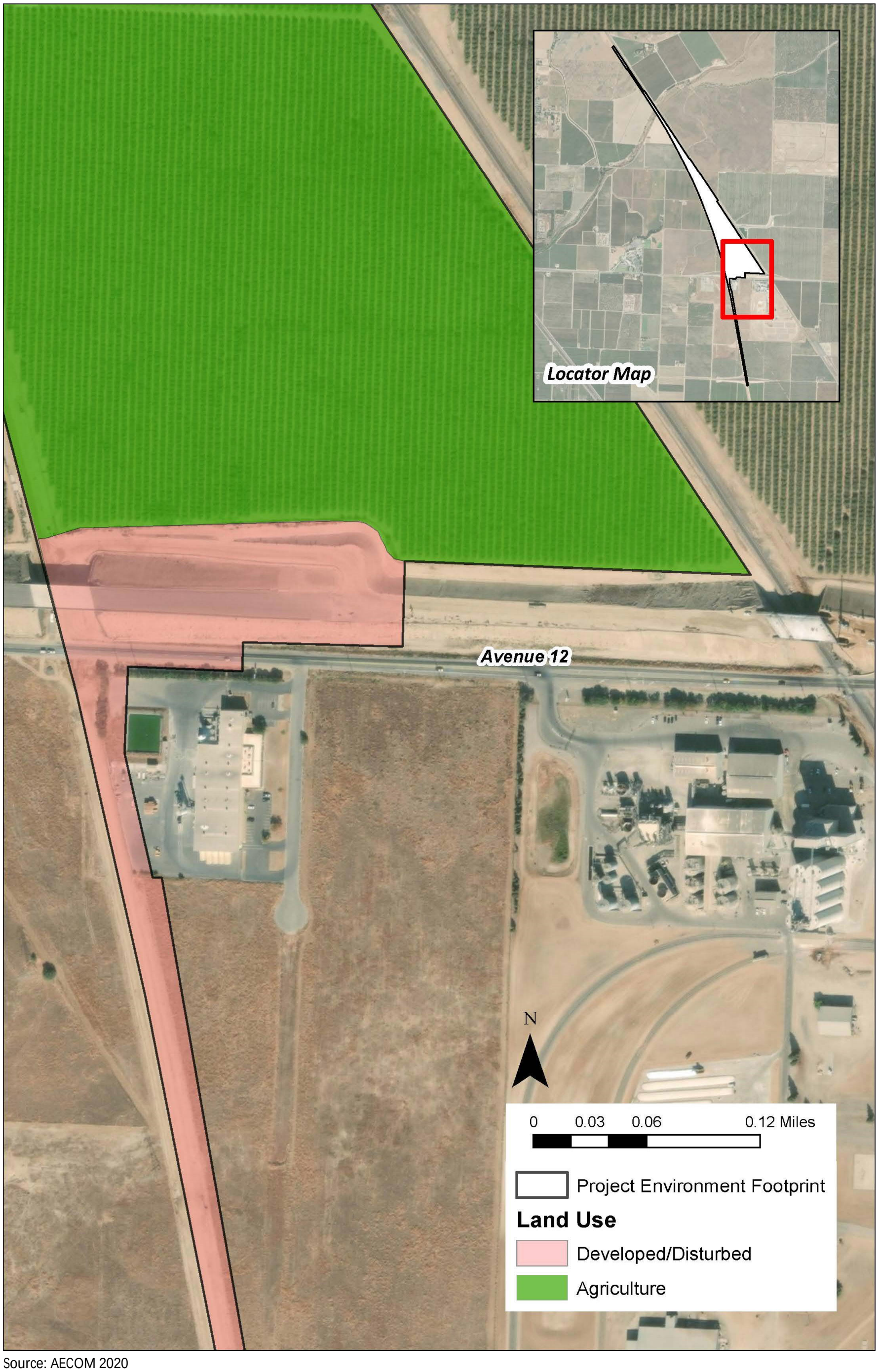


Source: AECOM 2020

Figure 6 Land Cover and Habitat Map (3 OF 5)

Source: AECOM 2020

Figure 7 Land Cover and Habitat Map (4 OF 5)



Source: AECOM 2020

Figure 8 Land Cover and Habitat Map (5 OF 5)

Source: AECOM 2020

ATTACHMENT B

Special-Status Species Tables

Table 1
Special-Status Plant Species Known to or with Potential to Occur on the Project Footprint

Species	Status[1]			Habitat and Blooming Period	Potential for Occurrence in the Project Footprint [2]
	Federal	State	CRPR		
Hoover's calycadenia Calycadenia hooveri	–	–	1B.3	Cismontane woodland, Valley and foothill grassland, rocky; 213 – 985 ft. in elevation. Blooms July – September.	Unlikely to occur. Suitable habitat is likely absent from Project Footprint. No known CNDDB occurrences have been recorded for this species within 12 miles of the project.
Succulent owl's-clover Castilleja campestris var. succulenta	FT	SE	1B.2	Vernal pools, valley foothills and grasslands. Moist places, often in acidic soils: 164 – 2461 ft. in elevation. Blooms April to May	Could occur. Suitable habitat may be present as potential seasonal wetlands are located immediately adjacent to the Project Footprint and species is known from the vicinity. Nearest CNDDB occurrence is located approximately 2 miles northeast.
California jewelflower Caulanthus californicus	–	–	1B.1	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland often with sandy soil substrates; 200 – 3281 ft. elevation. Blooms February to May.	Unlikely to occur. Potentially suitable habitat with sandy soil substrates likely absent from Project Footprint. No known CNDDB occurrences have been recorded for this species in Madera County.
Hoover's cryptantha Cryptantha hooveri	–	–	1A	Inland dunes and sandy soils in valley and foothill grassland; 98 – 1641 ft. elevation. Blooms April to May.	Unlikely to occur. Although there are historic records within Madera County one CNDDB record is presumed extirpated and the closest extant record is located 23 miles northwest of the Project Footprint.
Spiny-sepaled button-celery Eryngium spinosepalum	–	SR	1B.2	Valley and foothill grassland, Vernal pools; 262 – 3199 ft. elevation. Blooms April to June	Could occur. Suitable habitat may be present in the vernal pool and seasonal wetlands within and adjacent to the Project Footprint and species is known from the vicinity. Nearest CNDDB occurrence is located approximately 7 miles north of the Project Footprint.
California satintail Imperata brevifolia	–	–	2B.2	Chaparral, Coastal scrub, Mojavean desert scrub, Meadows and seeps (often alkali), Riparian scrub/mesic; 0 – 3987 ft. elevation. Blooms September to May.	Unlikely to occur. There are no historic records within Madera County and no suitable habitat is present within the Project Footprint.

Table 1
Special-Status Plant Species Known to or with Potential to Occur on the Project Footprint

Species	Status[1]			Habitat and Blooming Period	Potential for Occurrence in the Project Footprint [2]
	Federal	State	CRPR		
Munz's tidy-tips Layia munzii	–	–	1B.2	Chenopod scrub, Valley and foothill grassland (alkaline clay); 492 – 2297 ft elevation. Blooms March to April.	Unlikely to occur. Although there are two historic records within Madera County, the closest CNDDB occurrence is from 1937.
Madera leptosiphon Leptosiphon serrulatus	–	–	1B.2	Cismontane woodland, lower montane coniferous forests, and annual grasslands. Dry slopes, often on decomposed granite in woodland; 984 – 4266 ft. elevation. Blooms April to May	Unlikely to occur. Suitable habitat is unlikely present in the Project Footprint. Although there are historic records within Madera County the closest CNDDB occurrence is from 1937.
Orange lupine Lupinus citrinus var. citrinus	–	–	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, often with granitic soil substrates; 1246 – 5578 ft. elevation. Blooms April to July	Unlikely to occur. Suitable habitat is unlikely present in the Project Footprint. Although there are two historic records within Madera County the closest CNDDB occurrences are 12 or more miles from the Project Footprint.
Shining navarretia Navarretia nigelliformis ssp. radians	–	–	1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools/Sometimes clay; 32 – 2478 ft. elevation. Blooms April to July.	Unlikely to occur. Although there are two historic records in Madera County the closest CNDDB occurrence is from 1938 and located five miles north of the Project Footprint. Both records are likely extirpated.
San Joaquin Valley Orcutt grass Orcuttia inaequalis	FT	SE	1B.1	Occurs in deep vernal pools of California's Central Valley; 150 – 657 ft. elevation. Blooms April to September.	Could occur. Suitable habitat may be present as potential seasonal wetlands are located immediately adjacent to the Project Footprint and species is known from the vicinity. Nearest CNDDB occurrence is located approximately 5 miles north of the Project Footprint.

Table 1
Special-Status Plant Species Known to or with Potential to Occur on the Project Footprint

Species	Status[1]			Habitat and Blooming Period	Potential for Occurrence in the Project Footprint [2]
	Federal	State	CRPR		
Hairy Orcutt grass Orcuttia pilosa	FE	SE	1B.1	Vernal pools California's Central Valley. Requires deep pools with prolonged periods of inundation; 150 – 657 ft. elevation. Blooms May to September.	Known to occur. Two CNDDB occurrence records document this species in the central portion of the Project Footprint in 2010 and in the northern end in 2016 and 2017; however, the 2010 record is now believed to be extirpated from the conversion to an orchard. This is species is likely to occur in a vernal pool at the northern location.
Sanford's arrowhead Sagittaria sanfordii	–	–	1B.2	Occurs in freshwater emergent marsh habitat in drainage ditches and canals of California's central valley; 0 – 2132 ft. elevation. Blooms May to October.	Unlikely to occur. Although there is one record within Madera County the CNDDB record is located 23 miles southwest of the Project Footprint.
Caper-fruited tropidocarpum Tropidocarpum capparideum	–	–	1B.1	Valley and foothill grassland, often on convex slopes with alkaline soil substrates; 3 – 1493 ft. elevation. Blooms March to April.	Unlikely to occur. There are no historic records within Madera County and no suitable habitat is present within the Project Footprint.
Greene's tuctoria Tuctoria greenei	FE	–	1B.1	Vernal pools; 98 – 3510 ft. elevation. Blooms May to July.	Unlikely to occur. Although there is one historic record in Madera County the closest CNDDB occurrence is from 1936 and located 4 miles north of the Project Footprint and likely extirpated.

Notes: CESA = California Endangered Species Act; CRPR = California Rare Plant Rank; ESA = Federal Endangered Species Act

Table 1
Special-Status Plant Species Known to or with Potential to Occur on the Project Footprint

Species	Status[1]			Habitat and Blooming Period	Potential for Occurrence in the Project Footprint [2]
	Federal	State	CRPR		
[1] Legal Status Definitions Federal FE Federally Endangered FT Federally Threatened State SE State Endangered SR State Rare California Rare Plant Rank Categories: 1A Plants presumed extirpated in CA and either rare or extinct elsewhere 1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA) 2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA) CRPR Extensions: .1 Seriously threatened in California (greater than 80% of occurrences are threatened and/or high degree and immediacy of threat) .2 Moderately threatened in California (20 to 80% of occurrences are threatened and/or moderate degree and immediacy of threat)					[2] Legal Status Definitions Known to occur—Species, or evidence of its presence, was documented in the Project Footprint and suitable habitat is present. Could occur—Suitable habitat occurs in the Project Footprint and there may be nearby documented occurrences; however, there are little to no other indicators that the species might be present. Unlikely to occur—Species is not likely to occur due to low-quality and/or disturbed habitat, the lack of suitable habitat, or because the Project Footprint is outside of the species known distribution range and does not provide habitat features that would provide all of the species life history requirements.
Sources: CNDDB 2020, CNPS 2020, USFWS 2020, data compiled by AECOM in 2020					

Table 2
Special-Status Wildlife Known to or with Potential to Occur in the Vicinity of the Project Footprint

Species	Listing Status[1]		Habitat	Potential for Occurrence in the Project Footprint[2]
	Federal	State		
Amphibians and Reptiles				
California tiger salamander Ambystoma californiense	FT	ST	Inhabits vacant or mammal-occupied burrows near vernal pools and seasonal ponds; in grassland, savanna, or open woodland habitats; breeding occurs in shallow ephemeral or semi-permanent pools and ponds that fill during heavy winter rains or in permanent ponds.	Could occur. Seasonal wetland and vernal pool habitat in the Project Footprint provide potentially suitable aquatic habitat, and upland estivation habitat is present along the outer margins of agricultural fields in small areas of ruderal grassland. One CNDDB record documents several occurrences of this species in 2017 and 2018 within or immediately adjacent to the Project Footprint along Avenue 12.
Northern California legless lizard Anniella pulchra	–	SSC	Occurs in moist warm loose soil with plant cover. Moisture is essential. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat.	Not likely to occur. No suitable habitat present within the study area. Nearest CNDDB occurrence occurs 20 miles southwest of the Project Footprint.
California glossy snake Arizona elegans occidentalis	-–	SSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Appears to prefer microhabitats of open areas and areas with soil loose enough for easy burrowing	Not likely to occur. No suitable habitat present within the Project Footprint.
Western pond turtle Emys marmorata	–	SSC	Forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nest in nearby uplands with low, sparse vegetation.	Not likely to occur. No suitable perennial aquatic habitat present within the Project Footprint. Nearest CNDDB occurrence occurs 23 miles southwest of the Project Footprint.

Table 2
Special-Status Wildlife Known to or with Potential to Occur in the Vicinity of the Project Footprint

Species	Listing Status[1]		Habitat	Potential for Occurrence in the Project Footprint[2]
	Federal	State		
Blunt-nosed leopard lizard Gambelia sila	FE	SE	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	Not likely to occur. No suitable habitat present within the Project Footprint. Nearest CNDDB occurrence occurs 7 miles southwest of the Project Footprint.
Coast horned lizard Phrynosoma blainvillii	–	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial.	Not likely to occur. No suitable habitat present within the Project Footprint. Nearest CNDDB occurrence occurs 23 miles southwest of the Project Footprint.
California red-legged frog Rana draytonii	FT	FP	Inhabits quiet permanent water of streams, marshes, ponds, lakes. Frequently found adjacent to streams. In summer, estivates in mammal burrows, leaf litter, or other moist sites in or near riparian. Adults disperse into riparian corridors and in damp thickets and forests.	Not likely to occur. No suitable aquatic habitat present within the Project Footprint. Additionally, this species is believed to be extirpated from the Central Valley as explained in this species Recovery Plan (USFWS, 2002).
Western spadefoot Spea hammondii	–	SSC	Inhabits slow-moving streams, sloughs, ponds, marshes, flooded rice fields, irrigation and drainage ditches, and adjacent upland areas.	Could occur. Seasonal wetland and vernal pool habitat in the Project Footprint provide potentially suitable aquatic habitat, and upland estivation habitat is present along the outer margins of agricultural fields in small areas of ruderal grassland. One CNDDB record documents several occurrences of this species in 2017 and 2018 within or immediately adjacent to the Project Footprint along Avenue 12.

Table 2
Special-Status Wildlife Known to or with Potential to Occur in the Vicinity of the Project Footprint

Species	Listing Status[1]		Habitat	Potential for Occurrence in the Project Footprint[2]
	Federal	State		
Giant garter snake *Thamnophis gigas*	FT	ST	Found in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks. Prefers vegetation close to water for basking. Highly aquatic, and active during daylight, and at night in hot weather.	Not likely to occur. No suitable habitat present within the Project Footprint. Nearest CNDDB occurrence occurs 23 miles southwest of the Project Footprint.
Birds				
Tricolored blackbird *Agelaius tricolor* (nesting colony)	–	ST	Nests colonially in tules, cattails, willows, thistles, blackberries, and other dense vegetation. Forages in grasslands and agricultural fields.	Unlikely to occur. Suitable nesting habitat does not exist in or around the Project Footprint. The nearest CNDDB occurrence is more than 7 miles northeast of the Project Footprint.
Burrowing owl *Athene cunicularia* (nesting and wintering)	–	SSC	Nests and forages in grasslands, shrublands, deserts, and agricultural fields, especially where ground squirrel burrows are present.	Could occur. Known to nest and forage in open grasslands and agricultural fields which occur adjacent to the Project Footprint. The nearest CNDDB occurrence is within 6 miles of the Project Footprint.
Swainson's hawk *Buteo swainsoni* (nesting)	–	ST	Nests in riparian woodlands and isolated trees; forages in agricultural, grassland, and shrub habitats. Summer visitor in the Central Valley.	Could occur. No nesting habitat exist within the Project Footprint, but suitable foraging and nesting habitat occurs in grain fields and possibly on the outer edges of some agricultural fields. Active nests have been documented in riparian woodland habitat within Cottonwood Creek, immediately downstream of the Project Footprint.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis* (nesting)	FT	SE	Nests in large blocks of riparian forest habitat with densely foliaged deciduous trees and shrubs, especially willows; other associated vegetation includes cottonwood trees, blackberry, nettle, and wild grape.	Unlikely to occur. No suitable habitat exists within the Project Footprint. The nearest riparian habitat has open canopy and occurs in isolated patches of woodland that is not characteristic of the riparian habitat types where this species is typically found

Table 2
Special-Status Wildlife Known to or with Potential to Occur in the Vicinity of the Project Footprint

Species	Listing Status[1]		Habitat	Potential for Occurrence in the Project Footprint[2]
	Federal	State		
Song sparrow (Modesto population) (Melospiza melodia)	–	SSC	Year-round resident that nests in emergent freshwater marsh and willow and oak woodland riparian habitat along canals and waterways.	Unlikely to occur. No suitable habitat exists within the Project Footprint.
Invertebrates				
Vernal pool fairy shrimp Branchinecta lynchi	T	–	Pools with clear to tea-colored water, most commonly in grass or mud-bottomed swales, or basalt flow depression pools in unplowed grasslands, but sometimes in sandstone rock outcrops and alkaline vernal pools.	Could occur. Suitable habitat is present within the Project Footprint.in a vernal pool located at the northern portion of the Project Footprint and possibly in seasonal wetlands farther south along the existing railroad tracks.
Crotch bumble bee Bombus crotchii	–	SSC	Coastal California east to the Sierra-Cascade crest and south into Mexico.	Unlikely to occur. No suitable habitat exists within the Project Footprint.
Valley elderberry longhorn beetle Desmocerus californicus dimorphus	T	–	Riparian scrub and riparian woodland; dependent upon elderberry (Sambucus mexicana) shrub as primary host species. Occurs only in the Central Valley of California.	Unlikely to occur. No suitable habitat exists within the Project Footprint. The nearest CNDDB occurrence is within 12 miles southeast of the Project Footprint.
Mammals				
Pallid bat Antrozous pallidus	–	SSC	Roosts in rocky outcrops, cliffs, crevices, trees, and snags. Forages over water in mixed conifer forests and conifer woodlands.	Unlikely to occur. No suitable habitat exists within the Project Footprint.
Fresno kangaroo rat Dipodomys nitratoides exilis	FE	SE	Alkali sink-open grassland habitats in western Fresno County. Bare alkaline clay-based soils subject to seasonal inundation, with more friable soil mounds around shrubs and grasses.	Unlikely to occur. No suitable habitat exists within the Project Footprint. Last documented CNDDB occurrence in Madera county was in 1956.

Table 2
Special-Status Wildlife Known to or with Potential to Occur in the Vicinity of the Project Footprint

Species	Listing Status[1]		Habitat	Potential for Occurrence in the Project Footprint[2]
	Federal	State		
Western mastiff bat Eumops perotis californicus	–	SSC	Open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	Unlikely to occur. No suitable habitat exists within the Project Footprint.
American badger Taxidea taxus	–	SSC	Drier open shrub and herbaceous habitats with friable soils. Needs open, uncultivated land.	Unlikely to occur. No suitable habitat exists within the Project Footprint. The nearest CNDDB occurrence is 7 miles east of the Project Footprint.
Fish				
Delta Smelt Hypomesus transpacificus	FT	SE	Spawns in tidally influenced channel habitats; rears seasonally in inundated floodplains, tidal marsh, and the Delta.	Unlikely to occur. No suitable habitat exists within the Project Footprint.
Hardhead Mylopharodon conocephalus	–	SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage, and in the Russian River. Clear, deep pools with sand-gravel-boulder bottoms.	Unlikely to occur. No suitable habitat exists within the Project Footprint.

[1] Legal Status Definitions
Federal
FE - Listed as endangered under ESA
FT - Listed as threatened under ESA
FC - Candidate for listing under ESA
State
SE - Listed as endangered under CESA
ST - Listed as threatened under CESA
SSC - California Species of Special Concern
FP - Fully protected species – may not be taken or possessed without a permit from the Fish and Game Commission

[2] Legal Status Definitions
Known to occur—Species, or evidence of its presence, was documented in the Project Footprint and suitable habitat is present.
Could occur—Suitable habitat occurs in the Project Footprint and there may be nearby documented occurrences; however, there are little to no other indicators that the species might be present.
Unlikely to occur—Species is not likely to occur due to low-quality and/or disturbed habitat, the lack of suitable habitat, or because the Project Footprint is outside of the species known distribution range and does not provide habitat features that would provide all of the species life history requirements.

Sources: CNDDB 2020, USFWS 2020, data compiled by AECOM in 2020