SPTC Trail Corridor Latrobe Road to Iron Point Road

Design Refinement Report



Prepared for: Sacramento Placerville Transportation Corridor Joint Powers Authority

April 10, 2015



Table of Contents

1.0	INTRODUCTION	. 1
1.1	Overview	1
1.2	Site Location and Description	2
2.0	BIOLOGICAL RESOURCES	. 4
2.1	Biological Resources Assessment (BRA)	4
2.2	Wetland Delineation	5
2.3	Summary of Avoidance and Mitigation Measures	5
3.0	CULTURAL RESOURCES	. 7
4.0	PROJECT DESIGN REFINEMENT	9
4.1	Trail Alignment and Widths	9
4.2	Wetland/Creek Crossings	10
4.3	Track Crossings and Signage	15

List of Tables

Table 1 — Biological Communities by Acreages	4
Table 2 — Waters of the U.S: Acreage According to Feature	5
Table 3 — Trail Alignment	9
Table 4 — Wetland/Creek Crossings	12

List of Figures

Figure 1 — Site and Vicinity	3
Figure 2 — Unpaved Trail Section	10
Figure 3 — Puncheon bridge	11
Figure 4 — Multi-plate Structure	11
Figure 5 — Prefabricated Steel Bridge with Concrete Deck	12
Figure 6 — Mile 116	16
Figure 7 — Mile 117	17
Figure 8 — Mile 118	18
Figure 9 — Mile 119	19
Figure 10 — Mile 120	20
Figure 11 — Mile 121	21
Figure 12 — Mile 122	22
Figure 13 — Mile 123	23
Figure 14 — Mile 124	1
Figure 15 — Mile 125	2
Figure 16 — Mile 126	3

1.0 INTRODUCTION

1.1 Overview

This Design Refinement Report summarizes the results of environmental and trail design studies conducted on the SPTC Rail Corridor between the terminus of the existing paved trail at Iron Point Road in the City of Folsom just north of the Highway 50 underpass and the rail crossing at Latrobe Road in El Dorado County. Studies were conducted from December 2014 through March 2015 and included the following:

- Biological Resources Assessment,
- Wetland delineation,
- Cultural inventory and evaluation, and
- Refinement of project conceptual designs.

The Biological Resources Assessment examined biological communities within the corridor and assessed the potential for the occurrence of special-status plants and animals. Special-status species are those listed as by the U.S. Fish and Wildlife Service (FWS), the California Department of Fish and Wildlife (CDFW), or California Native Plant Society (CNPS) as those of relatively limited distribution that may require specialized habitat conditions. These species are afforded protection under several environmental regulations such as the California and Federal Endangered Species Acts (ESAs) and the Migratory Bird Treaty Act.

The wetland delineation consisted of a review of current and historic aerial photographs, topographic maps, the National Wetlands Inventory (NWI), and NRCS soil survey data, followed by field surveys using GPS to identify features meeting Army Corps of Engineers' 1987 three-parameter criteria for wetlands (vegetation, hydrology, and soils).

The Cultural inventory and evaluation identified and assessed cultural resources within the corridor. This study included records searches, contacts with Native Americans, literature review/historical research, consultation with others knowledgeable on cultural and historical resources within the area, and a field survey of the corridor.

After the initial studies were completed, the project landscape architect walked the El Dorado County portion of the corridor with representatives from the county, SPTC Joint Powers Authority (JPA), Folsom Auburn Trail Riders Action Coalition (FATRAC), El Dorado County Transportation Commission, and other stakeholders and the Sacramento County portion of the corridor with members of Sacramento County, the City of Folsom, FATRAC, El Dorado County Transportation Commission, and other interested stakeholders. The purpose of the trail walk was to identify measures to reduce or eliminate impacts to existing resources and refine design factors such as trail alignment; number, locations and types of wetland/creek crossings; and locations for trail/railroad crossings and signage.

1.2 Site Location and Description

The ± 124 -acre Study Area is located within the SPTC from mile post 116.4, within the Folsom City limits at Iron Point Road and Placerville Road in Sacramento County, southeast to mile post 126.2 near the community of Latrobe, in El Dorado County. The Study Area is located within Township 9 North, Range 8 East, Sections 8, 9, 15, 16, 22, 23, 25, 26, and 36, Township 9 North, Range 9 East, Sections 29, 30, 31, and 32, and Township 8 North, Range 9 East, Sections 4, 5, and 9 of the *Clarksville*, *Folsom SE*, and *Latrobe* quadrangles. The approximate location of the Study Area is 38° 35' 58.8" North, 121° 2' 30.0" West (see **Figure 1**).

The Study Area is historically a Southern Pacific railroad easement that ranges from 66 to 200 feet in width. The Study Area is comprised primarily of disturbed/developed areas and disturbed non-native annual grassland. Oak woodland surrounds the southern half of the Study Area. A number of drainages and seasonal wetlands occur within the Study Area.

The general topography of the Study Area has been largely influenced by the construction of the railroad. The immediate area paralleling the railroad tracks appears relatively flat, but maintains a three percent grade or less through its length. The rest of the corridor varies widely from gently sloping to steeply sloping. Elevations range from 423 feet above mean sea level (MSL) in the northern portion of the Study Area to 780 feet above MSL in the southern portion of the Study Area.

The Study Area includes three main perennial drainages: Carson Creek, Latrobe Creek, and Deer Creek. Carson Creek and Latrobe Creek are tributary to Deer Creek, which flows into the Cosumnes River, a navigable waters of the U.S. The Cosumnes River is tributary to the Sacramento River. Many intermittent and ephemeral drainages bisect the Study Area. These drainages generally begin east of the Study Area as headwaters in the foothills, and flow west to the main drainages.



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2.0 BIOLOGICAL RESOURCES

2.1 Biological Resources Assessment (BRA)

Foothill Associates' biologists conducted biological surveys in accordance CDFW's (2009) protocol plant surveys and wetland delineations in December 2014, and January, 2015. The surveys consisted of botanical inventories, evaluating biological communities, mapping wetlands and waterways, and documenting potential habitat for special-status species with the potential to occur within the Study Area. The biological communities occurring within the Study Area are listed in **Table 1**.

Biological Community	Acreage ¹
Disturbed/Developed	30.95
Disturbed Non-Native Annual Grassland	67.02
Oak Woodland	23.33
Riparian	0.05
Seasonal Wetland	0.91
Perennial Drainage	0.64
Intermittent Drainage	0.17
Ephemeral Drainage	0.64
Total	123.71

 Table 1 — Biological Communities by Acreages

¹GIS calculations may not reflect exact acreage of Study Area due to rounding.

Biological constraints within the Study Area include known or potential habitat for:

- Special-status plants including Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Brandegee's clarkia (*Clarkia biloba* ssp. *biloba*), dwarf downingia (*Downingia pusilla*), Jepson's woolly sunflower (*Eriophyllum jepsonii*), and Tuolumne buttoncelery (*Eryngium pinnatisectum*);
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*);
- California red-legged frog (*Rana draytonii*);
- Western pond turtle (*Emys marmorata*);
- Western spadefoot toad (*Spea hammondii*);
- Burrowing owl (Athene cunicularia);
- Swainson's hawk (*Buteo swainsoni*);
- Migratory birds and raptors including golden eagle (*Aquila chrysaetos*); white-tailed kite (*Elanus leucurus*), tricolored blackbird (*Agelaius tricolor*), and grasshopper sparrow (*Ammodramus savannarum*);
- American badger (*Taxidea taxus*);

- Special-status bat species; and
- Sensitive habitats (potentially jurisdictional waters of the U.S., oak woodland, and native oak trees.)

2.2 Wetland Delineation

The wetland delineation was conducted by Foothill Associates' biologists utilizing the Corps' 1987 three-parameter (vegetation, hydrology, and soils) methodology as outlined in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and Arid West Regional Supplement to delineate jurisdictional waters of the U.S., focusing specifically on jurisdictional wetlands. Where differences in the two documents occur, the Arid West Supplement takes precedence over the Corps Manual.

A review of current and historic aerial photographs, topographic maps, the National Wetland Inventory (NWI), and soil survey data was conducted before delineating the Study Area. Foothill Associates' biologists conducted delineations and biological surveys on December 18, 19, 23, and 29, 2014. During the surveys, Foothill Associates' biologists visually inspected the entire Study Area to delineate potential waters of the U.S. Soil, vegetative, and hydrological data were recorded.

Potentially jurisdictional wetlands identified in the Study Area include seasonal wetland, perennial drainage, intermittent drainage, and ephemeral drainage. **Table 2** provides acreages per class and summarizes the total acreage of estimated potential wetlands and waters of the U.S. within the Study Area.

Classification	Total Acreage
Depressional Wetlands	
Seasonal Wetland	0.763
Riverine Wetlands	
Seasonal Wetland	0.144
Perennial Drainage	0.643
Other Waters of the U.S.	
Ephemeral Drainage	0.635
Intermittent Drainage	0.168
Total	2.353

 Table 2 — Waters of the U.S: Acreage According to Feature

2.3 Summary of Avoidance and Mitigation Measures

The following is a summary of the avoidance and mitigation measures identified for biological resources and wetlands.

- If wetlands or riparian areas will be impacted by the Proposed Project, apply for appropriate permits from the Corps, the RWQCB, and the CDFW;
- Conduct two botanical surveys for special-status plants (one in March or April and one in June through August);
- Construct the project a minimum of 20 feet from the elderberry shrubs, to avoid habitat for the potentially occurring Valley elderberry longhorn beetle;
- Conduct two protocol level pre-construction surveys during the recommended survey periods for Swainson's hawk;
- Purchase mitigation credits for the removal of Swainson's hawk foraging habitat if impacts to the disturbed non-native annual grassland exceed 5 acres;
- Conduct clearing and tree and shrub removal operations between September 1 and February 14 to minimize potential impacts to nesting birds;
- If construction begins or trees are anticipated for removal during the nesting season (February 15 August 31), conduct a pre-construction survey for active bird nests within the Study Area;
- Within 14 days prior to the initiation of construction activities, conduct a preconstruction survey for CRLF, western pond turtle, western spadefoot toad, American badger, and special-status bat species;
- Coordinate with the CDFW to prepare an Avoidance and Minimization Plan for burrowing owl; and
- Prepare an Oak Woodland Canopy Assessment for oak woodland habitat within El Dorado County, in accordance with Option A under El Dorado County General Plan Policy 7.4.4.4, if disturbance thresholds are met.

3.0 CULTURAL RESOURCES

Cultural resources identified within the corridor include the railroad, 91 railroad-related features, and two loci (sites). The most common features are culverts. Locus A is the site of the historic White Rock Station. Locus B is the site of Latrobe Station. The field team also documented 21 non-railroad cultural resources including rock fence remnants, road and ditch remnants, among other minor historic resources. No Native American archaeological resources of traditional cultural properties were identified. No historic districts were identified.

An assessment of California Register of Historical Resources and National Register of Historic Places eligibility resulted in the identification of two historical resources/historic properties: The 10.2 mile long railroad segment is eligible for the California Register under criterion 1 and National Register under criterion A. In addition, loci A and B of the railroad segment are eligible for the California Register under criterion 4 and National Register under criterion D. The segment of White Rock Road that crosses the railroad easement is eligible for the California Register under criterion 1 and National Register under criterion 1 and

As a result of these findings, the following measures are recommended:

- 1. The proposed trail and trail construction shall avoid the archaeologically sensitive areas at Locus A (White Rock Station site) and Locus B (Latrobe Station site) of the Sacramento and Placerville Railroad (P-34-00455/P-9-4794).
- 2. Construction of the proposed trail crossing of White Rock Road shall avoid any excavation that would disturb, damage or destroy the concrete pavement of the old Lincoln Highway that may underlie the existing asphalt.
- 3. An archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards shall monitor trail construction at the railroad's Locus A and Locus B, and any trail construction-related excavation into White Rock Road.
- 4. If any prehistoric or historic artifacts, or other indications of cultural deposits such as historic privy pits or trash deposits are found once ground-disturbing activities are underway, the find(s) shall be immediately evaluated by an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards. If the find is determined to be a historic property, historical resource, or unique archaeological resource, contingency funding and a time allotment to allow for implementation of avoidance measures or appropriate mitigation shall be made available (CEQA Guidelines § 15064.5). Work may continue on other parts of the project site while historical or unique archaeological resource mitigation takes place (Public Resources Code §21 083 and §21 087). If federal regulations are triggered, then appropriate evaluation, finding of effect, memoranda of agreement, treatment plan and other appropriate measures must be implemented in consultation with the lead federal agency.

5. In the event of the accidental discovery or recognition of any human remains, there shall be no further excavation or disturbance of the find or any nearby area reasonably suspected to overlie adjacent human remains, until compliance with the provisions of §I 5064.5(e)(I) and (2) of the CEQA Guidelines has occurred.

4.1 Trail Alignment and Widths

The recommended alignment generally follows the existing informal trail, except in several locations where a routing change is recommended to avoid constraints. This alignment has been identified to minimize track crossings and reduce wetland and habitat impacts as well as the cost and complexity of wetland/creek crossings. The recommended trail alignment is shown in **Figure 6** through **Figure 16** and summarized in **Table 3**:

Side	Western Milepost	Eastern Milepost
North	116.0 (Iron Point Road)	116.63
South	116.63	121.54
North	121.54	122.63
South	122.63	123.15
North	123.15	123.57
South	123.57	126.19 (Latrobe Road)

Table 3 — Trail .	Alignment
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The unpaved trail should be compacted earth or decomposed granite, uniformly graded and free of obstructions. It should generally range from three to four feet in width with two to three feet clear of woody vegetation on either side for visibility and to avoid tripping hazards. Given the conditions, the trail is not expected to be ADA accessible; however, slopes should generally be as gradual as possible within the constraints of existing topography to cater to the widest range of abilities. The trail should be useable by mountain bikers, pedestrians, and equestrians. In areas with severe topographic slopes or spatial constraints, such as might be required for wetland or native tree impact avoidance, width can be reduced to two feet. Retaining walls will likely be needed in several of these locations to avoid impacts and/or remain within the right-of-way. In broad, flat areas with few wetlands or trees, width can be increased to six feet, if desired, to better accommodate two-way traffic (**Figure 2**).



Figure 2 — Unpaved Trail Section

4.2 Wetland/Creek Crossings

Crossing Types

Wetland and creek crossings range in width from under two feet to over one hundred feet. Small drainages can be crossed via culverts or puncheons (rail-less bridges constructed of pressure treated timber, see **Figure 3**). Larger drainages will require multi-plate or conspan structures or full bridges (**Figure 4** and **Figure 5**). Multi-plate may be preferable to con-span due to lighter weight and transportability. Structures not adjacent to roadways could be transported to the needed locations by railcar. Crossings with vertical drops of greater than 30 inches require railings with vertical picket spacing not less than 4 inches.

Shared-Use Bridges

Where large bridges are required to cross the perennial drainages of Deer Creek, Carson Creek and Latrobe Creek, the long-term solution is to install these structures for use by users of the unpaved trail and a future paved trail. Such bridges are expensive, however, so for the short-term, trail users will use the existing railroad bridges to cross these creeks. Warning signage must be posted on either end of the bridges for both trail and rail users, as well as at locations sufficiently distant so that rail operators can stop the trains prior to entering the bridge area. Rail operators should develop procedures that ensure safety of pedestrian bridge users, such as deploying flaggers at either end of the bridge prior to entering the crossing.



Figure 3 — Puncheon bridge from USDA Wetland Trail Design and Construction, 2007



Figure 4 — Multi-plate Structure, photograph from www.fhwa.dot.gov



Figure 5 — Prefabricated Steel Bridge with Concrete Deck photograph by Foothill Associates

To avoid wetland impacts, most crossings should be planned as free-spanning structures with footings located outside of the jurisdictional boundaries of the wetland; however, this will likely not be possible for all crossings. Wetland impacts will need permitting with the U.S. Army Corps of Engineers under Nationwide Permit 42, if impacts are limited to less than ½ acre of wetland and 300 linear feet of stream bed. Riparian and stream bed impacts will need permitting with CDFW under a Streambed Alteration Agreement. See **Table 4** for a full list of crossings, including widths and possible types.

ID	NOTES
1	Use existing culvert (requires safety rail) OR install new 24" culvert
2	Use existing culvert (requires safety rail) OR install new 3'-4' long multi-plate structure
3	Trail/rail crossing. Site of future road crossing (signage will be needed).
4	Install culvert OR puncheon bridge
5	Use existing 36" culvert
6	Site of future road crossing (signage will be needed).
7	Install 20' - 30' bridge to free-span wetland; determine width based on trail use
8	Install 12" culvert for drainage across trail. No wetland
9	Use existing 24" culvert. ~2.5' clear of 10' track safety zone
10	Install 12" culvert for drainage across trail. No wetland

 Table 4 — Wetland/Creek Crossings

ID	NOTES
11	Site of future road crossing (signage will be needed).
12	Install 20' bridge to free-span wetland; determine width based on trail use
13	Use existing culvert with wingwall & safety rail, OR install new 24" culvert
14	Install 12" culvert for drainage across trail. No wetland
15	Site of future road crossing (signage will be needed).
16	Install 20' bridge to free-span wetland; determine width based on trail use
17	Install 12" culvert for drainage across trail. No wetland
18	Install 24 - 36" culvert
19	Install 12" culvert for drainage across trail. No wetland
20	Install 6' long multi-plate structure to span wetland
21	Install 24 - 36" culvert
22	Use existing culvert with safety rail OR install new 36 - 48" multi-plate structure
23	Install 18 - 24" culvert
-	Stay to road-side of wetland #69
24	Install 18 - 24" culvert
-	Avoid impacts to wetlands 7 & 8. Route trail north of wetland 8 OR use road easement.
25	Install 24" culvert OR 36 - 48" multi-plate structure to free-span wetland
26	Install 18 - 24" culvert
27	Install 36" culvert OR multi-plate structure
28	Install 48" multi-plate structure
-	Skirt wetland 9 on uphill (track) side. Assume minor fill required in wetland
29	Install 18 - 24" culvert
30	Install 18" culvert
-	Carson Creek Crossing: route trail on south side up to bridge, both sides. Assume retaining wall will be required to avoid impacts to existing wetland east of bridge. Use existing RR bridge with safety signs & procedures. Long-term plan is for separate dedicated bike/ped bridge on south side.
31	Use existing crossing over wetland
32	Erosion washout, needs stabilization
33	Install 12" culvert
34	Install 12" culvert
35	Install 36" culvert OR multi-plate structure
36	Use existing culvert. Maintain 10' clear from centerline of RR tracks
37	Install 18" culvert
38	Install 5' multi-plate structure
39	Use existing RR tie bridge

ID	NOTES
40	Use existing culvert. Route trail between wetland and track safety zone. Assume retaining wall is needed to avoid impacts to wetland.
41	Install 24" culvert
42	Install10' long multi-plate structure OR free-span bridge and determine width based on trail use
43	Install 24" culvert to extend existing culvert
44	Install 24" culvert
45	Install 30" culvert with rock apron
46	Install 24" culvert with rock apron
47	Install 4' - 5' long multi-plate structure
48	Elevate trail next to tracks, outside track safety zone
49	Route trail between wetland and fence.
50	Install 24" culvert
51	Trail/rail crossing.
52	Install 12" culvert
53	Install 20' multi-plate structure
54	Route trail between wetland and track safety zone. May need retaining wall.
55	Install 12" culvert
56	Install 12" culvert
57	Deer Creek Crossing: Use existing RR bridge with safety signs & procedures. Long term plan: install new dedicated ped/bike bridge on north side.
58	Removed Duplicate of 57
59	Trail/rail crossing
60	Install 12" culvert
61	Route trail along fence line
62	Install 12" culvert
63	Topographic challenges. Narrow trail to 1 - 2' width as needed with safety signage. Maintain separation between trail and edge of embankment
64	Install 12" culvert
65	Install 30" culvert
66	Use existing RR bridge with safety signs & procedures. Long term plan: install new dedicated ped/bike bridge.
67	Use existing culvert
68	Install 18" culvert
69	Install 8 - 10' long con-span or multi-plate structure
70	Trail/rail crossing
71	Use existing culverts may need to extend. Will need embankment fill/grading

ID	NOTES
72	Use existing culverts. Will need embankment fill/grading
73	Install 30 - 36" culvert
74	Install 18" culvert
75	Install 18" culvert
76	Install 18" culvert
77	Install 18" culvert
78	Install 18" culvert
79	Install 18" culvert
80	Install 24" culvert with rock apron
81	Use existing culvert. May need retaining wall
-	Route trail between fence and wetland 36
82	Install 18 - 24" culvert
83	Use existing culvert
84	Install 18" culvert
85	Install 5' multi-plate structure
86	Install 12" culvert
87	Use existing culvert. May need retaining wall
88	Install 12" culvert
89	Install 5 - 10' multi-plate structure
90	Install culvert or multi-plate structure

4.3 Track Crossings and Signage

As can be seen in **Table 3**, the natural trail will cross the tracks five times in the project area. As with shared-use bridges, crossings should be adequately posted with warning signs for both pedestrians and railroad operators. Excursion railroad operators should develop procedures to ensure safety of pedestrians at trail/rail crossings. These may include use of safety personnel deployed at crossings as the train approaches; slowing or stopping prior to crossing the trail; or other measures deemed necessary. Signage for railroad operators should be posted in advance of the crossings in both directions warning of the upcoming crossing, as well as at the crossing itself. Signage warning pedestrians, cyclists, and other trail users to look for oncoming trains prior to entering the crossing area should be posted at all crossings. Additional signage warning trail users that this is an active rail line and to stay clear of the tracks should be posted periodically when the trail is within 20 feet of the rails and a clear (unobstructed) path occurs between the trail and the rails, as well as periodically along the tracks. All signage should correspond to the El Dorado County Trail Signage Standard so that there is graphic consistency for trail users along this entire 10-mile segment. Crossings are shown in Figure 6 through Figure **16**.















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