3.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION STRATEGIES

INTRODUCTION

This purpose of this chapter is to describe existing environmental conditions in the areas that would be affected by the No Build Alternative, ~~and~~ the Build Alternative, and the Preferred Alternative; evaluate potential environmental impacts associated with the No Build Alternative and with constructing and operating the Build Alternative and the Preferred Alternative, and present potential program-level mitigation strategies to avoid or reduce those impacts.

The analysis presented in this chapter addresses the general effects of a program of actions that would make up the proposed Coast Corridor Improvements project. This chapter describes the general differences in potential environmental consequences between the No Build Alternative, the Build Alternative and the Preferred Alternative. The description of environmental issues among various components will help to guide possible future design refinements and/or project-level studies.

This chapter ~~will~~ provides the technical environmental analysis for each resource topic. Each section in this chapter ~~will~~ discusses the existing conditions of the study area, with regard to the resource topic, and how each alternative would potentially affect the environment.

Much of this analysis was facilitated through the use of geographic information system (GIS) spatial data. **Appendix D** (and **Appendix 1**) is a compilation of the data gathered for this analysis.

Chapter 5.0, Comments and Coordination and Appendix 2, include the comments on the Draft Program EIS/EIR and provides responses to each comment.

HOW THIS CHAPTER IS ORGANIZED

This chapter is divided into several sections, roughly grouped by resource topic. The resource topic groups are as follows

- Transportation and related topics (air quality, noise and vibration, energy)
- Human Environment (land use and community impacts, visual resources, agricultural resources, public utilities and services, hazardous materials/wastes)
- Cultural Resources (historic architecture, archaeological resources, paleontological resources)
- Natural Environment (geology and soils, mineral resources, hydrology and water resources, and biological resources)

Each resource topic discussion ~~will~~ contains the following information:

- Regulatory Requirements
  - An overview of relevant federal, state, and local policies within the study area.
- Methods of Evaluation
  - An identification of the proposed study area relative to the resource, approaches taken to evaluate each resource topic, and potential issues that may occur.
- Affected Environment
  - Background information and discussion of the existing conditions within the study area defined for the resource topic analysis.
- Environmental Consequences
  - A comparison of the existing conditions of the study area to ~~the Build Alternative~~ action alternatives and No Build Alternative. For each resource topic, the environmental consequences section analyzes potential effects that might occur if any of the Build Alternative or Preferred Alternative components ~~improvements~~ are implemented. The Council on Environmental Quality (CEQ) section 1508.8 defines “effects” as the following:

    Direct effects: are caused by the action and occur at the same time and place. Such direct effects, which may potentially result from construction and/or operation of the ~~Build Alternative improvements~~ action alternative components, are discussed for each resource topic.

Indirect effects: are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Such indirect effects are discussed, as necessary, for the resource topics with pertinent indirect effects.

- Avoidance, Minimization, and Mitigation Strategies
  - These sections will outline potential measures to fully avoid, minimize the effects of, or compensate for substantial environmental impacts. The discussion ~~will~~ includes design and construction practices that would be developed into project-specific mitigation measures to avoid or minimize impacts as project-level plans are advanced in subsequent stages.
- Subsequent Analysis
  - This discussion ~~will~~ defines studies that would be required for project-level environmental documentation in the future.

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3.1 TRAFFIC AND TRAVEL

This section describes existing traffic and circulation conditions in the project corridor and identifies the potential transportation impacts related to the No Build and the ~~Build~~ ~~Alternative~~ action alternatives.

This section also describes the potential traffic impacts associated with the Preferred Alternative in comparison with the No Build and Build Alternatives. **Chapter 5.0, Comments and Coordination**, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. Several of the City of King's comments relate to **Section 3.1** of the Draft Program EIS/EIR. Of these, only comment A-3.11 requires a change to the text of the Affected Environment section. Other comments from the City of King related to transportation are addressed in this section in the analysis of the Preferred Alternative and in **Section 3.15, Cumulative Impacts Analysis**.

3.1.1 REGULATORY REQUIREMENTS

3.1.1.1 Federal

Federal Railroad Administration

The Federal Railroad Administration (FRA) was created by the Department of Transportation Act of 1966, and is concerned with intermodal transportation. FRA issues, implements, and enforces safety regulations, selects investments to develop the rail network across the country, and conducts research and technology development.

The Rail Passenger Service Act of 1970 relieved private rail carriers of their obligation to provide passenger rail service and led to the creation of Amtrak in 1971.

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) created new railroad investment programs and reauthorized Amtrak for five years.

The FRA's Office of Railroad Policy and Development provides financial assistance, quantitative analysis, environmental research, project reviews, research and development, technical assistance, and supports development of intercity passenger rail policy.

3.1.1.2 State

Caltrans Division of Rail

The Caltrans DOR manages and coordinates statewide intercity passenger rail service (Amtrak) that helps to improve the state's air quality and reduce highway congestion and fuel consumption. Caltrans contracts with National Railroad Passenger Corporation (Amtrak) to provide daily operation and maintenance of Amtrak California service.

3.1.1.3 Local

Monterey County General Plan

The General Plan for Monterey County includes goals aimed at optimizing the use of the County's transportation facilities, achieving acceptable level of service for County roads and intersections, promoting viable transportation alternatives, and encouraging a rail system that offers efficient and economical transport of people and commodities.

City of Salinas General Plan

The Salinas General Plan contains goals related to providing and maintaining a circulation system that meets the current and future needs of the community, working with other local and regional agencies to develop regional transit and transportation systems, and promoting an efficient public transportation network.

City of Soledad General Plan

The Soledad General Plan outlines goals aimed at providing a safe and efficient circulation network to meet the present and future needs of the city, encouraging the use of alternate forms of transportation, and specifically calling for coordination with appropriate agencies to establish a train station in the city.

City of King (King City) General Plan

The city's General Plan contains goals and policies calling to provide an integrated transportation system that adequately serves residential, commercial, industrial, and recreational uses, as well as public facilities and agricultural properties. Goals also pertain to providing a public street and highway system that accommodates existing and projected traffic volumes within the city. Additionally, as described in **Section 2.0, Alternatives**, since publication of the Draft EIS/EIR the City of King has adopted draft revised plans for the Multi-Modal Transportation Center – Conceptual Design ((MMTC) 2014).

San Luis Obispo County General Plan

The San Luis Obispo County General Plan outlines goal and objectives related to transportation and circulation including integrating land use and transportation planning so that necessary transportation facilities and services can be provided to accommodate urban and rural development, coordinating the transportation system between different travel modes, and designing a transportation system that provides for safe travel within attainable and feasible economic and technical means.

City of El Paso de Robles (Paso Robles) General Plan

The Paso Robles General Plan contains goals and policies to establish a safe, balanced, efficient, and multimodal circulation system, focusing on the mobility of people, and preserving the city's small town character and quality of life, as well as to promote regional, interstate, and intrastate rail service.

City of San Luis Obispo General Plan

Transportation-related goals outlined in the San Luis Obispo General Plan include encouraging transit development, expansion, coordination, and aggressive marketing throughout San Luis Obispo County to serve a broader range of local and regional transportation needs including commuter service. Additionally, policies supporting increased availability of rail service for travel within the county, state, and among states are encouraged.

3.1.2 METHODS OF EVALUATION

The ~~analysis herein~~ methodology used to identify potential transportation impacts was based in part on Appendix G of the CEQA Guidelines and FRA's Environmental Procedures.

Construction-Period Effects

To assess potential road traffic and transportation environmental impacts, construction-related roadway traffic impacts resulting from implementation of the various ~~improvements~~ components were analyzed qualitatively.

Effects on Rail Operations

To determine potential environmental impacts related to railway transportation and travel, ridership projections and operations modeling (RailOPS) from the Service

Development Plan (SDP) were used.[1] The SDP modeled multiple scenarios for three planning horizon years: 2012 (Existing Year), 2020, and 2040. The modeling includes all rail activity in the Corridor, including freight, intercity passenger rail and commuter rail. For the year 2020, the SDP considered whether adding projected passenger and freight volumes and any physical components ~~improvements~~ to the Year 2020 Base Case network could result in achievement of the on-time performance (OTP) goal of 87 percent for all passenger train services.

Effects on Local Roadways

Roadway impacts resulting from operation of the various physical components ~~improvements~~ and new service were qualitatively assessed. The analysis included a review of aerial mapping to determine if any new at-grade crossings would be created. Local traffic impacts resulting from new station areas were assessed qualitatively based on projected ridership and conditions of local roadways providing access to the stations.

3.1.3 AFFECTED ENVIRONMENT

3.1.3.1 Existing Freight Rail

Freight rail operations in California facilitate the State's participation in both domestic and international markets. The freight railroad system in California is an expansive network comprised of Class 1 railroads,[2] short line railroads, and switching yards and terminals covering over 5,000 miles across the State. Freight rail volume within the project area is relatively low as the Coast Corridor is considered a "secondary" or "relief" line to the busier Central Valley line to the east.

The UPRR owns the railroad and operates freight trains along the Coast Corridor. The 2013 Coast Corridor SDP reports that 2 daily long-haul[3] freight trains run daily between Salinas and San Luis Obispo. Freight service in the Corridor does not follow a particular schedule, and service throughout the network is not uniform. Train length, railcar type, and number of locomotives vary depending on the type(s) of cargo in transit and distance to be traveled.

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[1] Caltrans Division of Rail, 2013b.

[2] Class 1 railroads are regulated by the Surface Transportation Board and are subject to the Uniform System of Accounts (49CFR1201) and are defined as carriers with annual carrier operating revenues of $433.2 million or more (2011).

[3] Long-haul refers to freight trains traveling across the entire Corridor or a significant portion of it.

Outside the Salinas-San Luis Obispo portion being studied here, local freight trains also operate over shorter (less than 50 mile) segments of the Coast Corridor between Salinas and San Jose and between Oxnard and Los Angeles.[4,5]

3.1.3.2 Existing Passenger Rail

Amtrak operates the Coast Starlight passenger train service, which runs between Seattle and Los Angeles, and carried just over 454,000 passengers in 2012.[6] The Coast Starlight runs through the project area on the Coast Corridor. This long-haul passenger train is intended to serve the needs of interstate leisure/recreational travelers. With limited service and relatively few stops between the San Francisco Bay Area and Los Angeles, the Coast Starlight does not provide a widely practical service for intrastate commuters (refer to **Table 3.1-4** for a station arrival schedule).

As of 2014, the Coast Starlight provides one daily round trip between Seattle and Los Angeles. The Coast Starlight makes stops at three stations along the study corridor: Salinas, Paso Robles, and San Luis Obispo. **Table 3.1-1** shows year 2012 ridership (boardings and alightings) for each station, as well as average daily ridership. It should be noted that San Luis Obispo is the northern terminus of Amtrak's Pacific Surfliner route, which provides twice-daily plus weekend service to Los Angeles Union Station and continuing service to San Diego. Ridership reported in **Table 3.1-1** for San Luis Obispo thus comprises both Coast Starlight and Pacific Surfliner passengers.

Table 3.1-1 Coast Corridor Passenger Station Ridership, 2012

Station	Location	Annual Riders	Average Riders per Day
Salinas	11 Station Place	19,879	54.5
Paso Robles	800 Pine Street	11,728	32.1
San Luis Obispo[a]	1011 Railroad Avenue	108,439[a]	297.1[a]
Total		**140,046**	**383.7**

a Ridership includes Pacific Surfliner and Coast Starlight passengers
Source: Amtrak, 2012a

[4] County of San Luis Obispo, 2013, p. 4.12-8

[5] Refer to Section 3.16, Cumulative Impacts, for a discussion of future freight operations on the corridor.

[6] Amtrak, 2012b

Track capacity constraints and shared-track conflicts exist between passenger and freight trains. According to the SDP, over 90 percent of the Corridor has only single-track operations resulting in constrained passing capabilities. As a result, long freight trains must be given priority over passenger trains when the two meet because most existing sidings are not long enough to accommodate the typically longer length of freight trains.[7] Additionally, all trains, but particularly passenger trains, can "stack" at either end of single-track sections, resulting in delays and thus reducing the attractiveness of passenger rail as a travel mode choice.

3.1.3.3 Adjacent Roadways

The roadway network in the vicinity of the Corridor is comprised of a US highway, state routes, country routes, and local arterial streets. The majority of the Corridor between Salinas and San Luis Obispo runs parallel to US Highway 101 (US 101) and the Salinas River. A general overview of the regional transportation network for this section of the Corridor is provided below.

US 101

US 101 connects northwestern Washington, Oregon, and California, terminating in Los Angeles. In central California, US 101 is primarily oriented in a north-south direction, and transitions to a rough east-west orientation between Santa Barbara and Los Angeles. It is used most heavily in urban areas (between San Francisco and San Jose and between Santa Barbara and Los Angeles) where it serves as a primary travel corridor. US 101 also provides secondary highway access between San Francisco and Los Angeles (the primary route being Interstate 5). **Table 3.1-2** shows US 101 traffic count data at relevant locations between Salinas and San Luis Obispo.

US 101 roughly parallels the Coast Corridor from Salinas to the Cuesta Grade north of San Luis Obispo. In this area, the railroad tracks are as close as immediately adjacent to the US 101 right of way and as distant as 2-3 miles away. From Salinas to Soledad, US 101 is to the immediate west of the Coast Corridor. At Soledad, the tracks pass underneath US 101. From Soledad south to the Cuesta Grade, US 101 is to the east of the Coast Corridor. North of the peak of the Cuesta Grade, US 101 overpasses the Coast Corridor as the railroad transitions to the west of the freeway.

[7] Caltrans Division of Rail, 2013b, p. 4-2

Table 3.1-2 Traffic and Vehicle Data for US 101 (2012)

Region	Location	Average Daily Traffic Volume	Peak Hour Vehicle Trips	Peak Month Vehicle Trips
Salinas	Junction Route 183	73,900	6,700	82,000
	East Market Street	73,900	6,700	82,000
Soledad	North Soledad	38,200	4,250	47,000
King City	First Street	16,500	1,600	20,200
Paso Robles	13th Street	33,300	3,300	36,000
Cuesta Grade	Junction Route 58 East, Santa Margarita	43,800	4,800	47,000
San Luis Obispo	California Blvd	47,400	4,700	52,000
	Junction Route 1 North	60,300	5,900	68,000
	Junction Route 227	67,100	6,700	72,000

Source: Caltrans Traffic Operations Division, 2013

Other Roads

Local circulation in the vicinity of the Coast Corridor is provided by several local roads that parallel and traverse the railway. In Monterey County these roads are primarily two lane rural roads. The railway also crosses several driveways, and other private and agricultural unpaved roads along this portion of the alignment. Within cities and near station areas much of the travel is provided by paved arterial public roadways. In San Luis Obispo County much of the circulation is provided by paved city streets as agricultural uses decline in this portion of the rail corridor. Near Santa Margarita, the railroad crosses under US 101 into the Cuesta Grade. Through the grade, the railroad diverges from US 101 and travels through several tunnels in the mountains before descending into the City of San Luis Obispo.

At-Grade Crossings

As noted in **Chapter 2.0**, **Alternatives,** the existing railroad crosses a number of existing local roads at-grade. As shown in the **Table 3.1-3**, the existing railway crosses public roads in about 36 locations along the Corridor between Salinas and San Luis Obispo. Through Monterey County there are 16 paved, public road at-grade crossings, and there are 20 in San Luis Obispo County. A spectrum of safety provisions are in place at these crossings, ranging from passive warning devices, active warning devices, crossbucks (x-shaped signs), pavement markings, and flashing lights and gates.

The railway also crosses several driveways, and other private and agricultural unpaved roads along the alignment. Safety provisions at these locations are typically minimal, consisting mainly of crossbucks and pavement markings, although many such private crossings are entirely unsigned.

Table 3.1-3 Summary of Existing Paved Public Road At-Grade Crossings

Monterey County	San Luis Obispo County
John Street, Salinas	14th Street, San Miguel
Harkins Road, Salinas	11th Street, San Miguel
Somavia Road, between Salinas and Chualar	Wellsona Road, Paso Robles
Main Street, Chualar	21st Street, Paso Robles
Foletta Road, Gonzales	16th Street, Paso Robles
Katherine Street, Gonzales	13th Street, Paso Robles
Gonzales River Road, Gonzales	12th Street, Paso Robles
Lanini Road, Gonzales	10th Street, Paso Robles
Elm Avenue/G16, Greenfield	Marquita Avenue, Templeton
Spreckels Road, north of King City	Phillips Road, Templeton
East San Antonio Drive, King City	Chico Road, Atascadero
~~Lyons Street~~ Bitterwater Road, King City	Curbaril Avenue, Atascadero
East Pearl Street, King City	Halcon Road, Atascadero
Lonoak Road, King City	Santa Clara Road, Atascadero
Wildhorse Road, south of King City	Asuncion Road, Atascadero

Monterey County	San Luis Obispo County
Hare Canyon Road, south of Bradley	State Route 58/Estrada Avenue, Santa Margarita
	Encina Avenue, Santa Margarita
	Wilhelmina Avenue, Santa Margarita
	Foothill Boulevard, San Luis Obispo
	Marsh Street, San Luis Obispo

Source: Circlepoint, 2013

Station Areas

Salinas

The Salinas train station is located at 11 Station Place, 1 block north of Market Street. The station has a ticket office, enclosed waiting room, payphone, and restrooms. Currently, the station is served by Coast Starlight trains; in 2012, average annual passenger boardings and alightings in Salinas was 8,760, which translates to 54 average daily riders.[8] Amtrak Thruway buses provide connections at the Salinas train station to the Coast Starlight, Capitol Corridor and Pacific Surfliner Routes, as well as to other intermediate destinations.

Automobile access to the station is primarily through two major arterial roadways - West Market Street/State Route 183 (SR 183) and North Main Street/SR 183. West Market Street/SR 183 is a two-way four lane road that travels east/west through central Salinas. North Main Street is oriented in the north to south direction and starts in North Salinas. North Main Street intersects with US 101 at the north of the city and in the center as a four-lane road, then splits off into a couplet of two one-way two-lane roads under the railway until it intersects with West Market Street. From there, it splits into two one-way, three-lane arterials, northbound Monterey Street and southbound Salinas Street. Several two-lane residential collector streets terminate at West Market and North Main Streets. The Salinas General Plan (2002) reports that North Main Street operates at an unacceptable level of service (LOS)[9] E

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[8] Amtrak, 2012a

[9] LOS is a qualitative measure of traffic levels. LOS A-C indicates free-flowing traffic with little delay, LOD D-E indicates congestion, and LOS F indicates gridlock and severe delay.

between Market Street and Bernal Drive, adjacent to the train station. The stop-controlled station approach at Station Place and West Market Street operates at LOS F during peak commute hours.[10] Salinas strives to maintain LOS D or better for all intersections and roadways.

Bus service is provided at the Salinas Transit Center, about a quarter mile south of the train station (110 Salinas Street). Access is primarily provided by Salinas Street, Lincoln Avenue, Central Avenue, and West Gabilan Street, all major arterial roadways. Salinas Street is a three-lane one-way street traveling in the north-south direction. Lincoln Avenue, Central Avenue, and West Gabilan Street are all two-lane local roadways. Monterey-Salinas Transit (MST) buses serve the transit center, operating a number of routes throughout Monterey County. Greyhound, located just one block south of the Salinas Transit Center at 19 West Gabilan Street, offers service to major cities including San Francisco, Santa Barbara, and Los Angeles.

New train stations are planned in Pajaro/Watsonville and Castroville to expand the Capitol Corridor passenger rail service 68 miles from San Jose to Salinas. The service is initially expected to offer 2 daily round trips during commute periods, increasing to up to six round trips per day as demand warrants. Projected annual ridership is approximately 150,000 passengers. Capital improvements would include a train layover facility, intermodal bus facility, commuter parking in Salinas, and new platforms and parking facilities at Pajaro/Watsonville and Castroville.[11]

Soledad

At present, there is no passenger train station in Soledad, although passenger (as well as freight) trains pass through the railroad alignment that traverses the city. The Build Alternative includes the construction of a new passenger station in Soledad. The City of Soledad has adopted a Downtown Specific Plan, which anticipates Coast Daylight passenger service and includes a conceptual plan for a train station to be located on Front Street, at the end of Main Street. Both Front Street and Main Street are two-lane major arterial roadways in Soledad. The traffic report prepared for the City of Soledad Downtown Specific Plan (2012) reported that the Front Street and Main Street intersection operates at LOS B.

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[10] TAMC, 2006, p. 3
[11] TAMC, 2004

The station area comprises approximately 1.9 acres of the larger 200-acre Specific Plan area. The Specific Plan indicates that the station is to consist of a passenger boarding platform, ticket depot, bus pull outs, and pedestrian and bike connections. The station is envisioned as a multimodal facility, serving both train and bus passengers.[12]

King City

At present there is no passenger train station in King City, although both freight and passenger trains pass through the city on the existing alignment. The Build Alternative includes the construction of a new passenger station in King City. King City has adopted a conceptual plan for a new passenger station near the intersection of First Street and Broadway in downtown King City.

King City also included a conceptual plan for a multi-modal transportation center in two recent plans: the First Street Corridor Master Plan and the Historic Corridor Revitalization Plan. The conceptual plans included in the cited documents call for a 1,200-foot train platform alongside the existing tracks, a station building for ticket sales and restrooms, on-street bus pullout areas, and an off-street parking lot.[13] Primary entry to the station would be via First Street, a two-lane north-south arterial roadway that is also provides connection to US 101. The King City General Plan Final EIR reports that existing traffic operations for First Street and for the US 101/First Street Interchange are at acceptable levels.

Paso Robles

The Paso Robles Intermodal Station is located within the North County Transit Center near the south end of the city at 800 Pine Street. Access to the station is provided via 8th Street and Pine Street, both two lane local streets, which intersect at the station. 8th and 9th Streets are the primary linkages to Spring Street, a four lane arterial thoroughfare that is the main local north-south road on the west side of the city. Traffic volumes on these local streets are generally low. Intersections within the vicinity of the station, namely 13th Street at Paso Robles Street and Spring Street at 1st Street/Niblick Road, have been identified to operate at acceptable LOS levels.[14]

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[12] City of Soledad, 2012,Chapter 3

[13] City of King, 2013, pp. 154-156

[14] City of El Paso de Robles, 2006

The station consists of an enclosed waiting and ticketing area, a platform, restroom facilities, and parking/waiting areas. Several buses serve the station, including Amtrak Thruway, Greyhound, Paso Express, San Luis Obispo Regional Transportation Authority (SLORTA), and MST. Station ridership (boarding or alighting from Coast Starlight trains) averages about 11,680 annual riders (about 32 riders per day).[15]

Currently there are 10 short-term and 10 long-term parking spacing onsite, as well as taxi service and car rental opportunities nearby. Bicycle access is available along local roadways in the area. Vine Street, located three blocks east of Spring Street, is designated a Class II bikeway, and several Class II and III bikeways are proposed that would lead directly to the existing Amtrak station.[16]

San Luis Obispo

The Amtrak Station in San Luis Obispo is located at 1011 Railroad Avenue, along the southeast edge of the downtown area. It has an enclosed waiting area, ticket office, self-service ticket kiosk, and restrooms. Access to the station is primarily via Santa Barbara Avenue/Osos Street, Leff Street, and/or Santa Rosa Street. Santa Rosa Street and Osos Street both terminate at Railroad Avenue, providing direct access to the station and associated parking areas. The station provides 20 short-term and 30 long-term parking spaces.[17] Santa Barbara Street/Osos Street operates at an acceptable LOS between Broad Street and Higuera Street.[18]

The station is served by San Luis Obispo Transit, Greyhound, and Amtrak Thruway buses. Car rental and taxi services are available within one mile of the station, as well as an extensive network of Class I, II, and III bicycle routes.

3.1.4 ENVIRONMENTAL CONSEQUENCES

The programs of proposed physical components ~~improvements~~ and service changes comprising the ~~Build Alternative~~ action alternatives are specifically intended to expand passenger rail services from existing levels while accommodating existing and anticipated future freight operations. The components of the ~~Build Alternative~~ action alternatives would have varying potential to result in significant environmental effects related to transportation and travel.

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[15] Amtrak, 2012a

[16] City of El Paso de Robles, 2009, p. 24

[17] Amtrak, 2014

[18] City of San Luis Obispo, 2006, p. 2-53

3.1.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing operations and physical components, and assumes the perpetuation of existing freight and passenger service.

Rail Operations

Under the No Build Alternative, passenger rail operations between Salinas and San Luis Obispo would not change. Coast Starlight service would continue through the corridor. Pacific Surfliner service to Southern California would continue to originate/terminate in San Luis Obispo. Freight traffic would likely increase from 2 daily long-haul trains to 4 daily long-haul trains by year 2020, per the SDP.

The only physical component ~~improvement~~ expected under the No Build Alternative would be the installation of positive train control (PTC) along the Corridor, which would provide increased safety for freight and passenger trains. Therefore, there would be no substantial change to rail operations in the Corridor.

Roadway Operations

Under the No Build Alternative, the existing number of passenger trains traveling the Corridor would increase from existing passenger service. No construction would occur to construct proposed physical components ~~improvements~~. Given that rail service would not be expanded under the No Build Alternative, traffic and transit activity near existing stations would not be expected to increase substantially. The No Build Alternative would not create any new at-grade crossings.

3.1.4.2 Build Alternative

Operations Modeling

Chapter 9 of the SDP sets forth an estimated timetable for proposed Coast Daylight Service at both existing and proposed stations in the Salinas to San Luis Obispo project corridor. **Table 3.1-1** below summarizes the existing Starlight and projected Daylight station arrival times for the year 2020 and **Table 3.1-5** summarizes the existing Starlight and projected Daylight station arrival times for the year 2040.

Table 3.1-4 Existing and Projected Station Arrivals for 2020

Station	Southbound		Northbound	
	Starlight	**Daylight**	**Starlight**	**Daylight**
Salinas	11:48am	10:11am	6:47pm	3:31pm
Soledad	NA	10:52am	NA	3:05pm
King City	NA	11:17am	NA	2:40pm
Paso Robles	1:30pm	12:12pm	4:45pm	1:20pm
San Luis Obispo	3:20pm	1:49pm	3:43pm	12:07pm

Source: Caltrans Division of Rail, 2013b, Chapter 9.

Table 3.1-5 Existing and Projected Station Arrivals for 2040

Station	Southbound		Northbound	
	Starlight	**Daylight**	**Starlight**	**Daylight**
Salinas	11:48am	10:11am, 12:10am	6:17pm	3:31pm, 3:26am
Soledad	NA	10:52am, 12:51am	NA	3:05pm, 3:00am
King City	NA	11:17am, 1:11am	NA	2:40pm, 2:39am
Paso Robles	1:50pm	12:12pm, 2:06am	4:15pm	1:20pm, 1:35am
San Luis Obispo	3:20pm	1:49pm, 3:43am	3:13pm	12:07pm, 12:30am

Source: Caltrans Division of Rail, 2013b, Chapter 9.

As shown in the tables above, the proposed new Coast Daylight service would initially reach existing and proposed stations in the Salinas-San Luis Obispo corridor during midday hours - between 10 a.m. and 3:30 p.m., with at least a 90-minute gap between the arrival of southbound and northbound Coast Daylight trains at any single station. Year 2040 expanded service would continue to reach existing and proposed stations in the Salinas-San Luis Obispo Corridor during midday hours - between 10 a.m. and 3:30 p.m., and would offer an additional service reaching existing and proposed stations in the Corridor between 12 a.m. and 4 a.m.

Rail Operations

Construction-Period Effects

The Build Alternative includes the potential future construction of one or more physical components ~~improvements~~ to facilitate expanded passenger service without disruption of freight services.

Construction of any of the proposed physical components ~~improvements~~ would have potential to temporarily disrupt freight and passenger rail, but such effects would be temporary. Some of the ~~physical improvements~~ Build Alternative components are more substantial than others (such as track realignments, siding extensions, etc.) and could limit activity on the railway during the construction-period. These potential disruptions would be coordinated with UPRR and Coast Starlight service to reduce service delays to the maximum extent feasible.

Operational Effects

The SDP attempted a "sensitivity" analysis by testing to see how future performance would be affected by the inclusion of a single ~~improvement~~ Build Alternative component, namely the introduction of CTC in the 27-mile stretch of rail alignment from the Santa Margarita siding (milepost 229.6) to the McKay siding (milepost 202.3). As reflected in Master Response 3 in **Chapter 5.0, Comments and Coordination**, it was the intention of Caltrans DOR and SLOCOG to include island CTC as part of the Build Alternative. However, island CTC was inadvertently omitted from the list of Build Alternative components included in the Draft Program EIS/EIR, even though it was referenced in Chapters 9 and 14 of the SDP. The Preferred Alternative identified in this Final EIS/EIR clarifies the intention to include island CTC as a physical component SLOCOG and Caltrans would like to carry forward. And as noted in the SDP (and further described below), the inclusion of island CTC alone - without any other physical components - was found to allow for on-time passenger and freight train performance in two horizon year scenarios. Given the conceptual nature of many of the other Build Alternative components, no detailed modeling of their operational effects on on-time performance were evaluated at this stage.

Therefore, the rail operations analysis of the Build Alternative continues to assume the introduction of island CTC between McKay and Santa Margarita as a means of demonstrating the efficacy of this component. It is possible that one or more other components in the Build Alternative, if carried forward, would result in equally robust train performance, but such scenarios are speculative at this point given that the plans have not been developed beyond the conceptual stage and, thus, cannot be expected to generate verifiable modeling results.

~~Within this 27 mile portion of the alignment~~ The 27 miles between McKay and Santa Margarita are currently single-tracked and have four existing sidings that use subpar signaling infrastructure. ~~As many of the delays within the Corridor are attributable to subpar signaling infrastructure, implementing CTC between Santa Margarita and McKay, a single tracked region with four siding locations, could significantly improve on-time-performance (OTP).[19]~~ Therefore, the SDP modeled performance based on implementing island CTC through this area.

The model was run with Year 2020 freight and passenger rail service and the results indicated 100 percent OTP for both Coast Starlight and Coast Daylight at each new existing and proposed station on the Corridor.[20] The SDP determined that with the implementation of CTC alone, existing freight and existing passenger train movement would not be significantly affected by the introduction of expanded passenger service. Moreover, the SDP found that the installation of “island” CTC would substantially improve OTP throughout this region. It should be noted that in real-world operations, OTP levels could be somewhat lower due to random and unforeseeable events, such as severe weather and passenger emergencies.

For the year 2040, the SDP considered the impact of projected passenger and freight volumes and any physical components ~~improvements~~ to the Year 2040 Base Case network necessary to reach the OTP goal of 87 percent for all passenger train services ~~operating in 2040~~. The Year 2040 Base Case model infrastructure is identical to the Year 2020 Base Case model as no necessary physical components ~~improvements~~ were identified for the Year 2020 aside from the implementation of CTC between Santa Margarita and McKay in the Existing Year. The model was run with Year 2040 freight and passenger rail traffic and yielded 100 percent OTP for the Coast Starlight at each station on the Corridor. The Coast Daylight had 100 percent OTP for each station except San Jose, which yielded 96 percent OTP.[21] As described in the results for the Year 2020, the level of traffic in Year 2040 results in sufficient network capacity to schedule trains such that there is little to no impact from train interference effects, resulting in high OTP levels. In real world operations, OTP levels may be slightly lower due to random and unforeseeable events.

~~[19] Rail OPS considers a train on-time to a station if it arrives within five minutes of its scheduled arrival time. OTP values in actual operations are likely to be lower than model results due to random real-world delays, such as passenger loading, medical emergencies, severe weather, etc. OTP values of less than 100 percent in model results are typically due to train interference effects only.~~

[20] Caltrans Division of Rail, 2013b, p. 9-19.

[21] Caltrans Division of Rail, 2013b, pp. 9-26, 9-27

Roadway Operations

Construction-Period Effects

Construction of the ~~proposed improvements under the~~ Build Alternative components would result in temporary impacts to local roadways in the form of increased construction traffic (e.g., equipment, trucks, and materials hauling, etc.). Construction of the new passenger stations and curve realignments would require more significant construction activities that could result in increased traffic impacts to surrounding roadways in the ~~way~~ form of delays and detours. These construction~~-related~~ period impacts would vary by location, however, ~~given that~~ because the duration of construction period of most ~~for most physical~~ components ~~improvements~~ would be relatively short, and the impacts of construction on local roadways would not be considered significant.

Operational Effects

Existing and Proposed Stations

With the introduction of new Coast Daylight trains, ridership is anticipated to increase, which may result in increased traffic and transit demand near existing and proposed station areas. **Table 3.1-6** illustrates the estimated ridership between San Jose and San Luis Obispo for 2020 and 2040.[22]

Table 3.1-6 Existing, 2020, and 2040 Ridership Forecasts

Service	Existing Year 2012 (Seattle to Los Angeles)	Forecast Year 2020 (San Jose to San Luis Obispo)	Forecast Year 2040 (San Jose to San Luis Obispo)
	Annual Ridership		
Coast Daylight	N/A	124,000	274,000
Coast Starlight	454,443[1]	105,000	150,000
SUBTOTAL	**454,443**	**229,000**	**424,000**

[1] Ridership forecasts are available for the segment from San Jose to San Luis Obispo, existing ridership for the Coast Starlight is only reported for the entirety of the Coast Corridor (Seattle to Los Angeles).

Source: Caltrans Division of Rail, 2013b, Chapter 8; Amtrak, 2012b.

[22] These ridership forecasts have not been disaggregated to distinguish between passengers traveling south to San Luis Obispo and those traveling north through San Luis Obispo. Those passengers travelling from the south are included in these ridership forecasts.

Annual ridership for both the Coast Daylight and Coast Starlight trains is anticipated to increase through the year 2040. In turn, activity at existing stations would increase, and new activity would take place at the new stations. The number of passengers traveling through existing and new stations is unknown. However, based on the increase in ridership, traffic surrounding the stations would likely worsen, and the demand for public transit may increase. Such increases in activity at the new stations were anticipated to some degree in planning documents prepared by Soledad and King City, as discussed in greater detail below.

Both of the cities in which the Build Alternative contemplates new passenger stations have planned for these stations in their General and/or Specific Plans and accompanying environmental documents.

The traffic report prepared for the City of Soledad Downtown Specific Plan reported that all studied intersections currently operate at acceptable LOS. However, several all-way-stop-controlled intersections along Front Street would degrade to unacceptable LOS with buildout of the Specific Plan, which includes development and operation of the proposed passenger station. Installation of traffic signals at these intersections has been recommended to achieve acceptable LOS for year 2030 volumes.

The King City General Plan Final EIR reports acceptable LOS for First Street and for the US 101/First Street Interchange, and with buildout of the General Plan (which includes development and operation of the new station), LOS is projected to remain at acceptable levels for both.

Ridership projections have not been developed for the proposed new stations. However, it is reasonable to assume that ridership at the new stations would be at or below the current ridership of Paso Robles station (about 10,000 riders per year), because Soledad and King City are smaller communities that are not considered major activity centers. There would be relatively few riders per average day (up to approximately 27 per day, using Paso Robles ridership estimates); given train schedules, most riders would be accessing the stations outside peak road traffic hours. The additional night service commencing in 2040 would pass through in the middle of the night, resulting in negligible ~~ridership and low traffic levels~~ effects on peak period traffic. Transit demand may increase around the new station areas; however, given the low levels of riders expected per day, no substantial effects are expected to result.

Given that the new stations are included in city planning documents and the off-peak timing of trains through Soledad and King City, the only potentially significant impact to local roadways would occur in the vicinity of the Soledad station at Front Street. However, the City of Soledad Downtown Specific Plan EIR ~~describes~~ requires mitigation~~s~~ measures for each intersection, including those along Front Street, which would, when enacted, achieve acceptable LOS.

As passenger rail activity increases, demand for parking near station areas could increase at both new and existing stations. However, current and planned parking at the existing and new stations ~~will~~ would likely be adequate given the low ridership expected with the new service. Additionally, Soledad and King City are relatively small, somewhat isolated communities where abundant street parking is available within reasonable proximity of the rail stations. Projected growth in each community is relatively modest, such that on-street parking would likely remain abundant even with the implementation of new train stations.

Furthermore, parking adequacy itself is not necessarily a physical environmental impact, but inadequate parking can result in secondary physical effects, such as increased traffic congestion and/or air pollutant emissions resulting from the search for available parking. Coast Daylight service would reach existing and proposed stations in the Salinas-San Luis Obispo corridor during midday hours - between 10 a.m. and 3:30 p.m., and expanded service by 2040 would offer an additional service reaching existing and proposed stations in the Corridor between 12 a.m. and 4 a.m. ~~Given that~~ Because the new service would occur during off-peak hours, anticipated new or increased ridership is anticipated to be relatively low, and other parking is available near stations, it is unlikely that secondary environmental impacts from parking inadequacy would occur.

Existing stations in the Corridor, located in Salinas, Paso Robles, and San Luis Obispo, ~~will~~ would experience additional service (two additional stops per day). As noted in **Table 3.1-1** above, existing passenger levels at these stations are generally low (the highest is in San Luis Obispo, which averages about 300 passenger trips per day). It is reasonable to estimate that ridership may double by 2020 - based on the SDP ridership projections, and that there ~~will~~ would be some increase in traffic that would result.[23] Under these projections, Coast Starlight ridership would not increase significantly; however, 124,000 additional trips north of San Luis Obispo are projected to occur. Given that these trips would be spread across the five stations

[23] Ridership projections for these particular stations have yet to be developed, but it is reasonable to assume that some increase in passenger traffic would occur.

(existing and proposed) along the Coast Corridor, and some of the travel associated with getting to stations would be served by public transit, it is unlikely that any substantial adverse impacts to local roadways would occur ~~as a result of the Build Alternative~~. Furthermore, roadways serving existing stations are generally large thoroughfares that already accommodate station-related traffic, and are likely adequate to meet projected additional passenger travel demands. Current transit accessing the existing stations may experience an increase in ridership resulting from new train service; however, given the SDP ridership projections, no substantial effects are anticipated.

At-Grade Crossings

As previously discussed, the existing railroad crosses paved public roads at ~~36~~ more than 30 locations along the 130 miles between Salinas and San Luis Obispo. Implementation of the Build Alternative ~~will~~ would result in additional trains crossing through these roads. Improved, yet-to-be-determined warning devices would be installed at some of the crossings, which would result in improved safety at these locations. The Build Alternative would result in some minor additional delays occurring from increased train traffic; new passings of each Coast Daylight train would take approximately one minute.

One new at-grade crossing may be created by the track realignment proposed for mile post (MP) 172 at Cattlemen Road. In this area, Cattlemen Road is a 2-lane, paved rural road about ~~ten~~ 10 miles south of King City. It is unlikely that a significant amount of delay resulting from a new at-grade crossing ~~could~~ would occur in this location due to its rural/agricultural setting and low existing traffic volumes. Furthermore, some type of warning device would be implemented at the new at-grade crossing to ensure the safety of motorists and others at this location.[24]

Additionally, several new at-grade crossings would occur across private, typically dirt roads in agricultural holdings. Traffic levels in these rural areas are very low. The implementation of new and additional at-grade crossings would not be expected to result in any significant travel delays or traffic impacts as a result.

[24] In two additional locations, elements of the Build Alternative could result in crossings of paved public roads where the existing rail alignment already causes an at-grade crossing. These additional potential crossings (Lone Oak Road by the King City Siding Extension and Asuncion Road by the Henry-Santa Margarita curve realignment) would not be considered “new” at-grade crossings. Both of these existing at-grade crossings occur in areas with low traffic volumes and thus substantial new traffic delay is not expected from any additional crossings that the Build Alternative may create.

3.1.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative (see **Tables 3.1-1** and **3.1-2** above) and would retain all corridor-wide and almost all of the location-specific physical components. The only differences are that the Preferred Alternative incorporates revised draft plans for the City of King passenger station (known locally as the City of King Multimodal Transit Center or MMTC), includes a modified footprint for the King City siding extension, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes the aforementioned 27 mile “island” of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects on traffic and travel for the Preferred Alternative would be the same as the Build Alternative, except in the areas where the modified or excluded components are located. The discussions below assess traffic and travel effects as a result of modified or excluded components.

Rail Operations

Construction-Period Effects

Construction of any of the physical components associated with the Preferred Alternative would have the same potential as the Build Alternative to disrupt freight and passenger rail, but such effects would be temporary. Some of the physical components are more substantial than others (such as track realignments, siding extensions, etc.) and could limit activity on the railway during the construction period. These potential disruptions would be coordinated with UPRR and Coast Starlight service to reduce service delays to the maximum extent feasible. Because the Preferred Alternative does not include four of the curve realignments in San Luis Obispo County proposed under the Build Alternative, construction-period interruptions would be reduced. Thus, the Preferred Alternative would not result in any substantial adverse construction-period effects.

Operational Effects

Rail operational effects of the Preferred Alternative would be the same as the Build Alternative. This analysis found that the installation of island CTC between McKay and Santa Margarita would allow for on-time performance of passenger and freight trains in the years 2020 and 2040. The Preferred Alternative would, thus, not result in any substantial adverse rail operational effects.

Roadway Operations

Construction-Period Effects

Construction of any of the physical components associated with the Preferred Alternative would have the same general potential as the Build Alternative to disrupt roadway traffic, but such effects would be temporary. The Preferred Alternative would have reduced location specific effects because the Preferred Alternative does not include four curve realignments in San Luis Obispo County, the construction of which would have involved temporary disruptions to nearby local roadways. Therefore, the Preferred Alternative would not result in any substantial adverse construction-period impacts to roadway operations.

Operational Effects

Existing and Proposed Stations

With one exception, existing and proposed stations are identical to those included in the Build Alternative. The exception is the City of King passenger station, which per revised draft plans submitted by the City of King, shifts slightly northwest within the downtown area and would be located near the intersection of First Street and Broadway, adjacent to the existing railroad tracks. The revised draft station area plan has a smaller footprint than what was analyzed in the Build Alternative, but it is reasonable to assume that operational effects at this station would be similar to those described for the Build Alternative.

At-grade Crossings

With one exception, the number and location of at-grade crossings would be the same in the Build and Preferred Alternatives. The exception is that the Preferred Alternative incorporates revised draft plans for the City of King passenger station. At present, Pearl Street in the City of King has an at-grade crossing with the Coast Corridor railroad. This plan calls for the shifting of the existing at-grade crossing in the City of King from Pearl Street in the northwest direction to Broadway Street.

The City of King's revised draft station area plan calls for this at-grade crossing to be closed and a new at-grade crossing to be opened at Broadway Street. This plan would require the review and approval of the California Public Utilities Commission, which would include conditions or measures on this relocation to help ensure safe rail and roadway operations through the City of King.

3.1.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

~~The following strategies have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potential significant impacts.~~ The measures listed below are applicable to the Build and Preferred Alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

MIN-TRA-1. During the construction of any railway physical component ~~improvement~~ selected for design, disruption to existing rail operations would be minimized to the maximum extent feasible by scheduling construction at times to minimize interference. Appropriate construction and operational strategies would be developed for project-level reviews through coordination between FRA, Amtrak, UPRR, Caltrans DOR, and other interested agencies.

MIN-TRA-2. Transportation System Management (TSM)/Signal Optimization (including retiming, re-phasing, and signal optimization) ~~may~~ would be implemented, as well as other measures including turn prohibitions, use of one-way streets, and traffic diversion to alternate routes, to reduce impacts to roadways and intercity travel.

MIN-TRA-3. Local spot widening of existing curved areas of the railroad ~~could~~ would be implemented to allow for geometric improvements that ~~could~~ would allow for increased rail speeds without significant right-of-way acquisition. Spot widening ~~could~~ would avoid or minimize some of the effects associated with full implementation of curve realignments.

MM-TRA-4. Project-level environmental review would include consultation and coordination with public transit services in order to encourage the provision of adequate bus feeder routes to serve proposed station areas, which ~~could~~ would mitigate potential transit impacts.

Where proposed ~~improvements~~ components have the potential to require a new at-grade crossing, the following approaches would apply:

A-TRA-5. Further develop project design to avoid the need for a new at-grade crossing. The one identified new at-grade crossing is associated with a potential track realignment (MP 172, Cattlemen Road). The primary strategy for avoiding the creation of the new at-grade crossing at Cattlemen Road would be to omit the MP

172 Track Realignment all together, or at least any portion that would result in the creation of a new at-grade crossing at Cattlemen Road. No specific layout for that track realignment has been defined to date.

MIN-TRA-6. If the MP 172 Track Realignment is carried forward for further design and the design cannot feasibly avoid the creation of a new at-grade crossing, the development process would include a detailed Traffic Study, consultation and approval from the CPUC, and implementation would be required to follow all pertinent federal, state, and local policies regarding new at-grade crossings.[25]

MM-TRA-7. In the event that any of the Build Alternative or Preferred Alternative components ~~improvements~~ are carried forward for funding, design, and construction, and the above measures cannot be successfully employed to avoid or minimize roadway traffic effects, major or minor intersection improvements would be employed to reduce any potential adverse traffic effects. This would likely require significant right-of-way acquisition to accommodate additional left-turn and/or through lanes. Adverse effects from such components ~~improvements~~ would be assessed during future project-level review.

3.1.6 SUBSEQUENT ANALYSIS

3.1.6.1 Construction-Period Effects

Subsequent analysis of potential construction-related effects would need to be conducted once some or all of the ~~proposed improvements~~ project components are approved. Future project-level environmental review should focus on potential service disruptions resulting from railway construction activities, as well as potential traffic and roadway effects resulting from detours and delays. ~~Additional avoidance, minimization, and mitigation measures may be identified during the project-level environmental review.~~

3.1.6.2 Rail Operations

As the entire program of ~~proposed improvements~~ components is currently unfunded, future project-level environmental review would focus on some subset of the ~~proposed improvements~~ components. Any ~~improvements~~ components identified for an initial phase of construction would need to be analyzed for

[25] CPUC policy typically requires the removal of one or more existing at-grade crossing in order to permit any newly requested at-grade crossings.

potential impacts to existing freight and passenger rail, particularly for components involving the existing railway (continuous welded rail (CWR)/track upgrades, powered switches). This could require modeling of the existing and rail network, along with proposed modifications, to determine the ultimate outcome of the initial phases of construction.

3.1.6.3 Roadway Operations

Subsequent multimodal access and circulation studies ~~may~~ would be conducted at all station areas as plans for alignments, stations, and operations are refined. Additional environmental analysis would be required in conjunction with these studies to ascertain the exact locations of potential project-generated traffic impacts and potential parking demand impacts. Station area circulation studies, including site-specific parking demand evaluations, would be expected as part of project-level environmental documentation. Additionally, as ~~Build Alternative~~ project components are further refined, they would ~~need to be analyzed and~~ ideally be designed to avoid ~~the~~ creating a new at-grade crossing at Cattlemen Road. Additional mitigation measures may be identified during project-level review as necessary.

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3.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

This section describes existing air quality conditions in the project area and vicinity, including the attainment status for air pollutants of concern within the two air basins traversed by the project corridor~~. This section also includes~~; provides an overview of the regulatory framework for air quality management in the project area~~, a discussion of potential environmental consequences~~; describes the potential air quality and greenhouse gas (GHG) impacts associated with the Preferred Alternative in comparison with the No Build and Build Alternatives; and identifies mitigation strategies for both construction and operational phases.

This section also describes updates and modifications made in response to comments on the Draft Program EIS/EIR. **Chapter 5.0, Comments and Coordination**, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. The San Luis Obispo County Air Pollution Control District (SLOAPCD) provided several comments regarding air quality and GHG emissions discussions of the Draft Program EIS/EIR (see comments A-4.1 through A-4.10). As shown below, one of SLOAPCD's comments resulted in a text revision to the air quality and GHG emissions section.

Air pollution is a general term that refers to one or more substances determined to degrade the quality of the atmosphere. Eight air pollutants have been identified by the United States Environmental Protection Agency (EPA) as being of nationwide concern, based on standards for human health:

- carbon monoxide (CO)
- sulfur oxides (SO_x), including sulfur dioxide (SO_2)
- hydrocarbons (HC)
- nitrogen oxides (NO_x)
- ozone (O_3)
- particulate matter sized 10 microns or less (PM_{10})
- particulate matter sized 2.5 microns or less ($PM_{2.5}$)
- lead (Pb)

All of these pollutants are further described below.

With the exception of hydrocarbons, these pollutants (NO_x in the form of NO_2 and SO_x in the form of SO_2) may be referred to collectively as *criteria pollutants*.

Pollutants that are considered *greenhouse gases* also affect air quality. Greenhouse gases include NO_x, HC, and carbon dioxide (CO_2). The precise sources of these pollutants, their effects on human health and general welfare, as well as their final disposition in the atmosphere vary considerably. In addition, diesel particulate matter (DPM) is also considered here.

3.2.1 REGULATORY REQUIREMENTS

The alternatives are subject to a number of air quality regulations developed and implemented at the federal and state levels. An overview of all relevant policies governing air quality in the project area can be found below.

3.2.1.1 Federal

Clean Air Act

Air quality is regulated at the federal level under the Clean Air Act (CAA) of 1970 and the related Final Conformity Rule.[1] The CAA Amendments of 1990[2] empower the EPA to establish environmental policies and regulations to ensure better air quality. In response, the EPA set National Ambient Air Quality Standards (NAAQS) for all air pollutants identified as being of nationwide concern, established emission standards for certain mobile sources (airplanes and locomotives), and designed procedures to oversee state air programs.

The CAA requires that states submit a State Implementation Plan (SIP) for all areas designated as *nonattainment* by federal air quality standards. *Nonattainment* is defined as any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the NAAQS for the pollutant.[3] The SIP, which is reviewed and approved by the EPA, must identify a plan for achieving the federal standards. Failure to follow this procedure could lead to denial of federal funding and permits. In cases where a SIP is submitted by the state but a nonattainment area remains below federal standards, the EPA is directed to prepare a federal implementation plan.

[1] Title 40, Code of Federal Regulations [CFR], Parts 51 and 93

[2] Public Law [P.L.] 101-549, November 15, 1990

[3] 42 U.S.C. § 7404[d][1][A]

EPA has established *de minimis* thresholds[4] for criteria pollutant emissions to help determine whether conformity determinations will be required for a given project. **Table 3.2-1** lists the *de minimis* thresholds for the various criteria pollutants.

Table 3.2-1 General Conformity De Minimis Thresholds

Pollutant	Area Type	Tons/Year
Ozone (VOC or NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
Carbon monoxide, SO_2 and NO_2	All nonattainment and maintenance	100
Inhalable Particulate Matter (PM_{10})	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
Fine Particulate Matter ($PM_{2.5}$) Direct emissions, SO_2, NO_x (unless determined not to be a significant precursor), VOC or ammonia (if determined to be significant precursors)	All nonattainment and maintenance	100
Lead (Pb)	All nonattainment and maintenance	25

Source: EPA, 2014

[4] http://www.epa.gov/air/genconform/deminimis.html

Consistent with the CAA, "No federal agency may approve, accept or fund any transportation plan, program or project unless such plan, program or project has been found to conform to any applicable SIP in effect under this act."[5]

C*onformity* is defined as follows: conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards; such activities will not cause any of the following occurrences.

- Cause or contribute to any new violation of any NAAQS in any area.
- Increase the frequency or severity of any existing violation of any NAAQS in any area.
- Delay timely attainment of any NAAQS or any required interim emissions reductions or other milestones in any area.[6]

EPA's General Conformity Rule establishes NAAQS for six principal pollutants. Pursuant to the Rule, the lead federal agency must make a Conformity Determination for all federal actions in non-attainment or maintenance areas where the total of direct and indirect emissions of a non-attainment pollutant or its precursors exceeds levels established by the regulation. Federal conformity for ~~projects under FRA~~ FRA projects is called "General Conformity."

In an area without a SIP, a federal action can be shown to "conform" by demonstrating there will be no increase in emission in the nonattainment or maintenance area from the Federal action that could cause new violations of the standards and/or no increase in the frequency or severity of previous violations.

In an area with a SIP, conformity can be demonstrated in one of four ways:

- By showing that the emission increases caused by an action are included in the SIP,
- by demonstrating that the State agrees to include the emission increases in the SIP,
- through offsetting the action's emissions in the same or nearby area,
- through mitigation to reduce the emission increase, or
- through an air quality modeling demonstration in some circumstances.

[5] 42 U.S.C. § 7401 et seq.

[6] 42 U.S.C. § 7506[c][1]

Urban Air Toxics

In addition to NAAQS for criteria pollutants, the CAA identified a list of 188 urban air toxics, alternatively known as toxic air contaminants (TACs). In its final ruling in March 2001, EPA narrowed this list to a group of 21 mobile-source air toxics (MSAT).[7] From this list of 21 MSATs, EPA identified six priority MSATs: benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1, 3-butadiene. To address emissions of MSATS, EPA has introduced a number of measures targeting cleaner fuels and cleaner engines.

Most air toxics originate from human-generated sources, including road mobile sources (e.g., cars, trucks, buses), non-road mobile sources (e.g., airplanes, locomotives), stationary sources (e.g., factories, refineries, power plants) and indoor sources (e.g., building materials). A smaller proportion of air toxics are released from natural sources such as volcanic eruptions and forest fires. Human health risks caused by exposure to urban air toxics at sufficiently high concentrations or extended durations include increased risk for cancer or other serious health effects, including damage to the immune system; and neurological, reproductive, developmental and respiratory problems.

In March 2001, EPA issued regulations requiring the producers of urban air toxics to decrease emissions of these pollutants by target dates in 2007 and 2020. As a result, on-highway emissions of benzene, formaldehyde, 1.3-butadiene and acetaldehyde will be reduced by amounts ranging from 67 percent to 76 percent between 1990 and 2020. On-highway DPM emissions will be reduced by 90 percent. These reductions are expected as a result of the national mobile source control programs, including:

- The reformulated gasoline program;
- A new threshold for the toxic content of gasoline;
- The national low-emission vehicle standards;
- The Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements; and
- The heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements.

The predicated improvements are net emission reductions, which will be experienced even after growth in vehicle miles traveled (VMT) is taken into account.

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[7] Control of Emissions of Hazardous Air Pollutants from Mobile Sources, 66 F.R. 17235

Tools and modeling techniques exist for quantitative PM and CO hot-spot analysis associated with motor vehicles. However, neither EPA nor FRA has released guidance on how to evaluate the effect of future rail lines on ambient concentrations of urban air toxics in the context of NEPA. Specifically, EPA has not established NAAQS or provided other project-level standards for hazardous air pollutants. Furthermore, neither federal or state of California ambient standards exist for mobile source air toxics, although FHWA has developed interim guidance for the evaluation of such toxics generated within a highway context (from automobile and truck sources).[8]

Greenhouse Gas Regulatory Considerations

In December 2009, the EPA Administrator issued findings under the U.S. Clean Air Act that the current and projected GHG concentrations in the atmosphere threaten the health and welfare of current and future generations. In response, the United States EPA has introduced a series of policies designed to slow the growth of emissions, invest in science and technology, and enhance international cooperation.

These policies include a Renewable Fuel Standard Program that mandates a minimum volume of renewable fuel in all transportation fuel sold in the United States. The EPA partnered with the National Highway Traffic Safety Administration (NHTSA) to enable the production of a new generation of clean vehicles with improved fuel economy and reduced emissions of greenhouse gases.[9] Lastly, the EPA introduced the Greenhouse Gas Reporting Program. Through this program, the EPA tracks greenhouse gas data from large emission sources across a range of industry sectors.[10] In addition, the EPA has established multiple incentive-based programs that encourage voluntary GHG reductions. These programs include “ENERGY STAR,” “Climate Leaders,” and Methane Voluntary Programs.[11]

In 2010, CEQ released draft guidance explaining how Federal agencies should analyze the environmental impacts of GHG emissions and climate change when they describe the environmental impacts of a proposed action under NEPA. It provides practical tools for agency reporting, including a presumptive threshold of 25,000 metric tons of carbon dioxide equivalent emissions from the proposed action to trigger a quantitative analysis, and instructs agencies how to assess the effects of climate change on the proposed action and their design.[12]

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[8] FHWA, 2014

[9] US EPA, 2013a

[10] US EPA, 2013c

[11] US EPA, 2013b

[12] CEQ, 2014

3.2.1.2 State

Air Quality Regulations

The responsibility for controlling air pollution in California is shared by 35 local or regional air pollution control/air quality management districts, CARB, and EPA.

As noted above, EPA establishes the NAAQS, sets emission standards for certain mobile sources (including locomotives), oversees state air programs, and reviews and approves the SIP.

The California Clean Air Act of 1988[13] (CCCA) and other provisions of the California Health and Safety Code (HSC)[14] entrusts CARB with preparing the SIP for EPA review and approval. CARB also sets state ambient air quality standards, adopts and enforces federal and state emission standards for mobile sources, and adopts standards and suggested control measures for TACs.

CARB must enforce the CCAA, which requires that all districts designated as nonattainment areas for any pollutant "adopt and enforce rules and regulations to achieve and maintain the state and federal ambient air quality standards in all areas affected by emission sources under their jurisdiction."

CARB also oversees local and regional air pollution control or air quality management districts. For the proposed project, the relevant air pollution control districts are the Monterey Bay Unified Air Pollution Control District (MBUAPCD) and the San Luis Obispo Air Pollution Control District (SLOAPCD). See **Figure 3.2-1**, Regional Air Basins, for a map depicting the two air pollution control districts. ~~Per the CCA, e~~ Each local district is charged with the distribution of permits for industrial pollutant sources and the development of plans and policies to meet standards set at the State and National level.

Greenhouse Gas Regulations

Order S-3-05

This executive order set targets for the reduction of California's Greenhouse Gas (GHG) emissions to:

1. 2000 levels by the year 2010,
2. 1990 levels by the year 2020, and
3. 80 percent below the 1990 levels by the year 2050.

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[13] Assembly Bill [AB] 2595
[14] HSC § 39000 *et seq.*

The executive order also calls for the California Environmental Protection Agency (CalEPA) to prepare biennial reports on the potential impact of increased warming of the atmosphere on certain sectors of the California economy. The first of these reports, *Scenarios of Climate Change in California: An Overview* (Climate Scenarios report), was published in February 2006 (California Climate Change Center 2006).

- In September 2006, the State Assembly passed new legislation to address GHG emissions in California, Assembly Bill 32 (AB 32) or the Global Warming Solutions Act of 2006. Through AB 32, California established a new model for GHG emissions reduction, effectively acknowledging the political threat of climate change due to anthropogenic emissions. AB 32 further directed CARB to lay the foundation for tighter climate legislation through a series of measures with discrete deadlines. Since 2007, CARB has approved a scoping plan for GHG reductions in California that includes direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms;[15] identified 1990 levels of statewide GHG emissions, thereby articulating a 2020 emissions target;[16] implemented a series of nine discrete early action GHG emission reduction measures including regulations for landfills, motor vehicle fuels, refrigerants in cars, tire pressure, port operations and other sources;[17] adopted regulation requiring the largest industrial sources to report and verify their GHG emissions;[18] and established both the Environmental Justice Advisory Committee (EJAC) and the Economic and Technology Advancement Advisory Committee (ETAAC) to provide guidance to CARB throughout the development of related regulation.[19]
- In 2011, CARB adopted cap-and-trade regulation designed to meet the emissions reduction targets established in AB 32 through market-based mechanisms. The cap-and-trade program sets an enforceable emissions cap for major sources of GHG emissions, including refineries, power plants, industrial facilities, and transportation fuels. The State will oversee the distribution of tradable permits to these major emitters, the sum of which will equal the emissions allowed under the cap. This cap will reduce over time.[20]

[15] HSC §38561
[16] HSC §38550
[17] HSC §38560.5
[18] HSC §38530
[19] HSC §38591
[20] HSC §38562(c)

- On December 6, 2007 CARB approved and adopted a statewide GHG emissions limit that is equivalent to the 1990 level, which is 427 million metric tons of carbon dioxide equivalent (an approximately 25 percent reduction in existing statewide GHG emissions);
- In 2007, CARB approved a list of nine discrete early action GHG emission reduction measures.

The proposed Scoping Plan was approved in August 2011. The Scoping Plan summarizes quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020. Among the measures that became operative on January 1, 2012 are GHG reporting regulations, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources. Cap-and-trade programs began on January 1, 2013 with a GHG emissions cap that will decline over time. The first update to the Scoping Plan was approved by CARB in May, 2014, which builds upon the initial Scoping Plan with new strategies and recommendations.

AB 32 also takes into account the relative contribution of each source or source category to help limit adverse impacts on small businesses and others by requiring CARB to recommend a minimum threshold of GHG emissions below which emissions reduction requirements would not apply. AB 32 also allows the Governor to adjust the deadlines established therein for individual regulations or the entire state to the earliest feasible date in the event of extraordinary circumstances, catastrophic events, or threat of significant economic harm.

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) advanced California's GHG legislation by tying regional land use, housing, and transportation planning to emissions reduction targets. SB 375 directs CARB to develop regional GHG reductions targets for emissions associated with passenger vehicles in 2020 and 2035. Each of California's Metropolitan Planning Organizations (MPO) must then prepare a *Sustainable Communities Strategy* (SCS), wherein the MPO articulates a plan to meet the target established by CARB. The SCS must be reviewed by CARB and incorporated into the federally enforceable regional transportation plan.

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07): Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through the introduction of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard will be incorporated into the State Alternative Fuels Plan as required by AB 1007 and represents one of the proposed discrete early action GHG reduction measures identified by CARB pursuant to AB 32.

Ambient Air Quality Standards

Table 3.2-2 lists the relevant national and state ambient air quality standards for the criteria pollutants in the project corridor.

Federal primary standards are intended to protect the public health with an adequate margin of safety; secondary standards are intended to protect the nation's welfare, accounting for air-pollutant impacts on soil, water, visibility, vegetation, etc. Areas that violate these standards are designated nonattainment areas. Areas that once violated the standards but now meet the standards are classified as maintenance areas.

3.2.1.3 Local

Monterey County General Plan

Monterey County has adopted a draft Municipal Climate Action Plan (MCAP). The MCAP was prepared pursuant to policies and subsequent mitigation in the Monterey County General Plan (2010) to address GHG emissions associated with the County's own operations. The MCAP outlines a three-phased approached to achieve GHG emission reductions through 2020 by implementing many of the measures outlined in the AB 32 Scoping Plan. Beginning in phase 3 (2017) of the MCAP, the County will commence planning for the post 2020 period.[21]

San Luis Obispo County General Plan

SLOCAPCD has adopted a set of GHG significance thresholds to ensure that new land use development is consistent with County GHG reduction goals. According to these thresholds, non-stationary sources shall be determined insignificant and consistent with AB 32 when they are in compliance with either a Qualified Greenhouse Gas Reduction Strategy or with the Bright-Line or Efficiency Threshold. The Bright-Line threshold of 1,150 Megatons of CO_2 emitted per year attempts to include all projects for which emissions would be less than "cumulatively considerable" to global climate change. The Efficiency Threshold includes all projects for which GHG emissions are below 4.9 megatons of CO_2 emitted per service population per year. For this analysis, construction emissions shall be amortized over the life of a project and added to the operational emissions.[22]

[21] Monterey County, 2013
[22] Air Pollution Control District: San Luis Obispo County, 2012b

Table 3.2-2 Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[b]	NAAQS[a]		North Central Coast Air Basin†		San Luis Obispo County‡	
			Primary	Secondary	State Standards	National Standards	State Standards	National Standards
Ozone (O_3)	1-hour	0.09 ppm[c]	--	--	Nonattainment	Attainment/ Unclassified[d]	Nonattainment	Attainment <u>Western SLO County</u> <u>Non-Attainment Eastern SLO County</u>
	8-hour	0.070 ppm	0.075 ppm	0.075 ppm				
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm	--	Attainment	Attainment/ Unclassified	Attainment	Unclassified
	8-hour	9 ppm	9 ppm	--				
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm	0.1 ppm**	--	Attainment	Attainment/ Unclassified[e]	Attainment	Unclassified
	Annual***	0.030 ppm	0.053 ppm	0.053 ppm				
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	0.075 ppm****	--	Attainment	Attainment[f]	Attainment	Unclassified
	3-hour	--	--	0.5 ppm				
	24-hour	0.04 ppm	--	--				
Inhalable Particulate Matter (PM_{10})	24-hour	50 µg/m^3 [c]	150 µg/m^3	150 µg/m^3	Nonattainment	Attainment	Nonattainment	Unclassified/ Attainment
	Annual***	20 µg/m^3	--	--				
Fine Particulate Matter ($PM_{2.5}$)	24-hour	--	35 µg/m^3 *	35 µg/m^3 **	Attainment	Attainment/ Unclassified[g]	Attainment	Unclassified/ Attainment
	Annual***	12 µg/m^3	12 µg/m^3	15 µg/m^3				
Sulfates	24-hour	25 µg/m^3	--	--	Attainment	No federal standard	Attainment	No federal standard

Pollutant	Averaging Time	CAAQS[b]	NAAQS[a]		North Central Coast Air Basin†		San Luis Obispo County‡	
			Primary	Secondary	State Standards	National Standards	State Standards	National Standards
Lead (Pb)	30-day	1.5 µg/m^3	--	--	Attainment	Attainment/ Unclassified [h]	Attainment	No Attainment Information
	Rolling 3 month average	--	0.15 µg/m^3	0.15 µg/m^3	--	Attainment	--	Attainment

Notes:

[a] The National Ambient Air Quality Standards, other than O_3 and those based on annual averages, are not to be exceeded more than once a year. The O_3 standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

[b] The California Ambient Air Quality Standards (CAAQS) for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

[c] ppm = parts per million by volume, µg/m^3 = micrograms per cubic meter

[d] On March 12, 2008, EPA adopted a new 8-hour ozone standard of 0.075 ppm. In April 2012, EPA designated the NCCAB attainment/unclassified based on 2009-2011 data, with a design value of 0.070 ppm.

[e] In 2011, EPA indicated it planned to designate the entire state as attainment/unclassified for the 2010 NO_2 standard. As of 2013, however, final designations have yet to be made by EPA.

[f] In June 2011, the ARB recommended to EPA that the entire state be designated as attainment for the 2010 primary SO_2 standard. Final designations have yet to be made by EPA.

[g] In 2006, EPA revised the 24-hour standard for $PM_{2.5}$ from 65 to 35 µg/m^3. In 2009, EPA designated the NCCAB as attainment/unclassified.

[h] On October 15, 2008 EPA substantially strengthened the national ambient air quality standard for lead by lowering the level of the primary standard from 1.5 µg/m^3 to 0.15 µg/m^3. Final designations were made by EPA in November 2011.

I CARB has identified vinyl chloride as a toxic air contaminant with no threshold level of exposure for adverse health effects yet determined.

[*] 98th percentile, averaged over 3 years

[**] Annual Arithmetic Mean

[***] 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years

† North Central Coast Air Basin Attainment Status – January 2013 is based on 2009 to 2011 air monitoring data.

‡ San Luis Obispo County Attainment Status reflects the status as of October, 2012.

Sources: EPA, 2012; CARB, 2009; CARB, 2012

3.2.2 METHODS OF EVALUATION

Potential program-level impacts to air quality and GHG emissions were assessed using significance thresholds established by each of the two relevant air quality districts: each of which incorporate relevant NAAQS. The CEQA Guidelines air quality impact criteria contained in Appendix G were also consulted.

SLOAPCD has established five categories of evaluation for determining the significance of a proposed project's impacts:

- Consistency with the most recent Clean Air Plan for San Luis Obispo County;
- Consistency with a plan for the reduction of greenhouse gas emissions that has been adopted by the jurisdiction in which the project is located and that, at a minimum, complies with State CEQA Guidelines Section 15183.5;
- Comparison of predicted ambient criteria pollutant concentrations resulting from the project to state and federal health standards, when applicable;
- Comparison of calculated project emissions to SLOAPCD emission thresholds; and,
- The evaluation of special conditions that apply to certain projects.[23]

In Monterey, the MBUAPCD outlines similar criteria for determining a project's impact on air quality, in accordance with CEQA guidelines:

- Consistency with the applicable air quality plan;
- Consistency with any air quality standard and avoidance of contributing substantially to an existing or projected air quality violation;
- Avoids a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment;
- Avoids exposing sensitive receptors to substantial pollutant concentrations;
- Avoids the creation of objectionable odors that would affect a substantial number of people.[24]

[23] Air Pollution Control District: San Luis Obispo County, 2012a, p. 3-1

[24] Monterey Bay Unified Air Pollution Control District, 2008, p. 5-1

In accordance with the guidelines for each air district, a thorough emissions analysis would be performed during project-level evaluations to address both construction phase and operational phase impacts of the proposed components ~~improvements~~.

This section will also include a qualitative evaluation of the alternatives' consistency with SB 375. While primarily concerned with land use, a key intent of SB 375 was to help the applicable regional transportation plan comply with the Clean Air Act.

To the extent any of the proposed physical components ~~improvements~~ are carried forward, such components ~~improvements~~ would be subject to General Conformity review under the Clean Air Act. As stated in **Chapter 1.0, Purpose and Need,** and **Chapter 2.0, Alternatives,** there is considerable uncertainty as to whether some, all, or none of the physical components ~~improvements~~ will be carried forward for further design, further environmental review, and eventual construction. Several components of the ~~Build Alternative~~ action alternatives are highly conceptual in nature, like curve realignments; further design would be essential before any meaningful analysis could be completed. Therefore, a programmatic General Conformity determination at this Tier 1 level was deemed to be both impractical and infeasible. Additionally, as described in more detail below, implementation of the ~~Build Alternative~~ action alternatives is expected to reduce VMT and associated emissions. Thus, it is not expected that the proposed components ~~improvements~~ would result in the generation of air emissions that would exceed conformity threshold levels of pollutants for which the air basins are designated as nonattainment or maintenance areas.

3.2.3 AFFECTED ENVIRONMENT

The ~~proposed~~ project would be located within two air quality district jurisdictions: the MBUAPCD and the SLOAPCD. This analysis has been structured to estimate the potential impacts on the two air basins directly affected by the Build Alternative. The two associated air basins are the North Central Coast Air Basin and the South Central Coast Air Basins. **Table 3.2-2** above shows these air basins state and federal attainment statuses. State criteria pollutants are classified as in attainment (or unclassified) for the following pollutants:

- Carbon monoxide
- Nitrogen dioxide
- Sulfur dioxide
- Fine particulate matter ($PM_{2.5}$)
- Sulfates

- Lead
- Hydrogen sulfide

Both districts are in nonattainment for:

- ozone (nonattainment in Eastern SLO County only; western SLO County is in attainment)
- particulate matter (PM_{10}.)

Both air basins are considered in attainment (or unclassified) and below the federal thresholds for all of the criteria air pollutants.

Sensitive receptors are people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling units. The location of sensitive receptors is used to assess the impacts of project-related emissions on public health.[25] The project corridor traverses primarily agricultural lands between Salinas and San Luis Obispo. There is some concentration of sensitive receptors where the railway travels through urban areas, which include existing and proposed station areas.

3.2.4 ENVIRONMENTAL CONSEQUENCES

3.2.4.1 No Build Alternative

Without the proposed passenger service enhancement contemplated as part of the Build Alternative, passenger rail operations between Salinas and San Luis Obispo would not change. Coast Starlight service would continue through the corridor. Amtrak service to Southern California would continue to originate/terminate in San Luis Obispo. Options for passenger travel along the corridor would remain limited to automobiles and bus. Therefore, potential emissions reductions associated with improved passenger rail service would not be realized, and there would be little or no change in air pollutant/ greenhouse gas emissions related to passenger rail service in the Corridor.

As set forth in Chapter 9 of the SDP, freight rail operations in the Corridor are projected to increase. As of 2013, 2 daily long-haul freight trains travel between Salinas and San Luis Obispo. By the year 2020, the SDP projects that a total of 4 daily long-haul freight trains would travel along the Corridor. Accordingly, air

[25] Air Pollution Control District: San Luis Obispo County, 2012a

pollutant and greenhouse gas emissions originating from freight rail sources would likely increase by up to 100 percent over existing conditions unless new freight rail service includes newer, less polluting locomotive technology.

The No Build Alternative also assumes the installation of PTC along the corridor. Neither the construction nor the operation of PTC would generate substantial emissions, as most PTC equipment would be located within trains. The operation of such equipment would not be expected to substantially alter emissions of air pollutants or greenhouse gases from existing levels.

3.2.4.2 Build Alternative

Rail Operations

The Coast Corridor SDP includes a preliminary, high-level calculation of potential air quality effects for the set of components ~~improvements~~ proposed for the entirety of the system (Los Angeles to San Francisco) based on system-wide ridership projections, and other rail uses (including freight). The SDP projects state rail ridership by region using the Amtrak/California Intercity Passenger Rail Forecasting Model,[26] and uses both the FHWA's Freight Analysis Framework database and the Surface Transportation Board's Confidential Carload Waybill Sample to predict future freight flow.

According to this preliminary assessment, the Build Alternative presents some small potential reductions in emissions of air pollutants and GHGs. These reductions would be achieved through the implementation of Coast Daylight rail service and its related potential to attract passengers from other travel modes (especially automobile and airplane). The SDP projects that the Coast Daylight service would generate about 100,000 annual person trips by the year 2020. This averages to about 300 trips per day and translates in projected reduction about 11,000 daily VMT for the Central Coast/Monterey Bay region as a whole. The projected expansion of Coast Daylight service by the year 2040 would further reduce VMT in the Central Coast/Monterey Bay region by an additional 15,000 daily miles (26,000 daily miles total). These VMT reductions comprise relatively small amounts of total regional VMT and are thus expected to translate to small reductions in criteria

[26] The Amtrak/Caltrans Model is based on extensive market and traveler behavior research throughout California (and nationwide), historical rail ridership and revenue data and trends, and demographic data.

pollutants - well below 1 percent of each of the criteria pollutants generated in the Central Coast/Monterey Bay region.[27] Moreover, it should be noted that passenger rail has considerably lower greenhouse gas emissions per passenger mile than other modes, including aircraft, passenger cars and light-duty trucks.[28]

There is potential for some relatively small increases in emissions resulting from increased vehicles trips to and from the new stations proposed in Soledad and King City. However, the Soledad Specific Plan proposes substantial public transit improvements, including additional local bus services connecting residential and commercial areas. Improved pedestrian and bicycle access is also planned within the city.[29] The station design in King City includes parking for Amtrak Thru-Way buses, Greyhound buses, and bus pull-outs for two fixed route bus services.[30] These new activities in the station areas could result in increased emissions levels above existing conditions at the immediate station areas. However, these transit~~-related~~ improvements and activities would ultimately contribute to emissions reductions on a more regional basis to the extent the improvements were associated with trips diverted from automobile to bus or train.

Physical Improvements

Construction-Period Effects

Emissions would be expected to result from the use of heavy machinery during construction. Additional temporary emissions, potentially including criteria pollutants like particulate matter, would result from idling or slowed locomotives due to any construction-related interruptions to existing rail operations.

Emissions generated from common construction activities include:

- Exhaust emissions of PM, NO_x, and other GHGs from fuel combustion for mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, material delivery trucks, and worker commute trips.
- Fugitive PM dust from soil disturbance and demolition activity.
- Evaporative emissions of ROG or VOC from paving activity and the application of architectural coatings.[31]

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[27] Caltrans Division of Rail, 2013b, pp. 13-4 – 13-7

[28] Caltrans Division of Rail, 2013a, p. 26, exhibits 2.9 and 2.10

[29] City of Soledad, 2012b

[30] City of King, 2013

[31] Sacramento Metropolitan Air Quality Management District, 2014

Construction activity related to signal upgrades would be expected to result in minor emissions because substantial use of heavy equipment would not be necessary to install signals. Air pollutant emission would primarily be associated with delivery of construction materials. Track upgrade construction would involve replacement of existing rail (wooden rail ties, etc.) with CWR, track structure realignment, track resurfacing, tie replacement, rehabilitation of existing sidings, and replacement of existing turnouts, as well as installation of powered switches at selected locations. Construction of curve/track realignments, new siding/siding extensions, the new second mainline, and new stations would result in emissions due to fuel use for heavy construction machinery. Additional temporary emissions would result from idling or slowed locomotives due to any construction-related interruptions to existing rail operations.

Operational Effects

Upgrading existing tracks (including replacing wooden rail ties with steel ties) would reduce friction and vibration. Improved stabilization would also require less frequent maintenance of the railway infrastructure. Less frequent maintenance would reduce emissions associated with maintenance vehicle trips and idling, as well as maintenance equipment use. The increase in efficiency associated with track upgrades would reduce the severity of localized carbon monoxide and particulate matter emissions, as well as other pollutants.

New powered switches and CTC signals would improve the efficiency of train travel and result in better control of the railroad tracks. These features could be expected to reduce the amount of time trains spend waiting for dispatching instructions, improve train safety, and improve the overall reliability of service.[32] These components ~~improvements~~ may enable traffic control to safely manage denser rail use and emissions would also be reduced as a result of less time idling.

Since the curve realignments are designed to improve operating efficiencies by reducing the need for deceleration and acceleration around existing curves, the proposed components ~~improvements~~ may affect emissions. Currently, trains must slow down on the approach to a curve, and then speed back up following the curve. The proposed realignments would improve train operations by reducing these inefficiencies, thereby incrementally reducing air pollutant emissions associated with getting back up to speed. There may thus be additional emissions reductions

[32] Caltrans Division of Rail, 2013b, pp. 9-4

associated with improved fuel economy. As exact curve realignments are yet to be developed, no specific quantification of emissions reductions is possible as part of this program-level analysis.

Siding extensions and new sidings would be expected to increase train efficiency and reduce the overall time that passenger trains idle in sidings. This would be expected to result in a slight decrease in emissions. The proposed siding components ~~improvements~~ are meant to serve longer freight trains, allowing passenger trains to pass by more efficiently. Since passenger trains currently idle in short sidings while (much longer) freight trains pass, the expected idling time for freight trains while (comparatively shorter) passenger trains is expected to represent an overall decrease in idling time. The decrease in idling time would be expected to reduce overall air pollutant emissions for trains on the rail.

A new second mainline would allow for increased speeds through the Santa Margarita/Cuesta Grade area, where track curvature and grades contribute to low average speeds through this portion of the railroad. Enhanced train movement with less dwelling would lead to an overall decrease in air pollutant emissions.

Implementation of new train stations would require new stops along the Coast Corridor route, and could be expected to increase emissions associated with deceleration, acceleration, and added idling at each station.

In terms of potential indirect effects, it should be noted that improved train service could result in an increase in ridership numbers. The increase in service, and corresponding increase in ridership, could be expected to decrease passenger travel by personal vehicle or bus, as well as freight transport by auto, truck or bus. These changes would collectively result in an overall decrease in air pollutant emissions. Potential emissions could be offset by implementation of the components ~~improvements~~, corresponding increase in ridership, and subsequent reduction in emissions.

3.2.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the King City siding extension and passenger station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile “island” of CTC between MP 202 and 229 (McKay to Santa Margarita).

Overall, air quality and GHG emissions effects for the Preferred Alternative would be the same as the Build Alternative because of the regional nature of air quality/GHG emissions. Construction emissions would change slightly for the areas where the changed or deleted features are located. The discussions below assess air quality and GHG emissions relative to such modified or excluded features.

Rail Operations

Under the Preferred Alternative, the railway would retain the same overall system-wide operations as the Build Alternative and thus would result in similar effects to air quality and GHG emissions as those identified for the Build Alternative.

Physical Improvements

Construction-Period Effects

Under the Preferred Alternative, construction activities would be similar to those described under the Build Alternative, but the Preferred Alternative excludes four curve realignments in San Luis Obispo County that were included in the Build Alternative. Accordingly, construction emissions would be expected to be lower for the Preferred Alternative than the Build Alternative.

Operational Effects

Under the Preferred Alternative, the proposed components would have similar operational period effects as the Build Alternative and would thus result in similar air pollutant/GHG emissions as the Build Alternative. No new or worsened operational air quality or GHG emissions effects would be expected with the Preferred Alternative.

3.2.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

In addition to the minimization strategies MIN-AQ-1 through MIN-AQ-20 listed below, it can be expected that components ~~improvements~~ in air pollution controls for locomotives would result in continued reductions of pollutant emissions per mile of locomotive travel if freight and passenger locomotives use newer, higher-tech equipment. Over time, these new technologies and locomotive emission standards, paired with the mitigation measures outlined below, would contribute to an overall decrease in air pollutant emissions as a result of the action alternatives ~~Build Alternative~~. The timeline for implementation of these new technologies and emission standards is not certain; however, mitigation measures must be identified to address near-term solutions to the potential impacts, particularly those related to the construction of some or all of the components of the action alternatives ~~Build Alternative~~.

The ~~Build Alternative will~~ action alternatives would be designed to reduce air quality and GHG impacts along the Corridor. ~~The following strategies have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts.~~ The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

3.2.5.1 Construction-Period Strategies

During project implementation, all strategies should be evaluated to determine their appropriateness and effectiveness at reducing regional and localize criteria pollutant emissions.

Strategies that ~~should be considered~~ would be implemented during construction include:

MIN-AQ-1. Apply water suppression at least twice a day to all active construction areas to minimize dust.

MIN-AQ-2. Tarp all trucks hauling soil, sand, and other loose materials or require that all trucks maintain at least two feet of freeboard.

MIN-AQ-3. Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.

MIN-AQ-4. Use water sweepers to sweep all paved access roads, parking areas and staging areas at construction sites daily.

MIN-AQ-5. Use water sweepers to sweep all streets daily if visible soil material is carried onto adjacent public streets.

MIN-AQ-6. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).

MIN-AQ-7. Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).

MIN-AQ-8. Limit traffic speeds on unpaved roads to 15 miles per hour.

MIN-AQ-9. Introduce appropriate erosion control measures to reduce silt runoff to public roadways.

MIN-AQ-10. Replant vegetation as quickly as possible to minimize erosion in disturbed areas.

MIN-AQ-11. Use alternative fuels for construction equipment when feasible.

MIN-AQ-12. Minimize equipment idling time.

MIN-AQ-13. Maintain properly tuned equipment.

3.2.5.2 Operational Strategies

Strategies that ~~should~~ would be ~~considered~~ implemented during the operational phase include:

MIN-AQ-14. Require filters for diesel particulate on locomotives.

MIN-AQ-15. Require liquefied natural gas for engines.

MIN-AQ-16. Reduce idling time to reduce DPM and other emissions.

MIN-AQ-17. Where possible, install anti-idling devices on all locomotives. These devices automatically shut-off the main diesel internal combustion engine that is used for locomotive motive power after a set amount of time when specified parameters (e.g., engine water temperature, ambient temperature, battery charge, railcar brake pressure, etc.) are at acceptable levels. The device can automatically restart the engine when parameters are determined to no longer be at acceptable levels. These can reduce emissions at sidings and while trains dwell at stations.

MIN-AQ-18. Retrofit head-end power sources (HEPs) in passenger locomotives with after-treatment technologies to reduce emissions.

MIN-AQ-19. Use a combination of lean-NO_x catalyst and diesel particulate filter.

MIN-AQ-20. Design stations and associated ingress/egress to provide efficient vehicle movements, to reduce idling time and congestion.

3.2.6 SUBSEQUENT ANALYSIS

As specific program ~~elements~~ components are implemented, more detailed air quality analysis may be appropriate in order to fully determine potential impacts. This analysis could include the following:

- Hotspots can form, particularly around existing and new stations, as a result of changes in train service. Local traffic counts can help identify these potential hotspots near access roads to any new station location.

- Potential sensitive receptors for air toxics must be identified for any new air quality conditions. A risk assessment of the potential impacts to health will be performed in consultation with appropriate regulatory agencies.

Additional evaluation of potential construction impacts may also be warranted to quantify the emissions associated with construction vehicle traffic, excavation, worker trips, and other related construction activities. A construction-period monitoring program may also be appropriate.

Regional Air Basins

Figure **3.2-1**

Source: EPA, 2010

3.3 NOISE AND VIBRATION

This section identifies noise and vibration sensitive land uses along the existing Coast Corridor rail alignment and identifies potential noise and vibration impacts of the No Build and the ~~Build Alternative~~ action alternatives.

This section describes updates and modifications made in response to comments on the Draft Program EIS/EIR. **Chapter 5.0, Comments and Coordination**, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. The City of King provided several comments regarding the noise and vibration discussions of the Draft Program EIS/EIR (see comments A-3.15 – A-3.20 and A-3.32). All of these comments relate to project components that have been incorporated as part of the Preferred Alternative. See Master Response 2 for detail regarding the modifications to the siding extension and station area requested by the City of King.

3.3.1 REGULATORY REQUIREMENTS

3.3.1.1 Federal

Noise Pollution and Abatement Act of 1972

The Noise Pollution and Abatement Act ~~This act~~ addresses excessive noise as a potential threat to human health and welfare, including noise related to transportation, machinery, appliances, and other products in commerce. Following adoption of this act, the ~~U.S. Environmental Protection Agency~~ EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA 1974). In this document, EPA provided recommendations for maximum noise exposure levels below which there would be little to no risk from any of the identified health or welfare effects of noise.

Federal Noise Emission Compliance Regulation Code

FRA's Railroad Noise Emission Compliance regulations[1] prescribe compliance requirements for enforcing railroad noise emission standards adopted by the EPA.[2]

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[1] 49 CFR 210
[2] 40 CFR 201

The provisions apply to the total sound emitted by moving rail cars and locomotives (including the sound produced by refrigeration and air conditioning of units that are an integral element of such equipment), and associated equipment.

Train Horn Rule and Quiet Zones

Under the Train Horn Rule,[3] locomotive engineers must begin to sound train horns at least 15 seconds, and no more than 20 seconds, in advance of all public grade crossings. The maximum volume level for the train horn is 110 decibels (dB), and the minimum sound level is 96 decibels.

In a quiet zone, railroads have been directed to cease the routine sounding of their horns when approaching public highway-rail grade crossings. Localities desiring to establish a quiet zone are first required to mitigate the increased risk caused by the absence of a train-mounted horn. Measures to reduce risk include gated crossings with flashing signals, other signage, fencing, and related measures.

3.3.1.2 State

California Noise Control Act of 1973

The California Noise Control Act[4] establishes the Office of Noise Control in the Department of Health Services to assist local communities developing noise control programs and provide guidance for cities and counties developing noise elements of the General Plan in compliance with Government Code Section 65302.

California Occupational Safety and Health Administration (OSHA)

The California OSHA requires employers to provide employees with proper protection against the effects of noise exposure when sound exceeds certain level (an 8-hour time weighted average of 90 A-weighted decibels [dBA]).[5] The protective measures may be provided either through engineering or administrative controls. If these control measures fail to reduce the noise within the acceptable limits, personal protective equipment shall be provided and used. Additionally, whenever employee noise exposures equal or exceed an 8-hour sound level of 85 dBA, the employer shall develop and administer a Hearing Conservation Program.

[3] 49 CFR Part 222

[4] Health and Safety Code Section 46010

[5] A decibel (dB) is a unit that describes the amplitude of sound. A dBA describes A-weighting in noise measurements, which accounts for the relative frequencies at which humans perceive sound.

California Noise Insulation Standards

California Noise Insulation Standards[6] detail requirements for new multi-family structures located within the 60 Community Noise Equivalent Level (CNEL)[7] contour adjacent to roads, railroads, rapid transit lines, airports or industrial areas. Residential buildings or structures located within exterior community noise equivalent level contours of 60 dB of an existing or adopted freeway, expressway, major street, thoroughfare, railroad or rapid-transit line shall require an acoustical analysis showing that the proposed building has been designed to limit intruding noise to the allowable interior noise levels prescribed in Section 1092 (e)(2).

California Building Standards Code

The California Buildings Standards Code[8] contains the regulations that govern the construction of buildings in California. The Code requires that for any habitable room within a multi-family residential development, interior noise levels shall not exceed a CNEL of 45 dBA for noises attributable to exterior sources. Multi-family residential uses must comply with pertinent requirements in addition to and separate from CEQA. However, the State does not regulate noise levels within single-family detached homes.

3.3.1.3 Local

Government Code Section 65302 requires cities and counties to include a noise element as part of their general plans. The Noise Element identifies the major sources of noise in the area and establishes ways to minimize exposure to sensitive receptors. A city or county must quantify the current and projected noise levels from highways and freeways, passenger and freight railroad operations, ground rapid transit systems, air travels, and other sources.

Monterey County General Plan

The main sources of noise in Monterey County include transportation facilities (highways, roads, railroads, and aircraft), several industrial and food-packing plants, mining operations, and power-generation. The Safety Element includes policies that establish acceptable limits of noise exposure. New noise-sensitive land uses may only be allowed in areas where existing and projected noise levels are deemed acceptable. Furthermore, the County requires the inclusion of standard noise

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[6] Title 25, Section 1092

[7] Community Noise Equivalent Level (CNEL) is a 24-hour average sound level that includes both an evening and nighttime weighting, as further discussed in Subsection 3.3.2.

[8] Title 24, California Code of Regulations

protection measures into all construction contracts. These measures limit construction hours, require noise muffling equipment, and set forth other regulations to reduce potential noise effects.

City of Salinas General Plan

The Noise Element identifies existing and projected noise sources in the community and identifies ways to reduce potential impacts. The Noise Element contains policies and programs to achieve and maintain noise levels compatible with various types of land uses. Like most urbanized areas, Salinas experiences increasing noise levels associated with transportation and other sources. In addition to standard policies to shield sensitive receptors from noise exposure, Salinas has developed a Noise Plan that defines the City's specific programs along with an implementation plan. Programs include specific land use compatibility guidelines with maximum noise level amounts, based on the land use designation.

City of Soledad General Plan

The major source of noise in Soledad is car and truck traffic on US 101. However, other noise generators that contribute to local ambient noise levels include railroads, aircraft, farming activities, quarry activities, and industrial facilities. Policies and implementation programs outlined in the Noise Element focus on establishing noise projections for proper planning and reducing the noise impacts at sensitive receptor locations. The Soledad Downtown Specific Plan (2012) contemplated a variety of new land uses in central portion of the City, including conceptual plans for a proposed new passenger rail station (identical to the station included here as part of the ~~Build Alternative~~ action alternatives). In its environmental review of the specific plan as a whole, the City concluded that build out would result in temporary construction noises, but with mitigation, such noises would not result in any significant impacts.[9]

City of King (King City) General Plan

According to the King City Noise Element, primary noise sources are US 101, the railroad, and industrial activities. King City has adopted goals and policies to encourage land use patterns that reduce the level of human noise exposure.[10] King City adopted the First Street Corridor Master Plan, in which the city contemplated a number of land use changes, including conceptual plans for a passenger rail station

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[9] City of Soledad,2012, p. 1-3 and appendix
[10]City of King, 1998, pp. 25-29

(identical to the station included here as part of the Build Alternative).[11] Additionally, as described in **Chapter 2.0, Alternatives**, since publication of the Draft EIS/EIR the City of King has adopted draft revised plans for the Multi-Modal Transportation Center – Conceptual Design [(MMTC) (2014)].

San Luis Obispo County General Plan

The main sources of noise in San Luis Obispo County are from roadways, railroads, airports, and agricultural and commercial activities. The County General Plan includes policies and mitigation to reduce noise impacts from railroads and these other sources. The noise exposure ranges depicted on noise contour maps are used to determine the land use designation of the area and where new development may occur. Noise created by new transportation noise sources must be consistent and not exceed the levels specified within each land use designation.

3.3.2 METHODS OF EVALUATION

Information for the noise and vibration analysis was obtained/developed from several sources. A qualified acoustical professional, with specific subject-matter expertise as an author of FTA's *Transit Noise and Vibration Impact Assessment Manual* (2006) (FTA Guidance Manual), reviewed aerial mapping of proposed components ~~improvements~~ as well as considerable background information (including but not limited to Appendices B, C, and D) and recommended appropriate screening distances to assess noise and vibration impacts based on relevant criteria. The acoustical professional based the screening distances on potential future train speed estimates and the type of construction work for each component ~~improvement~~ type. Recommended noise screening distances along the corridor are shown in **Table 3.3-1** for train operations in both 2020 and 2040. Vibration screening distances are shown in **Table 3.3-2.**

Federal Transit Administration Noise and Vibration Impact Assessment

The ~~Federal transit Administration~~ FTA Guidance Manual, ~~*Transit Noise and Vibration Impact Assessment* (2006)~~ contains methods for combining transit/rail noise sources with traffic and bus noise sources at stations using both FTA criteria (which are identical to the FRA criteria) and Federal Highway Administration (FHWA) criteria. FHWA provides a model to assess roadway construction noise near

[11] City of King, 2013, p. 29, p. 82

sensitive receptors. Accordingly, **Table 3.3-3** outlines typical construction equipment and their relative noise levels from the FHWA criteria to assess potential noise effects.[12]

The purpose of the document is to provide understanding of noise and vibration effects of mass-transit projects located in population centers and populated land use types. Furthermore, the document provides noise and vibration fundamentals for subject-matter understanding and context.

Noise Compatibility

Based on the recommended screening distances, the second component of the analysis was to inventory the surrounding land uses within the screening areas. Generally, land use categories characterize the density of people and intensity of nearby development. As a result, land use typology is a helpful gauge of the potential presence of sensitive receptors. A review of aerial maps was conducted to determine the presence of potentially sensitive land uses near the existing rail alignment and proposed component ~~improvement~~ areas. Sensitive land uses for this analysis include residences, schools, hospitals, parks, and historic structures. Land use assumptions are as follows:

- **Agricultural**: Fields of crops, fences, farm equipment, rural dirt roads, electrical distribution lines, barns, and crop processing buildings are dominant features in an agricultural area. Agricultural areas may also include residential uses - typically farmhouses or other farmworker housing.
- **Urban/Suburban**: Urban/suburban areas include residential and commercial buildings, parking lots, and landscaping along streets and sidewalks. Generally, urban/suburban areas have many residential sensitive receptors.
- **Industrial/Institutional**: Industrial areas typically include utility lines, equipment, machinery, freight tracks, and factories. Sensitive receptors in these areas would be employees working in factories or operating machinery.
- **Open Space/Undeveloped**: Open space and undeveloped areas include rolling hills, mountain ranges, valleys, and trees and shrubs are visible on the horizon. Residential and commercial developments are not prevalent in these areas.

The analysis then compares future noise and vibration created by each alternative with the existing land use to determine the level of compatibility with each existing land use type:

[12] Federal Highway Administration. 2006. Roadway Construction Noise Model User's Guide.

- ***High compatibility*** indicates areas where the alternative would affect none or very few sensitive receptors, either because sensitive land uses are not present within the provided screening distances or that the nature of the proposed work would not produce noticeable noise and vibration effects.
- ***Medium compatibility*** indicates areas where there may be a moderate number of sensitive land uses nearby within the screening distances and would be moderately affected.
- ***Low compatibility*** indicates areas where there are many sensitive land uses nearby within the screening distances and would be highly affected.

Trains and train horns sounding at at-grade crossings are main contributor to ambient noise levels in the immediate vicinity of the existing railroad, particularly where the railroad is separated from US 101 by more than 0.25 miles.

~~As neither alternative would remove any existing at-grade crossings, screening distances are sized to assume the ongoing use of horns (i.e., the distances are larger than if no horns were sounding).~~ **Table 3.3-1** below reflects the screening distances used in this analysis which reflect existing or new mainline operations as well as siding increases.

Table 3.3-1 Noise Screening Distances

Segment		2020		2040	
Start Point (Mile Post)	End Point (Mile Post)	Mainline Operations (Feet)	Siding Increase (Feet)	Mainline Operations (Feet)	Siding Increase (Feet)
MP 114.9 Salinas	MP 116.9 Salinas	100	200	200	0
MP 116.9 Firestone	MP 144.9 Soledad	500	100	600	0
MP 144.9 Harlem	MP 155.5 Harlem	500	0	700	0
MP 155.5 Detector	MP 160.3 Detector	50	100	100	100
MP 160.7 King City	MP 163.7 King City	50	200	100	100
MP 163.7 Welby	MP 185.7 San Ardo	500	100	600	0

Segment		2020		2040	
Start Point (Mile Post)	End Point (Mile Post)	Mainline Operations (Feet)	Siding Increase (Feet)	Mainline Operations (Feet)	Siding Increase (Feet)
MP 185.7 Wunpost	MP 207.6 McKay	500	100	600	0
MP 207.6 Wellsona	MP 210.7 Wellsona	600	0	700	0
MP 210.7 Detector	MP 218.4 Paso Robles	500	100	600	0
MP 218.4 Templeton	MP 226.9 Atascadero	600	0	700	0
MP 226.9 Detector	MP 229.6 Detector	50	100	50	100
MP 229.6 Santa Margarita	MP 233.1 Santa Margarita	100	200	300	0
MP 233.1 South Santa Margarita	MP 234 South Santa Margarita	300	100	500	0
MP 234 Cuesta	MP 238.8 Cuesta	500	100	700	0
MP 238.8 Serrano	MP 244.8 Chorro	600	0	900	0
MP 244.8 Detector	MP 248.4 Detector	500	100	700	0
MP 248.4 N. San Luis Obispo	MP 248.5 N. San Luis Obispo	500	0	800	0

Source: Cross-Spectrum Acoustics, 2013

Vibration Compatibility

Table 3.3-2 shows proposed screening distances for vibration. These distances were recommended in order to assess potential human annoyance and potential damage to historic and potentially historic properties. The vibration distances are for both 2020 and 2040 because there is no difference between the operating scenarios for vibration.

Table 3.3-2 Vibration Screening Distances

Segment		Vibration Screening Distance
Start Point	End Point	(Feet)
MP 114.9 Salinas	MP 116.9 Salinas	80
MP 116.9 Firestone	MP 144.9 Soledad	130
MP 144.9 Harlem	MP 155.5 Harlem	100
MP 155.5 Detector	MP 160.3 Detector	100
MP 160.7 King City	MP 163.7 King City	100
MP 163.7 Welby	MP 185.7 San Ardo	130
MP 185.7 Wunpost	MP 207.6 McKay	120
MP 207.6 Wellsona	MP 210.7 Wellsona	120
MP 210.7 Detector	MP 218.4 Paso Robles	120
MP 218.4 Templeton	MP 226.9 Atascadero	120
MP 226.9 Detector	MP 229.6 Detector	120
MP 229.6 Santa Margarita	MP 233.1 Santa Margarita	80
MP 233.1 South Santa Margarita	MP 234 South Santa Margarita	60
MP 234 Cuesta	MP 238.8 Cuesta	50
MP 238.8 Serrano	MP 244.8 Chorro	40

Segment		Vibration Screening Distance
Start Point	End Point	(Feet)
MP 244.8 Detector	MP 248.4 Detector	50
MP 248.4 N. San Luis Obispo	MP 248.5 N. San Luis Obispo	40

Source: Cross-Spectrum Acoustics, 2013

3.3.3 AFFECTED ENVIRONMENT

Noise Fundamentals

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure (frequency). Sound levels are usually measured and expressed in dB, with zero dB corresponding roughly to the threshold of hearing. A decibel is a unit that describes the amplitude of sound.

Most of the sounds heard in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound and form the overall ambient noise level. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies; human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range, which is called "A" weighting and is how humans perceive noise. A-weighting de-emphasizes low-frequency and very high-frequency sound in a manner similar to human hearing. The use of A-weighting is required by most local agencies as well as other federal and state noise regulations (e.g., the California Department of Transportation, U.S. Environmental Protection Agency, U.S. Department of Labor, Occupational Safety & Health Administration and U.S. Department of Housing and Urban Development).

In practice, the level of a sound source is measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. Typical A-weighted levels measured in the environment are shown in **Figure 3.3-1** for different types of noise.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes very noticeable. Further, most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, L_{dn} (day/night average sound level), was developed. The L_{dn} divides the 24-hour day into the daytime of 7:00 AM to 10:00 PM and the nighttime of 10:00 PM to 7:00 AM. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The CNEL is another 24-hour average that includes both an evening and nighttime weighting.

Vibration Fundamentals

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Peak Particle Velocity (PPV) is typically used to quantify vibration amplitude. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave and are used to evaluate human response to vibration. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. **Figure 3.3-2** displays the reactions of people and the effects on buildings that continuous typical ground-borne vibration levels can produce.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Construction activities can cause vibration that can vary in intensity. The use of pile driving and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the PPV ~~peak particle velocity~~ descriptor has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

Railroad Noise and Vibration

Transit noise is generated by transit vehicles in motion, as well as from locomotive engine exhaust. Speed also plays a direct factor in noise levels; however, according to the FTA's ~~*Transit Noise and Vibration Impact Assessment*~~ Guidance Manual, locomotive exhaust noise dominates at low speeds for diesel-powered trains. As speed increases, wheel-rail noise becomes dominant. Trains are also equipped with horns and bells for use in emergency situations as well as to signal to pedestrians and vehicles before traveling through an intersection or at-grade crossings. Horns and bells combined with moving vehicle noise can generate noise levels that are considered annoying to nearby residents and other sensitive receptors.[13]

Ambient vibration is usually characterized with a continuous 10- to 30-minute measurement of vibration. Passenger and freight trains usually create high levels of vibration, but intermittently and for short periods of time. Train vibration results from the type of wheel, texture of the railway tracks, and train speed. Effects upon sensitive receptors will vary based on structural components of the nearby building as well as geology of the underlying bedrock and soil.[14]

The study area encompasses a spectrum of land uses, all of which differ in ambient noise level. Rural, undeveloped areas have lower noise levels in comparison to noise levels near roadways and urban developments. Much of the study area encompasses agricultural, open space areas as well as industrial/institutional and urban/suburban areas. US 101 and the existing Coast Corridor alignment are the largest contributors to the ambient noise levels in the study area.

According to information from the applicable county general plans, existing noise levels along the US 101 corridor - near which much of the existing railroad is located -are between 60 and 70 CNEL.[15]

3.3.4 ENVIRONMENTAL CONSEQUENCES

3.3.4.1 No Build Alternative

The No Build Alternative would involve maintaining existing physical conditions along the Coast Corridor study area. The No Build Alternative contemplates rail service components ~~improvements~~ in Salinas and points north along the railroad tracks in Monterey County that are intended to facilitate expanded passenger rail service (toward San José). According to the SDP, freight rail operations are likely to increase by the year 2040, doubling from 2 daily freight trains today to 4 daily trains in 2040. Implementation of these projects would occur regardless of whether or not any of the proposed physical components ~~improvements~~ comprising the Build Alternative are ultimately constructed.

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[13] Federal Transit Administration (FTA), 2006, pp. 2-6 – 2-7

[14] FTA, 2006,.pp. 7-11

[15] County of Monterey, 2006, figure 4.8-3; County of San Luis Obispo , 1992, Noise Element and Appendix A

The No Build Alternative may thus result in noise and vibration impacts to sensitive land uses, but primarily north of Salinas, as these areas would see both increased passenger and freight service. The Salinas to San Luis Obispo study area would see only increased freight service. If additional freight service is proposed for late night hours, the additional service could result in somewhat more pronounced noise effects along the corridor, because people are somewhat more sensitive to nighttime noises. As reflected herein in the discussion of cumulative effects (**Section 3.15**), the Phillips 66 Company Rail Spur Extension Project is currently undergoing CEQA-only review for the proposed construction and operation of a rail spur into an existing oil refinery (Nipomo Mesa), south of the City of San Luis Obispo.

3.3.4.2 Build Alternative

Construction-Period Noise and Vibration Effects

The Build Alternative contemplates a number of physical components ~~improvements~~ throughout the Coast Corridor study area. To the extent any of these ~~improvements~~ components are ultimately carried forward for further design leading to construction, heavy equipment and vehicles could result in temporary increases in noise and vibration levels. These temporary construction impacts would be more pronounced at nighttime when overall ambient noise levels are lower. **Table 3.3-3** outlines typical construction equipment and their relative noise levels.

~~Proposed~~ Project ~~improvements~~ components that require extensive grading or excavation, such as curve realignments, siding extensions, and new stations would have a more noticeable noise and vibration effect owing to anticipated construction time. Additionally, some of the components would likely require site clearing and earthmoving activities, such as excavation, grading, and vibratory rolling, toward the construction of new rail tracks.

Powered switches and other track/signal upgrades would generally not require such extensive use of heavy construction equipment and, thus, would have less potential to result in significant noise or vibration effects upon sensitive receptors. ~~However, the anticipated equipment required for construction is unclear at this time, since the Build Alternative improvements are conceptual at the programmatic level.~~

Table 3.3-3 Typical Construction Equipment Noise Levels

Construction Equipment	Maximum Noise Level (L_{max}) dBA at 50 feet	Maximum Noise Level (L_{max}) dBA at 300 feet
Backhoe	78	63
Compactor (ground)	83	68
Compressor (air)	78	63
Concrete Mixer Truck	79	64
Concrete Pump Truck	81	66
Crane	81	66
Dozer	82	67
Dump Truck	76	61
Excavator	81	66
Front End Loader	79	64
Generator	81	66
Paver	77	62
Pneumatic Tools	85	70
Pumps	81	66
Roller	80	65
Scraper	85	70

Source: FHWA Roadway Construction Noise Model User's Guide, 2006

Operational Noise and Vibration Effects

The Build Alternative proposes an increase of two passenger trains per day through the corridor by 2020 and two additional passenger trains per day by the year 2040. The components ~~improvements~~ included in the Build Alternative would also provide improved efficiency in the movement of existing freight rail through the corridor. As a result, the Build Alternative has the potential to increase operational noise and vibration within the Coast Corridor study area.

For diesel-powered commuter rail trains at low speeds, locomotive exhaust is typically the greatest source of noise. This would occur primarily as trains approach and pass through urban areas. As speed increases, wheel-rail noise becomes the dominant noise source. Additionally, the railway itself can radiate noise as it vibrates in response to the dynamic loading of the moving train. Trains are also equipped with horns and bells for use in emergency situations and as a general audible warning to track workers and trespassers within the right-of-way as well as to pedestrians and motor vehicles at highway grade crossing.[16]

Noise Compatibility

Table 3.3-4 summarizes the potential for the ~~proposed physical improvements~~ components and service expansion comprising the Build Alternative to result in operational period noise impacts. The table identifies each ~~proposed improvement~~ component's noise compatibility within the screening distances identified in **Table 3.3-1**. **Table 3.3-4** also notes existing and proposed maximum speeds for each rail segment. For a more conservative analysis, a potential top speed of 90 mph was assumed even though the SDP contemplates maintaining the Coast Corridor as an FRA Class IV railroad, in which a maximum top speed of 80 mph is permitted.

Table 3.3-4 Noise Compatibility of Build Alternative

Build Alternative Components/Current and Future Maximum Train Speeds in the Area	Predominant Land Use Types within Screening Distance	Noise Compatibility
Salinas Powered Switch *Current Max Speed: 40-60 mph* *Future Max Speed: No Change*	N/A	N/A
Upgrades to Existing Alignment Section #1 *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	Industrial/Institutional; Urban/Suburban; Some Agricultural	High in Agricultural areas; Low in Residential areas
Spence Siding Extension *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	Agricultural	~~N/A~~ High
Upgrades to Existing Alignment Section #2 *Current Max Speed Zones 60-70 mph; 35-40* *Future Max Speed Zones: 90 mph; 60 mph*	Mostly Agricultural; Urban/Suburban near Chualar, Gonzales, and Soledad	High in Agricultural areas; Low in Residential areas
Gonzales Powered Switch *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	N/A	N/A
Soledad Powered Switch *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	N/A	N/A

[16] FTA, 2006

Build Alternative Components/Current and Future Maximum Train Speeds in the Area	Predominant Land Use Types within Screening Distance	Noise Compatibility
Soledad New Passenger Station *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	Industrial/Institutional; Urban/Suburban; Vosti Park	Medium
Harlem/Metz Curve Realignments *Current Max Speed: 35-40 mph* *Future Max Speed: 60 mph*	Agricultural; Open Space/Undeveloped; Some Residential	High in Agricultural areas; Low in Residential areas
Chalone Creek New Siding *Current Max Speed: 35-40 mph* *Future Max Speed: 60 mph*	Agricultural; Open Space/Undeveloped; Some Residential	~~N/A~~ High in Agricultural areas; Medium in Residential areas
Upgrades to Existing Alignment Section #3 *Current Max Speed Zones: 35-40 mph; 60-70 mph* *Future Max Speed Zones: 60 mph; 60-70 mph (no change)*	Agricultural; Open Space/Undeveloped; Some Industrial	High
Coburn Curve Realignments *Current Max Speed: 35-40 mph* *Future Max Speed: 60 mph*	Agricultural; Open Space/Undeveloped; Some Industrial	High in Agricultural areas; Low in Residential areas
King City Siding Extension *Current Max Speed: 60 mph* *Future Max Speed: No Change*	Some Agricultural; Urban/Suburban	~~N/A~~ High in Agricultural areas; Medium in Residential areas
King City New Passenger Station *Current Max Speed: 60 mph* *Future Max Speed: No Change*	Industrial/Institutional; Urban/Suburban	Medium
King City Powered Switch *Current Max Speed: 60 mph* *Future Max Speed: No Change*	N/A	N/A
Upgrades to Existing Alignment Section #4 *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	Agricultural; Some Industrial/Institutional; Some Residential	High in Agricultural areas; Low in Residential areas
MP 165 Curve Realignment *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	Agricultural; Some Industrial/Institutional; Some Residential	High in Agricultural areas; Low in Residential areas
San Lucas New Siding *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	Agricultural; Urban/Suburban	~~N/A~~ High in Agricultural areas; Medium in Residential areas
Upgrades to Existing Alignment Section #5 *Current Max Speed Zones: 60-70 mph; 40-55 mph* *Future Max Speed Zones: 90 mph; 70 mph*	Agricultural; Open Space/Undeveloped; some Industrial; some Residential	High in Agricultural areas; Low in Residential areas

Build Alternative Components/Current and Future Maximum Train Speeds in the Area	Predominant Land Use Types within Screening Distance	Noise Compatibility
MP 172 Track Realignment *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	Agricultural; Open Space/Undeveloped; some Industrial; some Residential	High in Agricultural areas; Low in Residential areas
San Ardo Powered Switch *Current Max Speed: 60-70 mph* *Future Max Speed: 90 mph*	N/A	N/A
Getty/Bradley Curve Realignments *Current Max Speed Zones: 60-70 mph; 40-55 mph* *Future Max Speed Zones: 90 mph; 70 mph*	Open Space/Undeveloped	High
Bradley Siding Extension *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Open Space/Undeveloped; some Residential	~~N/A~~ <u>High in Open Space/Undeveloped areas; Medium in Residential areas</u>
Bradley Powered Switch *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	N/A	N/A
Upgrades to Existing Alignment Section #6 *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Open Space/Undeveloped; some Industrial and Residential near Camp Roberts	High in Open Space/Undeveloped areas; Low in Residential areas
Upgrades to Existing Alignment Section #7 *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Urban/Suburban; some Agricultural	High in Agricultural areas; Low in Residential areas
McKay/ Wellsona Curve Realignments *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Open Space/Undeveloped; some Residential	High in Open Space/Undeveloped areas; Low in Residential areas
McKay East Powered Switches *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	N/A	N/A
Wellsona New Siding *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Open Space/Undeveloped; some Residential	High in Open Space/Undeveloped areas; Medium in Residential areas
Upgrades to Existing Alignment Section #8 *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Urban/Suburban; some Industrial; some Open Space/Undeveloped	High in Open Space/Undeveloped areas; Low in Residential areas
Wellsona/ Paso Robles Curve Realignments *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Agricultural; Industrial; some Residential	High in Agricultural areas; Low in Residential areas

Build Alternative Components/Current and Future Maximum Train Speeds in the Area	Predominant Land Use Types within Screening Distance	Noise Compatibility
Templeton Siding *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Urban/Suburban	~~N/A~~ Medium in Residential areas
Templeton/ Henry Curve Realignments *Current Max Speed: 40-50 mph* *Future Max Speed: 70 mph*	Urban/Suburban; Agricultural	High in Agricultural areas; Low in Residential areas
Upgrades to Existing Alignment Section #9 *Current Max Speed Zones: 40-55 mph; 35 mph* *Future Max Speed Zones: 70 mph (between mp 218.4-223.0)*	Urban/Suburban; Santa Margarita Community Park; Pine Mountain Cemetery	High in Open Space/Undeveloped areas; Low in Residential areas
Henry/Santa Margarita Curve Realignment *Current Max Speed Zones: 40-55 mph; 35 mph* *Future Max Speed: No Change*	Urban/Suburban; Open Space/ Undeveloped; some Industrial	Low
Santa Margarita Powered Switch *Current Max Speed 40-55 mph* *Future Max Speed: No Change*	N/A	N/A
Cuesta Second Main Track *Current Max Speed: 20-30 mph* *Future Max Speed: No Change*	Utilities/Open Space	High
Upgrades to Existing Alignment Section #10 *Current Max Speed: 20-30 mph* *Future Max Speed: No Change*	Urban/Suburban; Parks	Medium

Source: Circlepoint, 2013; Caltrans Division of Rail, 2013

Generally speaking, ~~physical improvements~~ project components in urban/suburban areas (where residential uses are common) generally have lower noise compatibility because there are more sensitive land uses located within the noise screening distances. Less populated areas like open space/undeveloped lands have few sensitive land uses, but are considered more sensitive because increased noise levels could degrade the quality of recreational activities.

Conversely, areas that have agricultural land use types are less likely to be affected by ~~proposed improvements~~ project components because there are few people present in these areas to experience increased noise.

The noise compatibility level also depends on the ~~type of improvement~~ Build Alternative component because modifications to the existing rail alignment ~~may~~ would potentially expose new sensitive land uses to operational impacts of the train.

The existing railway alignment passes through all areas potentially affected by *curve realignments*; thus, the noise generated by passing trains is currently experienced at these locations. Additionally, curve realignments would serve to straighten the alignment to some degree; therefore, noise associated with reduced train speeds would likely decrease.

The Build Alternative considers curve realignments mostly within agricultural and open space/undeveloped areas, but some (particularly Wellsona/Paso Robles, Templeton/Henry, and Henry/Santa Margarita) have the potential to affect residential properties within the operative noise screening distances. The McKay/Wellsona curve realignment is proposed for lands adjacent to and within the Big Sandy Wildlife Area. These curve realignments would alter noise levels in these areas by relocating portions of the railway. However, given the land uses in this area, noise compatibility would be considered low.

The proposed King City and Soledad passenger rail stations are located in relatively densely populated areas through which existing passenger and freight rail trains pass without stopping. There are many noise sensitive uses located near the footprint of the proposed stations. Train service associated with the Build Alternative would result in trains that would potentially stop at the proposed new passenger stations. Trains coming to a stop at a passenger station would travel at lower speeds and thus result in a different noise profile than trains passing through without stopping. Locomotive exhaust noise may be more apparent at such low speeds, but wheel noise would be lower. Additionally, a train traveling through a populated area would likely sound the train's horn for standard safety purposes. As a result, existing noise levels would not drastically change. Therefore, noise compatibility in these locations would be moderate.

Proposed new *sidings or siding extensions* are generally less likely to affect sensitive land uses because the new tracks would be placed within existing right-of-way of the rail alignment. However, some proposed siding additions or new sidings (Templeton, Wellsona, Bradley, and King City) could expose populated areas to potential new noise from train idling. Noise compatibility in these populated locations would be moderate; trains currently travel along these areas, but the incremental addition of idling noise could affect sensitive receptors.

Upgrades to tracks along the *existing alignment* would allow for trains to safely travel at faster speeds, which may have additional noise impacts. Moreover, increases in noise due to increased rail service would be gradual over time and would be intermittent, rather than sudden and sustained.

Along several segments of the existing railroad (#1, #2, #4, and #6), proposed train speeds would increase from a maximum of 60 mph to as high as ~~90 mph~~ 80 mph. Because there are some sensitive land uses in proximity to this segment, the incremental noise increase leads to a conclusion of medium compatibility.

Along existing alignment segment #3, train speeds would not substantially increase and few sensitive land uses are present. Accordingly, noise compatibility would be high.

Along existing alignment segments #7, #8, and #9, trains could increase from a maximum speed of 55 mph to 70 mph. Resultant noise compatibility would be high along portions that are in agricultural use; low in areas with residential uses. Speeds along existing alignment #10 would not substantially increase, but since this is a residential area, the resultant noise compatibility would be medium.

Vibration Compatibility

Generally, vibration effects are more localized near ~~the proposed improvement~~ Build Alternative components, thus the screening distance is shorter than noise compatibility. Similarly to the noise compatibility assessment, ~~proposed improvements~~ project components within urban/suburban areas have low vibration compatibility because there are more sensitive land uses located within the vibration screening distances. Vibration impacts are not as prevalent for agricultural and open space/undeveloped areas, owing to sparse population and limited developed infrastructure in these areas.

Table 3.3-5 Vibration Compatibility of Build Alternative

Build Alternative Components	Land Use/Probability of Sensitive Receptors	Vibration Compatibility
Salinas Powered Switch	N/A	N/A
Upgrades to Existing Alignment Section #1	Some potentially Residential buildings; Mostly Agricultural land uses	High in Agricultural portions; Low in Residential portions
Spence Siding Extension	Agricultural	High

Build Alternative Components	Land Use/Probability of Sensitive Receptors	Vibration Compatibility
Upgrades to Existing Alignment Section #2	Some potentially Residential buildings; Mostly Agricultural land uses	High in Agricultural portions; Low in Residential portions
Gonzales Powered Switch	N/A	N/A
Soledad Powered Switch	N/A	N/A
Soledad New Passenger Station	Some potentially Residential buildings; 8 potentially Historic buildings and 1 potentially Historic park resource	Medium
Harlem/Metz Curve Realignments	Mostly Agricultural and Open Space/Undeveloped; Some potentially Residential properties; 4 potentially Historic properties	High in Agricultural portions; Low in Residential portions
Chalone Creek New Siding	Mostly agricultural and open space/undeveloped; Some potentially residential properties; 1 potentially historic property	High in Agricultural portions; Low in Residential portions
Upgrades to Existing Alignment Section #3	Mostly Agricultural and Open Space/Undeveloped; Some potentially Residential properties; 2 potentially Historic properties	High in agricultural portions; Low in Residential portions
Coburn Curve Realignments	Mostly Agricultural; Some potentially Residential properties	High in agricultural portions; Low in Residential portions
King City Siding Extension	Mostly potentially Residential properties; some Agricultural; 6 potentially Historic properties	High in agricultural portions; Medium in Residential portions
King City New Passenger Station	Mostly potentially Residential properties; 3 potentially Historic properties	Medium
King City Powered Switch	N/A	N/A
Upgrades to Existing Alignment Section #4	Mostly agricultural and open space/undeveloped; Some potentially residential properties; 3 potentially historic properties	High in Agricultural portions; Low in Residential portions
MP 165 Curve Realignment	Mostly agricultural; Some potentially residential properties; 2 potentially historic properties	High in Agricultural portions; Low in Residential portions

Build Alternative Components	Land Use/Probability of Sensitive Receptors	Vibration Compatibility
San Lucas New Siding	Mostly agricultural; Some potentially residential properties	High in Agricultural portions; Medium in Residential portions
Upgrades to Existing Alignment Section #5	Agricultural; open space/undeveloped; some industrial; some residential	High in Agricultural portions; Low in Residential portions
MP 172 Track Realignment	Mostly Agricultural; some potentially Residential properties; 1 potentially Historic property	High in Agricultural portions; Low in Residential portions
San Ardo Powered Switch	N/A	N/A
Getty/Bradley Curve Realignments	Open Space/Undeveloped; 1 potentially Historic property	Medium
Bradley Siding Extension	Open Space/Undeveloped	High
Bradley Powered Switch	N/A	N/A
Upgrades to Existing Alignment Section #6	Open Space/Undeveloped; some Industrial and Residential near Camp Roberts; 3 potentially Historic properties	High in Open Space/Undeveloped portions; Low in Residential portions
Upgrades to Existing Alignment Section #7	Many potentially Residential properties; some Open Space/Undeveloped; 3 potentially Historic properties	High in Agricultural portions; Low in Residential portions
McKay/Wellsona Curve Realignments	Mostly Open Space/Undeveloped; some potentially Residential properties; 1 potentially Historic property	High in Open Space/ Undeveloped portions; Low in Residential portions
McKay East Powered Switches	N/A	N/A
Wellsona New Siding	Mostly open space/undeveloped; some potentially residential properties; 2 potentially historic properties	High in Open Space/Undeveloped areas; Medium in Residential areas
Upgrades to Existing Alignment Section #8	Many potentially residential properties; some open space/ undeveloped; 3 potentially historic properties	High in Open Space/Undeveloped portions; Low in Residential portions

Build Alternative Components	Land Use/Probability of Sensitive Receptors	Vibration Compatibility
Wellsona/Paso Robles Curve Realignments	Mostly Open Space/Undeveloped; some potentially Residential properties; 3 potentially Historic properties	High in Agricultural portions; Low in Residential portions
Templeton Siding	Many potentially Residential properties	Low
Templeton/Henry Curve Realignments	Many potentially Residential properties	Low
Upgrades to Existing Alignment Section #9	Many potentially Residential properties; some Open Space/Undeveloped; 3 potentially Historic properties	High in Open Space/Undeveloped portions; Low in Residential portions
Henry/Santa Margarita Curve Realignment	Many potentially Residential properties; 2 potentially Historic properties	Low
Santa Margarita Powered Switch	N/A	N/A
Cuesta Second Main Track	Open Space; 1 potentially Historic property	High
Upgrades to Existing Alignment Section #10	Many potentially Residential properties; some Open Space/Undeveloped; 1 potentially Historic property	High in Open Space/Undeveloped portions; Low in Residential portions

Note: Sensitive receptors reported here may differ in some instances to those reported in Table 3.3-4. This is due to different screening distances used in the noise and vibration analyses.

Source: Circlepoint, 2013; AECOM, 2013; ICF, 2013

Similar to noise compatibility, vibration compatibility is based on the potential to result in new effects upon sensitive land uses. Proposed *curve realignments* could potentially move train tracks closer to potential residential buildings, as well as allow trains to travel at faster speeds, thereby increasing vibration effects on sensitive land uses. The Harlem/Metz and Mile Post 165 curve realignments occur in a primarily agricultural area; however, several potentially historic structures are located within the vibration screening distances. The proposed Wellsona/Paso Robles, Templeton/Henry, and Henry/Santa Margarita curve realignments are located in relatively populated areas that also include potentially historic buildings. Vibration compatibility of these proposed components ~~improvements~~ is therefore low.

There are several potentially historic structures surrounding the footprint of the proposed Soledad and King City *stations*. Freight and passenger train services already travel through these downtown districts. The Build Alternative would potentially result in increased passenger service but also new stations in these communities. If new stations are developed, the result would be that the new Coast Daylight passenger service would pass slowly through these communities, resulting in a lower level of vibration than if trains passed through at high speed.[17] Freight and Coast Starlight trains would continue to pass through Soledad and King City without stopping at the new stations.

Similarly to proposed curve realignments, new *sidings or siding extensions* in mostly developed areas, such as the proposed King City, San Lucas, and Wellsona sidings, could expose populated areas to potential new noise from train idling. Although trains currently travel along these areas, new sidings could result in incremental addition of idling vibration impacts. Vibration compatibility in these areas is moderate.

As with the noise compatibility assessment, track <u>components</u> ~~improvements~~ to *existing alignment* areas would allow trains to safely travel at higher speeds and would accommodate a higher capacity of trains on the corridor. Both of these factors would contribute to increased vibration to sensitive receptors. Several notable historic structures and bridges occur within existing alignment areas. The Mission San Miguel and the Rios Caledonia Adobes area both within the vibration screening distance of segment #7 of the existing alignment. In this area, which includes nearby residential lands, track <u>components</u> ~~improvements~~ would allow for maximum speeds to increase from 55 mph to 70 mph. The Bradley Bridge, which is eligible for the National ~~Record~~ <u>Register</u> of Historic Places (NRHP) (and discussed in **Section 3.10, Cultural Resources**), is located within segment #6 of the existing alignment where speeds would increase from a maximum of ~~60~~ <u>55</u> mph to ~~90~~ <u>70</u> mph. Therefore, vibration compatibility both these areas (segments #6 and #7) would be low.

3.3.4.3 <u>Preferred Alternative</u>

<u>The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the King City siding extension and passenger station, and would exclude each of the four curve realignments within San Luis Obispo County.</u>

[17] FTA, 2006, p. 7-10

Additionally, the Preferred Alternative includes a 27 mile "island" of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects related to noise and vibration for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded features are located. The discussions below assess noise and vibration effects from the modified or excluded components.

Construction-Period Noise and Vibration Effects

Under the Preferred Alternative, construction activities would be similar to those described under the Build Alternative, but the Preferred Alternative excludes four curve realignments in San Luis Obispo County that were included in the Build Alternative. Therefore, related construction-period noise and vibration impacts would be reduced under the Preferred Alternative.

Under the Preferred Alternative, construction of an additional 27 miles of "island" CTC would involve minor construction of signaling equipment, which would be similar to noise and vibration impacts for corridor-wide components identified within the Build Alternative, which were found not to be substantial/adverse.

The Preferred Alternative incorporates the revised draft station area plans for the City of King passenger station. The proposed station remains in the same general area as the plans examined/evaluated as part of the Build Alternative. Implementation of the revised draft station area plan would not alter the type of construction equipment or extend the construction duration in a manner that would increase noise and vibration impacts. In addition, the existing railroad tracks would not be relocated, and the level of rail activity would be similar to what was assumed for the Build Alternative.

Operational Noise and Vibration Effects

Under the Preferred Alternative, the project components would have similar operational period effects as the Build Alternative and would thus result in similar noise and vibration impacts as the Build Alternative. The Preferred Alternative would include an additional 27 miles of "island" CTC; however, after this feature is constructed, no operational noise effects are expected. No new or worsened noise and vibration effects would be expected with the Preferred Alternative.

Noise Compatibility

Noise compatibility of the Preferred Alternative would be the same as identified above in **Table 3.3-4,** except for certain areas where the Preferred Alternative introduces modifications from the Build Alternative. These modified areas and their respective projected noise compatibility are summarized below in **Table 3.3.6.**

Table 3.3-6 Noise Compatibility of Preferred Alternative

Preferred Alternative Components/Current and Future Maximum Train Speeds in the Area	Predominant Land Use Types within Screening Distance	Noise Compatibility
King City Siding Extension *Current Max Speed: 60 mph* *Future Max Speed: No Change*	Agricultural	High
Upgrades to Existing Alignment Section #7 (Including Island CTC between McKay and Santa Margarita) *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Urban/Suburban; some Agricultural	High in Agricultural areas; Low in Residential areas
Upgrades to Existing Alignment Section #8 (Including Island CTC between McKay and Santa Margarita) *Current Max Speed: 40-55 mph* *Future Max Speed: 70 mph*	Urban/Suburban; some Industrial; some Open Space/Undeveloped	High in Open Space/Undeveloped areas; Low in Residential areas
Upgrades to Existing Alignment Section #9 *Current Max Speed Zones: 40-55 mph; 35 mph* *Future Max Speed Zones: 70 mph (between mp 218.4-223.0)*	Urban/Suburban; Santa Margarita Community Park; Pine Mountain Cemetery	High in Open Space/Undeveloped areas; Low in Residential areas

Source: Circlepoint, 2013; Caltrans Division of Rail, 2013

As shown in **Table 3.3-6** above, the Preferred Alternative is located in similar noise compatibility areas as the Build Alternative, except the King City Siding Extension, which as revised in the Preferred Alternative, would be located exclusively within an agricultural area where noise sensitivity is low and, thus, noise compatibility would be high. This would reduce potential noise impacts compared to the Build Alternative. Along existing alignment segments #7, #8, and #9, trains could increase from a maximum speed of 55 mph to 70 mph. Resultant noise compatibility would be high along portions that are located in agricultural use and low in areas with residential uses. Therefore, construction and operation of the Preferred Alternative would not result in new noise and vibration impacts from those identified for the Build Alternative. Because the Preferred Alternative excludes four curve realignments in San Luis Obispo County, there is no new potential for additional noise related effects resulting from curve realignments in this area. The inclusion of island CTC from McKay to Santa Margarita would not introduce any new potential sources for additional noise over existing conditions. Therefore, the Preferred Alternative would have a reduced noise impact compared to the Build Alternative.

Vibration Compatibility

Under the Preferred Alternative, construction activities would be similar to those described under the Build Alternative, but the Preferred Alternative excludes four curve realignments in San Luis Obispo County that were included in the Build Alternative. Accordingly, vibration impacts would be expected to be lower for the Preferred Alternative than the Build Alternative.

Under the Preferred Alternative, the proposed components would have similar operational period effects as the Build Alternative and would, thus, result in similar vibration impacts as the Build Alternative. No new or worsened operational vibration effects would be expected with the Preferred Alternative.

Table 3.3-7 Vibration Compatibility of Preferred Alternative

Preferred Alternative Components	Land Use/Probability of Sensitive Receptors	Vibration Compatibility
King City Siding Extension	Agricultural	High in agricultural portions;
King City New Passenger Station	Mostly potentially Residential properties; 3 potentially Historic properties	Medium
Upgrades to Existing Alignment Section #7	Many potentially Residential properties; some Open Space/Undeveloped; 3 potentially Historic properties	High in Agricultural portions; Low in Residential portions
Upgrades to Existing Alignment Section #8	Many potentially residential properties; some open space/ undeveloped; 3 potentially historic properties	High in Open Space/Undeveloped portions; Low in Residential portions
Upgrades to Existing Alignment Section #9	Many potentially Residential properties; some Open Space/Undeveloped; 3 potentially Historic properties	High in Open Space/Undeveloped portions; Low in Residential portions

Source: Circlepoint, 2013; AECOM, 2013; ICF, 2013

Note: Sensitive receptors reported here may differ in some instances to those reported in **Table 3.3-4**. This is due to different screening distances used in the noise and vibration analyses.

Under the Preferred Alternative, the section between Soledad and King City would retain all Build Alternative components without modification, with the exception of the King City siding extension. The relocated siding extension would extend from MP 156.38 to the north end of the existing siding (MP 158.18), immediately adjacent to the existing railroad and within the railroad ROW. Under the Preferred Alternative, the siding extension would be located in an entirely agricultural area with low or no vibration sensitivity. Because the Preferred Alternative excludes four curve realignments in San Luis Obispo County, there is no new potential for additional vibration related effects resulting from curve realignments in this area. The inclusion of island CTC from McKay to Santa Margarita would not introduce any new potential sources for additional vibration over existing conditions. Therefore, the Preferred Alternative would have a reduced vibration impact compared to the Build Alternative.

3.3.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

The measures listed below are applicable to the Build and Preferred Alternatives and were identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. Individual components ~~improvements comprising the Build Alternative~~ would be designed to minimize noise and vibration impacts along the Corridor. ~~Strategies have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts.~~ The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures would also be identified during that review.

Mitigation strategies for *construction* noise and vibration impacts would generally include noise control measures that would be applied as needed. Such strategies include the following:

A-NO-1. Avoid nighttime construction in residential neighborhoods.

MIN-NO-2. Use specially quieted equipment with enclosed engines and/or high-performance mufflers.

MIN-NO-3. Locate stationary construction equipment as far as possible from noise-sensitive sites.

MIN-NO-4. Construct noise barriers, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers.

MIN-NO-5. Re-route construction-related truck traffic along roadways that will cause the least disturbance to residents.

MIN-NO-6. Where construction of components ~~improvements~~ requires deep foundations, avoid impact pile driving near noise-sensitive areas, where possible. Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use. If impact pile drivers must be used, their use will be limited to the periods between 8:00 AM and 5:00 PM on weekdays.

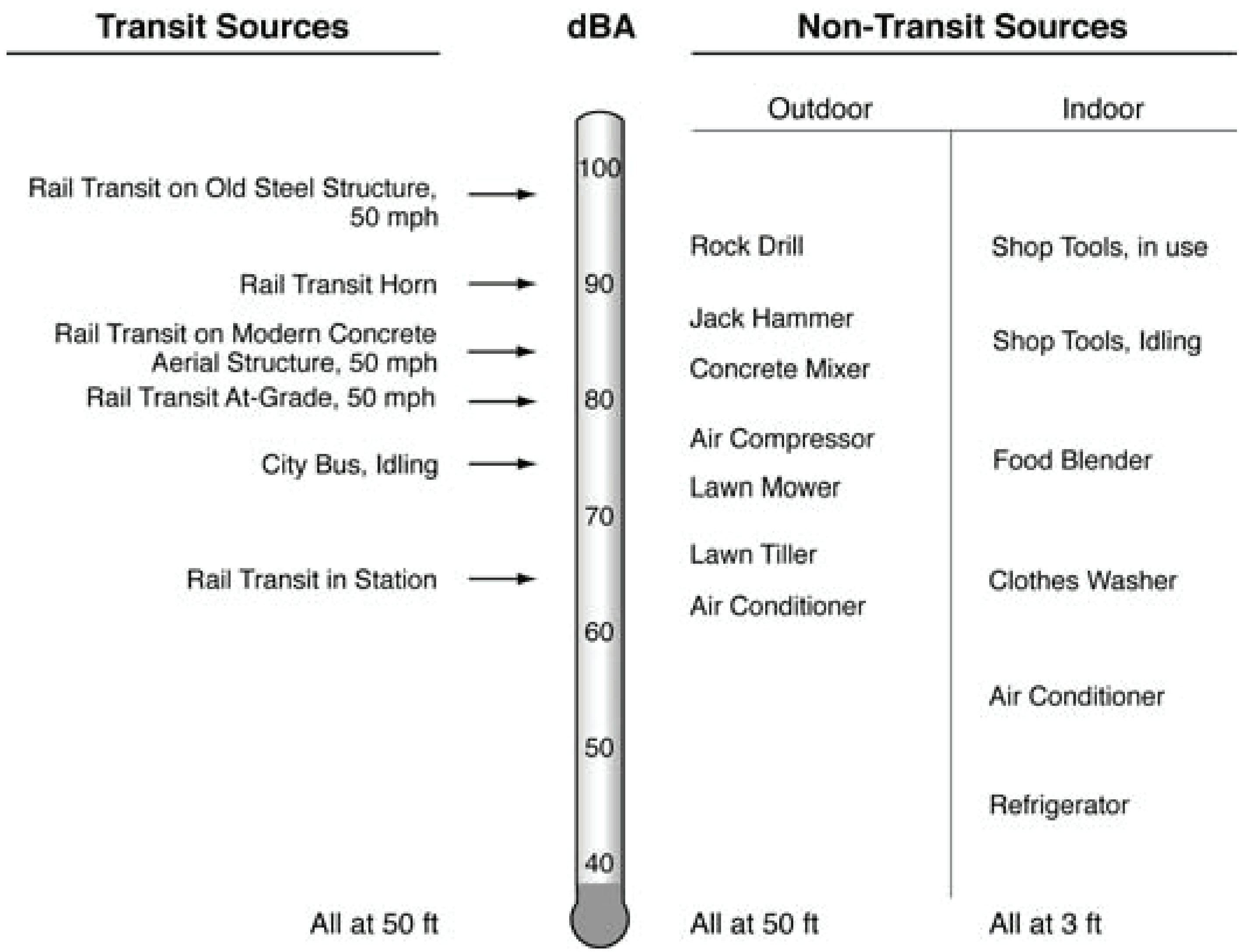
MIN-NO-7. Avoidance, minimization, and mitigation strategies for *operational* noise and vibration impacts ~~can~~ would generally be applied to the trains and the path between the train and the receiver or property.

- Noise barriers are a common approach to reducing noise impacts from surface transportation sources. Noise walls constructed near the railroad ROW ~~can~~ would shield sensitive receptors from train noise as well. Building sound insulation ~~can~~ would also be an effective mitigation strategy.
- Sound insulation to improve the outdoor-to-indoor noise reduction has been widely applied around airports and has seen limited application for rail projects. Although this approach has no effect on noise in exterior areas, it may be the best choice for sites where noise barriers are not feasible or desirable, and for buildings where indoor sensitivity is of most concern. Substantial improvements in building sound insulation (on the order of 5 to 10 dBA) can often be achieved by adding an extra layer of glazing to the windows, by sealing any holes in exterior surfaces that act as sound leaks, and by providing forced ventilation and air-conditioning so that windows do not need to be opened.
- Localities wishing to reduce train horn noise may take the steps needed to establish a new quiet zone. This would cease the use of train horns at public highway-rail grade crossings. The locality would be required to mitigate the increased risk associated with the absence of a horn before receiving approval of the quiet zone.
- Vibration impacts ~~can~~ would generally be reduced by vehicle wheel and track maintenance efforts. Additional track work and materials such as rail fasteners with soft and resilient elements ~~can~~ would provide greater vibration isolation than standard fasteners. Ballast mats made of rubber-like material can be placed on asphalt or concrete base with the normal ballast, ties, and rail on top. The reduction in ground-borne vibration provided by a ballast mat is strongly dependent on the frequency content of the vibration and design and support of the mat.

The appropriateness of these strategies would be determined upon subsequent analysis of project ~~improvements~~ components and ground conditions.

3.3.6 SUBSEQUENT ANALYSIS

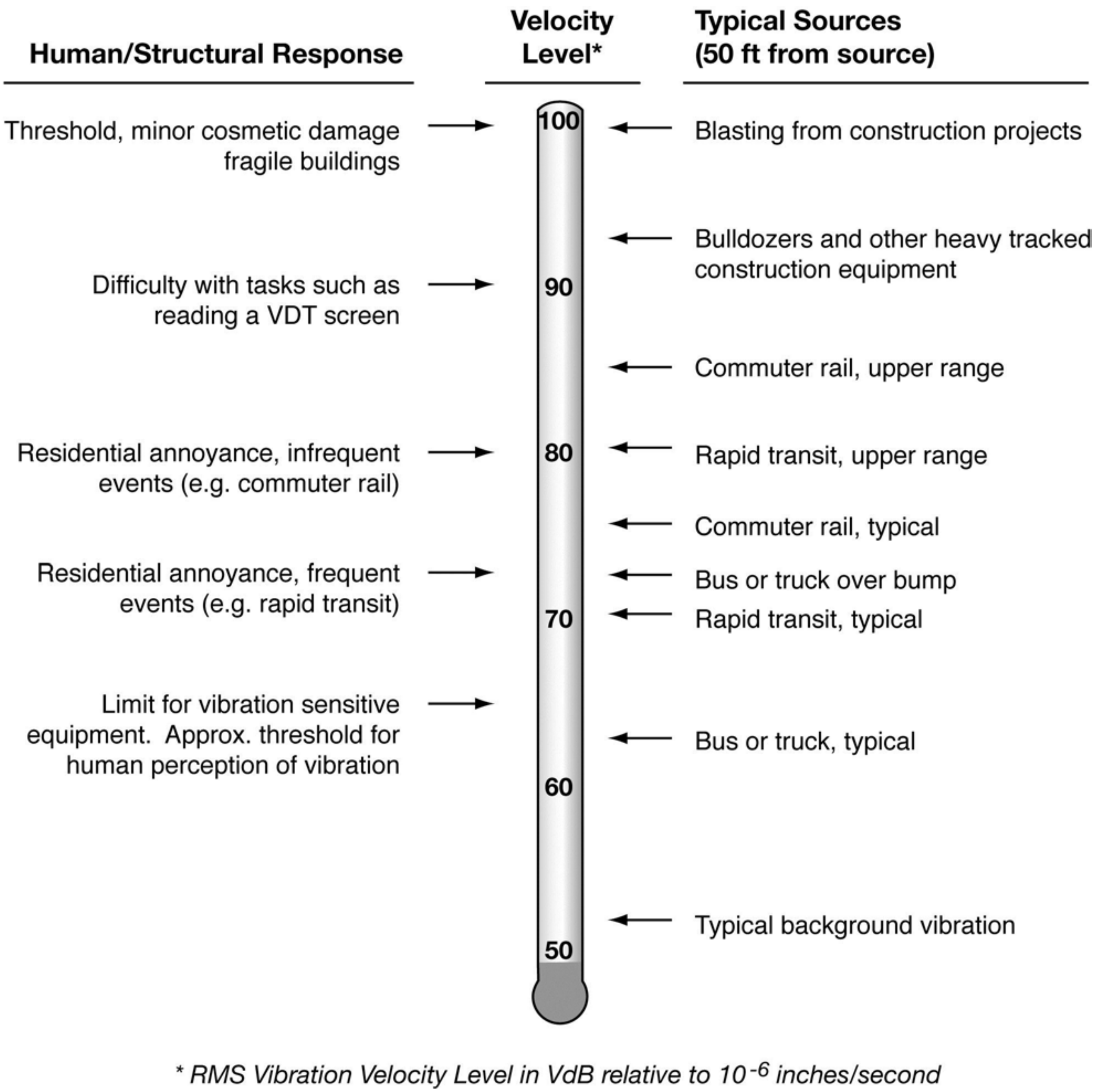
Prior to implementing ~~specific elements of the Build Alternative~~ any of the project components, additional noise and vibration analysis would be conducted to determine existing noise and vibration levels within the areas to be specifically affected and to calculate any increases in noise levels and vibration that may result from implementing the specific ~~improvement~~ component. If noise and vibration levels would increase substantially as a result of the ~~proposed improvement~~ component and would affect sensitive land uses, the evaluation will identify specific mitigation measures to be applied based on those discussed above.



Examples of Typical Outdoor Noise Exposure

Figure **3.3-1**

Source: FTA, 2006



Typical Ground-Borne Vibration Levels and Criteria

Figure **3.3-2**

Source: FTA, 2006

3.4 ENERGY

This section provides an analysis of the energy effects of the No Build and action alternatives measured in terms of estimated fuel consumption. ~~The analysis also considers~~ and construction period energy usage. The evaluation is based on preliminary estimates of projected increases in rail ridership and related potential diversions from other modes of transportation, as well as estimates of energy consumption during construction based data from similar projects.

This section describes updates and modifications made in response to comments on the Draft Program EIS/EIR. **Chapter 5.0, Comments and Coordination**, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. Of all comments received, 2 include reference to the energy analysis of the Draft Program EIS/EIR (A-3.21 and A-3.22) but do not warrant any changes to any of the Program EIS/EIR analysis (refer to **Chapter 5.0** for responses to comments).

3.4.1 REGULATORY REQUIREMENTS

3.4.1.1 Federal

Corporate Average Fuel Economy

Corporate Average Fuel Economy (CAFE) requires vehicle manufacturers to comply with the gas mileage, or fuel economy, standards set by the Department of Transportation (DOT). CAFE values are obtained using the city and highway fuel economy test results and a weighted average of vehicle sales. The EPA administers the testing program that generates the fuel economy data. ~~The National Highway Traffic and Safety Administration~~ NHTSA, part of DOT, is authorized to assess penalties based on the information EPA supplies and to modify the standards.

Executive Order 12185, Conservation of Petroleum and Natural Gas

Executive Order 12185 encourages additional conservation of petroleum and natural gas by recipients of Federal financial assistance.[1]

[1] December 17, 1979, § 44 F.R.75093

3.4.1.2 State

California Code of Regulations, Title 24, Part 6, Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations, Energy Efficiency Standards, ensures efficient energy use in new buildings constructed, or for additions and alterations to, residential and nonresidential buildings in California. The standards regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The standards are updated approximately every three years and are enforced through the local building permit process.[2] These standards may apply to the proposed passenger stations included within the ~~Build~~ action alternatives.

3.4.1.3 Local

Monterey County General Plan

The Monterey County General Plan Conservation/Open Space Element provides policies to promote efficient energy use. The use of solar, wind, and other renewable resources in new buildings is encouraged, minimization of energy expenditure for transportation, and directed development to conserve energy is favored.

San Luis Obispo County General Plan

The San Luis Obispo County General Plan Conservation and Open Space Element contains policies and implementation strategies related to energy conservation. These policies prioritize increased conservation and efficiency in all sectors of energy use, development and use of renewable resources, local control of energy decisions and sources, decreasing energy consumption, offering incentives for energy conservation, and integrating green building practices and incentives.

3.4.2 METHODS OF EVALUATION

This section describes the methods used to estimate the potential energy-related impacts and benefits associated with the project components ~~proposed rail improvements under study~~. Impacts resulting from construction and operation are identified and evaluated.

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[2] California Energy Commission, 2014

Operational Energy Use

Energy use from operations is the energy consumed in the actual operation of the train as it moves down the track. This energy usage accounts for more than half of the total energy used when analyzed in terms of the life of a project.

The analysis of transportation-related energy consumption focuses on the estimated fuel consumption relative to the use of existing transportation modes (auto, air, etc.). The energy consumption factors for automobiles were obtained from the *Transportation Energy Data Book: Edition 32,* which bases its estimates on national averages for road, traffic, and weather conditions and are intended for general comparisons.[3] The analysis uses ridership findings, diversions from other modes of transportation, and any difference in energy usage. Reviewing the ridership forecasts from the ~~Coast Daylight~~ SDP provides a quantitative basis for calculating the energy consumption from VMT reduction due to increased passenger rail ridership.

Construction Energy Usage

Construction energy usage is the energy needed to construct and maintain a facility, and manufacture and maintain vehicles using the facility. The primary construction energy consumption for this analysis is the energy that would be used to construct and maintain new rail infrastructure. This method uses construction energy intensity factors[4] to calculate energy consumption. **Table 3.4-1** presents the construction energy consumption factors used in this analysis. These estimates are appropriate for comparison purposes.

Additional energy resources would be consumed by the manufacturing and transportation of materials and equipment to and from any work sites. The amount of energy resources cannot be reasonably estimated without detailed construction plans and greater certainty about which elements of the ~~Build Alternative~~ action alternatives will move forward for further design and potential construction. Therefore, energy consumption associated with such uses would be evaluated during any subsequent project-level environmental review.

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[3] USDOE, 2013

[4] U.S. Congress, Budget Office 1977; U.S. Congress, Budget Office 1982; California State Department of Transportation 1983; ICF International, 2013

Table 3.4-1 Construction-Related Energy Consumption Factors

Type of Facility	Rural Compared to Urban[g]	Factor (billions of BTUs)
Highway – At grade	Rural[a]	17.07/one-way lane mile
	Urban[b]	26.28/one-way lane mile
Highway – Elevated	Rural[a]	130.38/one-way lane mile
	Urban[b]	327.31/one-way lane mile
Railway – At Grade	Rural[c]	12.29/one-way trackway mile
	Urban[d]	19.11/one-way trackway mile
Railway – Elevated	Rural[c]	55.46/one-way trackway mile
	Urban[d]	55.63/one-way trackway mile
Railway – Tunnel	NA[d]	99.51/one-way trackway mile
Railway – Station	NA[e]	78[f]/station

a Estimates reflect average roadway construction energy consumption.

b Estimates reflect range maximum for roadway construction energy consumption.

c Estimates reflect typical rail system construction energy consumption.

d Estimates reflect energy consumption for BART system construction as surrogate for rail construction through urban area.

e Discreet (i.e., non-alignment-related facilities) are not differentiated between rural or urban because the data used to develop the respective values were not differentiated as such. Some difference between the actual values might be expected.

f Value for construction of freight terminal. Used as proxy for station consumption factors.

g Differences between the construction-related energy consumption factors for urban and rural settings reflect differences in construction methods, demolition requirements, utility accommodation, etc

Source: U.S. Congress, Budget Office 1977; U.S. Congress, Budget Office 1982; California State Department of Transportation 1983; ICF International, 2013

3.4.3 AFFECTED ENVIRONMENT

The study area for energy use is the portion of the Coast Corridor between Salinas and San Luis Obispo, including the areas inside and outside of the existing railroad ROW in which potential physical components ~~improvements~~ would be constructed.

3.4.3.1 Regional Environment

The transportation sector consumes the most energy of all sectors in California, making up approximately 38 percent of the total energy budget.[5] According to the California Energy Commission (CEC), the population in California is expected grow at an annual compound average rate of 1.1 percent between 2009 and 2030.[6] By 2020, California's infrastructure will face increased demands given the estimated 11 million more people and 98 million added intercity trips. This anticipated population growth is expected to result in increased demand for travel in California.

In general, demand for transportation services (and, therefore, transportation-related energy use) mirrors growth in population and economic output. In California, the CEC used historical trends coupled with current population and economic growth and gasoline price projections to estimate that on-road miles traveled will increase by 41 percent between 2003 and 2025 statewide—from 314 billion to 446 billion. Notwithstanding this large increase, the CEC predicts that in-state road transportation fuel gasoline usage is anticipated to remain steady at about 15 billion gallons of gasoline (315 million barrels of oil-equivalent) per year, as a result of the introduction of more fuel-efficient cars.[7]

3.4.3.2 Electricity Demand

The portion of the Coast Corridor considered in this document is located within the 70,000 square-mile service area of Pacific Gas and Electric (PG&E), a large investor-owned utility that serves 15 million people throughout northern and central California. PG&E produces or buys its energy from a mix of conventional and renewable generating sources, which is then delivered via 141,215 circuit miles of electric distribution lines and 18,616 circuit miles of interconnected transmission lines.[8]

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[5] EIA, 2011

[6] CEC, 2010, p. 11

[7] CEC, 2005a

[8] PG&E, 2013

3.4.4 ENVIRONMENTAL CONSEQUENCES

3.4.4.1 No Build Alternative

The No Build Alternative assumes that the only physical rail component ~~improvement~~ that would be added between Salinas and San Luis Obispo would be the implementation of PTC. Construction-period energy use would be assumed during implementation of such ~~improvements~~ components; operation of PTC would also require additional energy usage above existing levels.

Under the No Build Alternative, enhancement of passenger rail operations between Salinas and San Luis Obispo would not occur and existing passenger rail service would continue, including the Coast Starlight and Amtrak service to Southern California. Therefore, there would be little or no change in operational energy consumption related to passenger rail service in the Corridor.

As set forth in Chapter 9 of the SDP, freight rail operations in the Corridor are projected to increase. As of 2013, 2 daily long-haul freight trains travel between Salinas and San Luis Obispo. By the year 2020, the SDP projects that a total of 4 daily long-haul freight trains would travel along the Corridor. Accordingly, energy consumption related to freight rail would likely increase over existing conditions, though new freight rail service would potentially utilize newer, more energy efficient locomotive technology.

3.4.4.2 Build Alternative

Construction-Period Energy Usage

The Build Alternative would result in construction energy usage for the manufacture of materials, construction activities and equipment associated with implementation of the ~~proposed rail improvements~~ Build Alternative components, travel of construction workers, and potential traffic delays and/or detours (rail and auto) as a result of construction.

Energy-related consumption factors for construction activities are presented in **Table 3.4-1.** Construction-related energy consumption for locomotives varies between 12 and 60 million British thermal units (BTU), depending on the location of construction (i.e., urban/rural and elevated/at-grade).

The energy used during construction would be any additional energy consumption beyond what is associated with the No Build Alternative. This would constitute irretrievable energy expenditure. Specific design and construction plans are needed to calculate the construction-related energy consumption associated with each ~~physical improvement~~ Build Alternative component.

Operational Energy Consumption

The Build Alternative would result in operating 2 additional trains per day, which would result in additional energy consumption.

Implementation of new service would likely result in increased ridership. It is expected that some, if not all of the additional passengers would have traveled via personal automobile or bus. Reviewing the ridership forecasts from the ~~Coast Daylight~~ SDP can provide a quantitative basis for calculating the energy consumption from VMT reduction due to increased passenger rail ridership. **Table 3.4-2** below from the ~~Coast Daylight~~ SDP presents annual ridership forecasts for 2020 and 2040.

Table 3.4-2 2020 and 2040 Annual forecasts for Coast Daylight Service Options

	Forecast Year 2020		Forecast Year 2040	
	Baseline	Build	Baseline	Build
	Annual ridership			
Coast Daylight				
Markets North of San Luis Obispo	0	87,000	0	217,000
Markets Through San Luis Obispo	0	37,000	0	57,000
Total	0	124,000	0	274,000
Coast Starlight				
Markets North of San Luis Obispo	74,000	73,000	103,000	107,000
Markets Through San Luis Obispo	28,000	32,000	37,000	43,000
Total	102,000	105,000	140,000	150,000

Source: Caltrans Division of Rail, 2013b

The SDP forecasts increased ridership with the advent of new service, which would result in an overall decrease in automobile VMT. As shown in **Table 3.4-2**, the SDP projects that Coast Daylight service would generate about 124,000 annual person trips by 2020. This averages to about 300 person trips per day. The SDP roughly quantifies the increase in rail ridership into a projected reduction of about 11,000 daily VMT for the Central Coast/Monterey Bay region as a whole. The projected expansion of Coast Daylight service by the year 2040 would further reduce VMT in the Central Coast/Monterey Bay region by an additional 15,000 daily miles (26,000 daily miles total). It is expected that a portion of these passengers would be using the rail service in place of vehicle, bus, or air travel, thus reducing transportation-related energy consumption. These VMT reductions comprise relatively small amounts of total regional VMT and are, thus, expected to translate to small reductions in energy consumption.

Table 3.4-3 presents energy use associated with various types of passenger travel from 2011.

Table 3.4-3 Passenger Travel and Energy Use, 2011

				Energy Intensities		
	Vehicle Miles (millions)	Passenger Miles (millions)	Load factor (persons/ vehicle	(Btu per vehicle mile)	(Btu per passenger mile)	Energy Use (trillion Btu)
Cars	1,561,400	2,420,325	1.55	5,214	3,364	8,140.0
Transit Buses	2,425	21,574	8.9	37,718	4,240	91.5
Air (certified route)	5,542	566,622	102.2	269,681	2,638	1,494.7
Intercity Rail (Amtrak)	296	6,670	22.5	49,080	2,214	15.5

Source: USDOE, 2013.

As shown in **Table 3.4-3**, travel by rail is the most energy efficient mode of long-distance, intercity transportation. Intercity rail, such as Amtrak, consumes about 1,000 to 2,000 BTUs per passenger mile less than bus or automobile. This would result in substantial BTU savings per passenger mile, which over the life of the project would result in notable energy savings relative to the No Build Alternative.

Travel by airplane is also more energy efficient on a mile-by-mile basis when compared to automobiles and buses; however, air service is not a viable mode of transportation between Salinas and San Luis Obispo. Moreover, intrastate and other “short-hop” flights are generally considered less efficient on a fuel-per-mile basis, owing to substantial fuel requirements associated with take-off.

It should be noted that the rail would be more energy efficient only when sufficient number of passengers use the train. An empty train would not reduce energy consumption. The addition of the Coast Daylight service would have the potential to reduce automobile and bus VMT and energy consumption, but it would also increase rail VMT and associated energy consumption. The displacement of automobile VMT to increased ridership on the railway would result in reduced transportation-related energy consumption. However, rail trips would occur regardless of whether a person would choose to travel by car or by rail. Thus, there would only be a decrease in energy consumption if the traveler chooses to travel by rail instead of automobile.

Physical Improvements

Track Upgrades

Construction-Period Energy Usage

Construction of the track retrofits and upgrades would require manufacturing of steel to replace all lumber ties that are currently in place along the alignment. Manufacturing the steel and other materials for these track upgrades would increase indirect energy use.

Moderate energy consumption would also result from the use of powered construction equipment and travel of workers to work sites. Diesel powered trucks and/or locomotives would be needed to bring equipment and supplies to active construction areas. Additional temporary energy consumption would result from idling or slowed locomotives due to construction related interruptions to the existing railway.

Operational Energy Usage

Upgraded tracks would result in greater efficiencies by reducing friction and vibrations. Furthermore, proposed steel rail ties are recognized to require less maintenance, thereby resulting in reduced energy consumption from maintenance vehicles and equipment.

Signal Upgrades/New Powered Switches

Construction-Period Energy Usage

Construction of the signal upgrades and new powered switches would result in minimal indirect energy consumption. Manufacturing the materials needed and delivering them to the construction site would require energy use; however, the quantity needed is dependent on the number of signals that would be replaced/upgraded, which is currently unknown. Some energy consumption would occur associated with worker travel to and from the construction sites, but extensive use of heavy machinery to install these components ~~improvements~~ is not anticipated.

Operational Energy Usage

The signal upgrades and new powered switches would improve operational service and reliability. Under the current Track Warrant Control (TWC) portions of the alignment, train operators must wait for permission from UPRR dispatchers before moving from block to block, slowing train speeds and resulting in periods of idling. CTC manages this centrally via remotely controlled signals and switches, reducing the amount of time trains spend idling, ultimately increasing the efficiency of the railway infrastructure.[9] These upgrades would likely improve the safety, efficiency, and reliability of service, which could result in greater ridership due to improved service, as well as allow for denser rail use (more trains on the railroad due to greater traffic control and efficiency). This would result in more energy consumption with more trains using the rail, but operations would run more efficiently and, thus, consumption would be offset by increased ridership (less individual VMT) and less time spend idling on the rail.

Curve/Track Realignments

Construction-Period Energy Usage

Construction of the curve and track realignments would result in increased indirect energy consumption from materials manufacturing. Operation of potential construction equipment, construction worker travel, as well as delays and detours during construction of the track realignments, would also lead to additional energy consumption. Some of this increased energy consumption would be offset by improved service efficiency and subsequent increased ridership and related reduction in VMT. Given that the curve realignment designs are schematic, specific energy reduction resulting from improved service cannot be quantified.

Operational Energy Usage

Operational energy use may increase from improved train speeds along the Corridor ~~resulting~~ from track straightening. If one or more curve realignments ultimately reduce the length of the railway, this would offset some of the increased energy

[9] Caltrans Division of Rail, 2013b, p. 9-4

consumption related to higher speeds. Furthermore, increased train speeds would serve to improve train service, resulting in increased ridership and reduced consumption from personal automobiles.

Sidings/Siding Extensions and New Second Mainline

Construction-Period Energy Usage

Construction of new sidings, siding extensions, and the new second mainline would increase indirect energy consumption from new materials manufacturing. Operation of required construction equipment and construction worker travel would also lead to additional energy consumption. Some of this increased energy consumption would be offset by improved service efficiency and subsequent increased ridership and related reduction in VMT.

Operational Energy Usage

Operational efficiency would increase with new and improved siding extensions and the new second mainline. There would be fewer passenger train delays as the new sidings would accommodate longer freight trains. Increased freight train delays could occur, resulting in increased freight rail energy consumption due to idling. However, overall less train idling could potentially occur due to more optimal locations of siding and increased train speeds. Operation of the new second mainline, along with improved signaling, would increase train speeds and result in increased locomotive efficiencies (in mpg), and could potentially reduce overall operational energy consumption. Personal automobile VMT and associated energy consumption would likely be reduced by improving the passenger rail service, and result in increased rail ridership.

New Stations

Construction-Period Energy Usage

Construction of the new passenger stations in Soledad and King City would increase indirect energy consumption resulting from manufacturing, operation of required construction equipment, and construction worker travel. However, the stations themselves would consist of a platform and minimal amenities, thus requiring nominal construction materials. Some of this increased energy consumption would be offset by increased ridership and related reduction in automobile VMT.

Operational Energy Usage

Operation of the new passenger stations would consume some energy, mostly to operate ticket stations, restrooms, and other general daily building energy needs. Both stations are anticipated to be simple, thus energy requirements will likely be low. Additional train stations would introduce new stops along the alignment, and could be expected to use more energy to accelerate and decelerate in these locations. Increased accessibly to the new stations would likely increase ridership, and would offset some of the added energy consumption by reducing personal vehicle VMT.

3.4.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the location-specific physical components. The only differences are that the Preferred Alternative incorporates revised draft plans for the City of King passenger station, includes a modified footprint for the King City siding extension, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative explicitly includes the aforementioned 27 mile “island” of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects related to energy for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded features are located. The discussion below assesses energy effects relative to such modified or excluded features.

Construction-Period Energy Usage

In the Preferred Alternative, construction activities would be similar to those described under the Build Alternative. The Preferred Alternative’s key changes include modifications requested by the City of King to a siding extension and station area, 27 miles of “island” CTC (signal upgrades), and the removal of four curve realignments through the same general area. The Preferred Alternative would increase the length of the siding extension in the City of King from 10,000 feet to 14,800 feet. As a result, this would require more energy to construct than under the Build Alternative. However, given the reduced footprint of the new City of King passenger station and exclusion of four curve realignments, the Preferred Alternative would result in lower energy use compared to the Build Alternative. Installation of island CTC would not be expected to require heavy-duty, energy intensive machinery for installation. Accordingly, construction-period energy expenditures under the Preferred Alternative would be similar to or lower than under the Build Alternative.

Operational Energy Consumption

In the Preferred Alternative, Coast Daylight service would operate in the same capacity as in the Build Alternative and would, thus, result in similar energy requirements as the Build Alternative with additional service. No new or worsened operational energy expenditures would be expected with the Preferred Alternative.

3.4.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

~~Avoidance, minimization, and mitigation measures would be developed and implemented as specific improvements are implemented to reduce potential energy related impacts. Such strategies may include the following:~~

The measures listed below are applicable to the action alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

MIN-ENG-1. Develop and implement a construction energy conservation plan.

MIN-ENG-2. Explore the opportunity to use newer, more energy efficient construction equipment and materials.

MIN-ENG-3. Consider, as feasible, acquisition of energy-efficient rolling stock to provide new passenger service.

MIN-ENG-4. Implement a program to encourage construction workers to carpool or use public transportation to get to and from active work sites.

MIN-ENG-5. As feasible, minimize grade changes in steep terrain areas to reduce the use of diesel fuel.

MIN-ENG-6. Encourage the development of intermodal transit connections to reduce automobile VMT associated with the railway.

3.4.6 SUBSEQUENT ANALYSIS

As specific components of the ~~Build Alternative~~ project are further designed, a more refined analysis of operation and construction energy usage would be conducted. Evaluation and identification of appropriate mitigation measures will be conducted during project-level review where ~~the impacts to energy usage would be substantial~~ appropriate.

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3.5 LAND USE AND PLANNING, COMMUNITIES AND NEIGHBORHOODS, PROPERTY AND ENVIRONMENTAL JUSTICE

This section evaluates potential land use and community effects related to the ~~proposed~~ No Build and action alternatives and includes an assessment of potential ~~Justice effects~~ impacts to low income and minority populations.

This section describes updates and modifications made in response to comments on the Draft Program EIS/EIR. **Chapter 5.0, Comments and Coordination**, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. Of all comments received, six comments (A-3.23 through A-3.28) reference the land use/environmental justice section of the Draft Program EIS/EIR.

The Draft Program EIS/EIR over-reported certain permanent impacts associated with new sidings and siding extensions. Farmland Mapping and Monitoring Program (FMMP) data was used for analyzing impacts to agricultural resources. FMMP data does not account for roads, highways, or railroads. Permanent impacts to FMMP categories were thus over-reported due to overlap between existing railroad ROW (e.g., permanent siding and track/signal upgrade footprints) and FMMP mapping data (known as polygons). Therefore, this Final Program EIS/EIR correctly reports permanent impacts resulting from the project components as zero since farmland does not exist within the railroad ROW.

3.5.1 REGULATORY REQUIREMENTS

3.5.1.1 Federal

United States Army National Guard

An approximately 7.5 mile long portion of the existing Coast Corridor railroad travels through Camp Roberts, a US Army training facility. Within Camp Roberts, the Army leases the railroad right of way to UPRR. Easements through this and other Army National Guard properties are regulated under 10 USC 2668.[1]

[1] Gardner, Orlando. Realty Officer. Army Corps of Engineers. March 13, 2013 - phone communication.

Los Padres National Forest

About 2 miles of the existing Coast Corridor railroad traverses the Los Padres National Forest near the Cuesta Grade north of the City of San Luis Obispo. The existing railroad travels through privately held land within the boundaries of the National Forest. The Los Padres National Forest, like other national forests, includes a mix of public and privately held properties within its boundaries.

Uniform Relocation Assistance and Real Property Acquisition Policies Act

The Uniform Act was enacted by Congress to ensure that owners of real property that is acquired for federal and federally-assisted projects and persons displaced as a direct result of such projects are treated fairly, consistently, and equitably.[2] In the event any of the proposed improvements use federal assistance towards property acquisition, adherence to the Uniform Act is required.

To comply with the Uniform Act and its implementing regulations, all property owners and any persons displaced by a federally funded project must be informed in writing of their status and eligibility for any payments or assistance. Such payments and assistance may include, but are not necessarily limited to, the following:

- Just compensation for property acquired, whether in fee, easement, or other form of property rights acquisition. Just compensation will be established by an approved appraisal of fair market value or other processes defined in the Uniform Act and the regulations.
- An opportunity for the property owner to accompany the appraiser during inspection of the property.
- Eligible closing costs and other expenses related to the transfer of property.
- Assistance in finding and relocating to replacement property.
- Eligible expenses for moving personal property to a replacement site.
- Replacement housing payments and related expenses for displaced residential owners and tenants.
- Business reestablishment payments to small business and other defined eligible entities.

[2] 42 U.S.C. 4601 et seq.

- Written noticed informing property owners and displaced persons of their rights and eligibility for assistance.
- A notice that no one will be required to move from the acquired property from which they are being displaced for a minimum of 90 days.

Executive Order No. 12898

Executive Order No. 12898 requires all federal agencies to identify and address, as appropriate, any disproportionately high adverse human health and environmental effects of their programs, policies, and activities, on minority populations and low-income populations in the United States.[3]

In summary, the Order directs Federal agencies to conform to existing laws such that their actions:

- Do not discriminate on the basis of race, color, or national origin;
- Identify and address disproportionately high and adverse health or environmental effects of their actions on minority and low-income populations;
- Provide opportunities for community input in the NEPA process, including input on potential effects and mitigation measures.

US DOT Order 5610.2(a) (2012) on environmental justice has defined "disproportionately high and adverse effect on minority and low-income populations" to mean an adverse effect that is predominately borne by a minority population and/or a low-income population, or will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.[4] According to CEQ, agencies are required to make diligent efforts to involve the public throughout the NEPA process and the participation of low-income, minority, and tribal populations are necessary. Therefore, adequate outreach to these communities may require adaptive or innovative approaches to overcome potential linguistic, cultural, economic barriers that would affect their participation.

[3] Executive Order No. 12898, 1994

[4] DOT Order 5610.2, Appendix Definitions, sub.[g]

Title VI of the Civil Rights Act of 1964

Under Title VI, each Federal agency is required to ensure that no person, on the ground of race, color, or national origin, is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal financial assistance.

3.5.1.2 State

California Department of Fish and Wildlife

The existing railroad is immediately adjacent to the Big Sandy Wildlife Area, a nature reserve along the Salinas River under the jurisdiction of the California Department of Fish and Wildlife (CDFW). CDFW has no local area land use plan for Big Sandy Wildlife Area.[5] Title 14, Section 550 of the California Code of Regulations grants the Regional Manager the authority to regulate public use of designated State wildlife areas. The southern portion of Big Sandy Wildlife Area is coterminous with a section of the Camp Roberts Military Reservation.

3.5.1.3 Local

Local agencies with land use jurisdiction in the study area are the counties of Monterey and San Luis Obispo, and the cities of Salinas, Soledad, King, Paso Robles, and Atascadero. The existing rail alignment also traverses the incorporated City of Gonzales, but no new facilities outside the railroad ROW are proposed there.

Monterey County General Plan

The Monterey County General Plan Land Use and Circulation Elements establish policies to guide the maintenance and expansion of rail service in the county. The plan protects the potential for future rail transportation and supporting facilities in major industrial and commercial centers. The plan includes a general framework to encourage growth within or near incorporated cities and designated community areas where existing services are available. Transit-oriented development around existing and future transportation infrastructure is also encouraged.[6]

City of Salinas General Plan

The Circulation Element of the City of Salinas General Plan directs the city to work with Amtrak to provide commuter rail service to the Silicon Valley and other major

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[5] Personal Communication with Bob Stafford on March 8, 2013.

[6] County of Monterey, 2007, Circulation Element

destinations. The plan also includes specific policies to support maintenance and expanded use of the City's Intermodal Transportation Center, the local Coast Corridor stop. The plan contains broad policies and programs to support an integrated transportation network and supportive land use.

City of Soledad

The City of Soledad General Plan includes a goal to establish a train station in the downtown area. The General Plan includes additional goals and policies to promote residential and commercial development in close proximity to the station to make transit use a convenient and viable alternative transportation mode.

The General Plan's goal for a station was furthered through the City's adoption of a Downtown Specific Plan, which calls for the development of an Intermodal Transit Station around where the existing railroad travels through Soledad. The Specific Plan includes a schematic diagram for the station area, including passenger platforms, parking, and ticket kiosks. Prior to adopting the Specific Plan, the City certified an accompanying EIR that examined program-level effects of the proposed station as part of a larger program of land use and transportation changes in the downtown area.

City of King General Plan

King City has adopted several documents that contain plans and policies supporting a downtown passenger rail station along the existing railroad tracks that traverse the city. The Historic Corridor Revitalization Plan includes plans for public investment and development in the area surrounding the proposed station. The rail stop is identified as an important part of the revitalization effort, serving commuters, tourists, and downtown businesses.

Further, the First Street Corridor Master Plan includes conceptual station design plans. The plan shows a layout of platforms, parking, and intermodal connection points. As described in **Chapter 2.0, Alternatives**, since publication of the Draft Program EIS/EIR the City of King has adopted draft revised plans for the Multi-Modal Transportation Center – Conceptual Design [(MMTC) (2014)].

San Luis Obispo County General Plan

The San Luis Obispo General Plan Circulation Element identifies the current rail station in San Luis Obispo as an important component of the regional transportation network. The plan calls for coordination between different modes of transportation to reinforce federal, state, regional, and local agency goals.

City of El Paso de Robles (Paso Robles) General Plan

The Paso Robles General Plan promotes regional, interstate, and intrastate rail service through a broad range of action items, including support of expanding Amtrak rail service, and improvements to existing railroad crossings.[7] Paso Robles has also adopted policies and action items to retain the rural, open space, and agricultural areas surrounding the city. The city intends that its designation of a "Purple Belt" (wine grape belt) will preserve agriculture and open space and limit the conversion of lands from viticultural to urban uses.[8]

City of Atascadero General Plan

The City of Atascadero General Plan recommends improving passenger service on the Coast Starlight. The Plan also identifies opportunities to replace existing at-grade crossings with grade separation structures.[9, 10]

City of San Luis Obispo General Plan

The General Plan for the City of San Luis Obispo includes plans to develop tourism services around the existing train station.[11] The plan further stipulates that residential areas should be separated or screened from the railroad right-of-way.[12]

3.5.2 METHODS OF EVALUATION

In this analysis, a land use impact is considered significant on the basis of compatibility with applicable local land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental impact. Proposed components ~~improvements~~ are considered significant if determined to conflict with any applicable habitat conservation plan or natural community conservation plan. Additionally, impacts are evaluated for their potential to physically divide an established community.

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[7] City of El Paso de Robles, 2011, Circulation Element

[8] City of El Paso de Robles, 2003, Open Space Element

[9] City of Atascadero, 2002, p. III-5

[10] The Coast Corridor project does not propose any changes to the crossings in Atascadero. The project presumes leaving these crossing intact. This decision does not, however, preclude the City from proceeding with new grade separations in conjunction with Union Pacific.

[11] City of San Luis Obispo, 2010, p. 1-43

[12] City of San Luis, 2010, p. 1-29

The Draft Program EIS/EIR included siding and siding extension in its operational impact analysis. As discussed above in **Section 3.5.1**, operational impacts to agricultural and forest resources were over-reported in the Draft Program EIS/EIR, and included areas within existing ROW. Therefore, permanent impacts due to sidings and siding extensions have been revised to report as zero since no protected farmland is assumed to exist within the railroad ROW.

Study Areas

Land Use

The land use study area includes the existing railroad ROW and surrounding "buffer areas" whose sizes are based on the type of ~~proposed~~ physical component ~~improvement~~. The study area distances account for the amount of land that would potentially be directly and indirectly disturbed based on the anticipated severity of the construction associated with different ~~types of improvements~~ project components.

- **Curve Realignments:** The study area was comprised of 100 feet on either side of proposed realignments for permanent impact areas and 200 feet on either side of the proposed alignment for temporary impact areas.
- **Siding Extensions and New Siding:** The study area was comprised of the existing railroad ROW for permanent impact areas and 50 feet on either side of the proposed alignment for temporary impact areas.
- **Second Mainline**: The study area was comprised of the existing railroad ROW for permanent impact areas and 100 feet on either side of the ROW for the proposed second mainline.
- **Stations:** The proposed station impact area is the permanent station footprint within the community. Accordingly, these stations footprints are the same as the station footprints assessed within these local jurisdiction's planning documents.[13]

To assess potential property acquisition requirements, the study area is 100 feet on either side of the alignment centerlines. The study area is intended to represent such properties requiring partial or full acquisitions. The study area includes

[13] The Draft Program EIS/EIR used the *First Street Corridor Master Plan* (2013) to assess potential City of King station impacts related to geology and soils. In response to comments provided by the City of King, the Preferred Alternative uses the conceptual station plans from the *Multi-Modal Transportation Center – Conceptual Design* (2014).

portions of several communities and neighborhoods, as discussed further in **Subsection 3.5.2, Environmental Consequences**.

Environmental Justice

For environmental justice impacts, the study area extends to 1 mile on either side of the centerline of proposed alignment changes and 1 mile from the two proposed new station areas. The breadth of the environmental justice study area provides a conservative estimate of the extent to which the ~~Build Alternative~~ action alternatives might result in disproportionately high or adverse effects on minority and/or low income populations.

The analysis was conducted using existing U.S. Census 2010 tract and block group data compiled in a ~~geographic information systems~~ GIS format. Additionally, aerial photos, field observations, review of local general plans or regional plans, and informal consultation with local planning agencies on current and planned land uses all informed this analysis.

Land Use Compatibility

Land use compatibility was determined by comparing the proposed physical components ~~improvements~~ with existing land uses. Accordingly, each type of land use was assigned a compatibility rating of low, medium, or high based on the sensitivity of the existing land use within the ~~proposed improvement~~ study areas. For this program-level review, compatibility determinations were based on general plan land use designations.[14]

Table 3.5-1 summarizes the potential compatibility rating of the proposed physical components ~~improvements~~ with existing land use. A ~~proposed improvement~~ project component was considered *highly compatible* if it would be located in areas planned for transportation multi-modal centers or corridor development, redevelopment, economic revitalization, transit-oriented development, or high-intensity employment uses. A ~~proposed improvement~~ project component would have *medium* compatibility if it would require the conversion of land intended for multi-family residential, schools, low-intensity industrial, and hospital uses. Compatibility would be considered *low* if ~~an alternative~~ a project component would be potentially inconsistent with local or regional planning documents. As the table indicates, some land use types can result in varying degrees of compatibility

[14] In some instances, local general plans do not designate the existing railroad right-of-way as a transportation use, but rather as whatever the adjacent land use may be. Accordingly, potential effects to various land use categories may be overstated.

depending on context. Agriculture is one such use; it is also the predominant land use throughout the entirety of the corridor. High compatibility is assumed for components ~~improvements~~ traveling along agricultural lands, but low compatibility is assumed if a ~~improvement~~ component requires the conversion of existing agricultural lands to transportation use. As further discussed in **Section 3.7, Agricultural and Forest Resources**, farmland in both Monterey and San Luis Obispo counties is highly protected.

Table 3.5-1 Compatibility of Land Use Types

Low Compatibility	Medium Compatibility	High Compatibility
Single-family residential, community parks, neighborhood park, habitat conservation area, elementary/middle school (widened or new right-of-way needed), agricultural (when widened or new right-of-way needed)	Multifamily residential, high schools, low-intensity industrial, hospitals	Business park/regional commercial, multifamily residential, existing or planned transit center, high intensity industrial park, service commercial, commercial recreation, college, transportation/utilities, high-intensity government facilities, airport or train station, agricultural (no new right-of-way needed)

Source: Circlepoint, 2013

Property

The analysis assessed existing land uses located adjacent to each proposed alignment. Potential property acquisitions were determined based on the potential acreage that would be needed for a given physical component ~~improvement~~ and whether the land use-type was particularly sensitive to change. Accordingly, **Table 3.5-2** ranks potential property acquisitions as high, medium, or low based on land use-type**.** Potential impacts include partial or full acquisition of properties, displacement and relocation of existing uses, or demolition of properties.

Table 3.5-2 Rankings of Potential Property Impacts

	Urban/ Suburban	Industrial	Agricultural	Open Space
Build Alternative Requirements				
No additional right-of-way required	Low	Low	Low	Low
Widening of existing right-of-way required	High	Medium	High	Medium

	Urban/ Suburban	Industrial	Agricultural	Open Space
New corridor (new right-of-way required)	High	High	High	High

Source: Circlepoint, 2013

To identify potential property acquisitions, land uses in the study area were characterized by type and cross-referenced against aerial maps to determine potential direct impact to structures.

In **Table 3.5-3** below, property acquisitions are assessed as a percentage of private property that would need to be acquired to complete each physical component ~~improvement~~. This calculation considers the acreage of private land that would be required for construction as a percentage of the total acreage required for construction.

Communities and Neighborhoods

This section also considers potential impacts on communities and neighborhoods. A potential impact to communities and neighborhoods was identified if one of the ~~proposed improvements~~ project components would divide an established residential community where no division exists under current conditions, potentially causing a physical disruption to community cohesion. For the most part, physical components ~~improvements~~ to existing transportation corridors would not create substantial new community barriers.

Environmental Justice

Environmental justice impacts were determined by comparing the minority and low-income populations of the study area to the demographics of the nearby cities and counties. U.S. Census data was reviewed to determine if such minority or low-income populations existed within or near the study area using the following thresholds.

Communities were considered to be minority or low income if they met at least one of the following criteria:

- Whether at least 50 percent of the population in the study area may be minority or 25 percent of the population in the study area is low-income;
- Whether the percentage of minority or low-income population in the study area may be at least 10 percent greater than the average generally in the county or community.

After environmental justice communities were identified, the analysis determined whether the ~~proposed~~ physical components ~~improvements~~ would occur within or adjacent to ~~an~~ the existing ~~transportation right-of-way~~ railroad ROW or require a new alignment potentially encroaching into an environmental justice community.[15]

The assessment of potential impacts on minority and low-income populations took into consideration the size and type of ROW acquisition that would be necessary for the components ~~improvements~~. For example, if the proposed alignment would be within an existing ROW, the potential for impacts would be lower than if the alignment would require a new ROW acquisition.

Nearly all of the proposed components ~~improvements~~ evaluated under the ~~Build Alternative~~ action alternatives would be located within or adjacent to existing transportation corridors, largely (but not fully) reducing the potential for significant adverse impacts generally. This analysis considers the ~~Build Alternative~~ action alternatives on a corridor-wide basis.

3.5.3 AFFECTED ENVIRONMENT

A spectrum of different land uses line the corridor. Agricultural uses are predominant along the length of the corridor from Salinas to San Luis Obispo, but urban and suburban uses are present near city centers. Additional information about the location and character of these uses, as well as information about property ownership, communities and neighborhoods, and environmental justice are provided below.

3.5.3.1 Existing Land Uses

Urban/Suburban

Urban/suburban uses can include residential, commercial, and recreational uses and are generally concentrated near the cities of San Luis Obispo and Salinas. Smaller towns such as Gonzales, Soledad, King City, Paso Robles, and Atascadero also support urban uses along the corridor.

[15] Census *tract* data are used here as a reasonable, best-available proxy for the analysis of impacts to low-income populations, since as of September 2013, block group level data is not available. Block group data for minority populations is available, and is used in this document.

Agricultural

Between developed areas, agricultural uses predominate. Agricultural areas are most common in the Salinas Valley and inland Central Coast region. **Section 3.7, Agricultural and Forest Resources,** includes information about the agricultural character of the study areas.

Industrial/Public Facilities

Industrial areas border several portions of the right-of-way, comprising large tracts near agricultural processing facilities, energy production plants and other facilities. In the study area, industrial uses are largely located on the outskirts of urban areas. The existing railroad traverses the San Ardo oil and gas field at which occurs drilling and processing of crude oil and raw gas products. Public facilities include Camp Roberts, an Army National Guard post located north of San Miguel, and state prisons in Soledad and near San Luis Obispo.

Open Spaces/Rural Lands

Open space areas are present in urban and non-urban contexts throughout the corridor. Big Sandy Wildlife Reserve and Los Padres National Forest are two of the largest open space areas adjacent to the corridor; both are located in Monterey County. Rural lands are also prevalent in non-urban portions of the project corridor. Rural lands can include any other non-developed land not in agricultural use.

3.5.3.2 Property

The railroad ROW itself is owned by UPRR. The majority of study properties outside the ROW are privately owned. One exception is the McKay/Wellsona Curve Realignment, where the proposed realignment includes portions of Big Sandy Wildlife Area and Camp Roberts.[16] Portions of other components ~~improvements~~ would also cross public roads in some locations.

3.5.3.3 Communities and Neighborhoods

The existing rail alignment traverses several existing communities. The study area includes the following incorporated cities: Salinas, Gonzales, Soledad, King City, Paso Robles, Atascadero, and San Luis Obispo. Several unincorporated communities are

[16] Study area lands along the proposed second mainline in the Los Padres National Forest are privately held.

in the study areas, as well. These include: Chualar, San Lucas, San Ardo, Bradley, San Miguel, Templeton, and Santa Margarita.

The railroad runs parallel to the freeway that skirts the downtown or central district of many of these communities. Communities where the railway does not intersect the downtown area include: Chualar, Gonzales, San Lucas, San Ardo, Bradley, San Miguel, Templeton, and Atascadero. In other communities, the railroad goes through or near the downtown area. These communities include: Salinas, Soledad, King City, Paso Robles, Santa Margarita and San Luis Obispo.

There are also long stretches of the existing alignment where the railway passes by open space and low-density residential areas. These are not neighborhoods in the same sense as the communities identified above; however, communities may form around residential areas.

3.5.3.4 Environmental Justice

~~Communities for which e~~ Environmental justice communities ~~considerations are relevant~~ were identified throughout the corridor. As shown in **Figure 3.5-1**, low-income environmental justice communities were identified throughout the corridor, particularly in urban areas in and outside of San Luis Obispo, near King City, and in and outside of Salinas. The majority of the study area within Monterey County includes minority environmental justice communities. In San Luis Obispo County, demographic data indicates a smaller number of minority environmental justice communities.

Along the entirety of the project corridor, about 46 percent of study area census block groups have minority environmental justice communities. About 14 percent of census tracts within the study area have populations of people living below the poverty line and are, thus, low-income environmental justice communities.

3.5.4 ENVIRONMENTAL CONSEQUENCES

3.5.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing passenger service, with some expansion of freight rail traffic. However, the No Build Alternative does not include expansion of existing physical components between Salinas and San Luis Obispo, with the exception of PTC upgrades. Such PTC signal upgrades would occur as part of the No Build Alternative. The PTC improvements would be located immediately adjacent to the railroad tracks, within the right-of-way, and would not disrupt existing land uses.

Under the No Build Alternative, it is generally assumed, based on local planning documents, between today and 2040, there would be no substantial changes in allowable land uses or to communities in the study area. Moderate changes in land use could be expected in urban areas along the right-of-way as a result of growth in population, transportation improvement projects, and other economic changes in the Coast Corridor region. Additionally, some agricultural lands are anticipated to be converted to urban uses, particularly those in proximity to existing communities. However, most of the local cities have selectively focused future growth away from important agricultural lands. This is particularly true in Monterey County, which has adopted strong farmland protection policies, as well as in the Paso Robles viticultural region. However, the No Build Alternative would result in little perceptible land use change, and no substantial change or effect on land use, property ownership, communities, or environmental justice communities.

3.5.4.2 Build Alternative

Land Use

Construction-Period Effects

Generally, construction of any of the ~~proposed physical improvements~~ Build Alternative components that would be placed within the existing railroad tracks or existing railroad ROW (e.g., rail and track upgrades, signal upgrades, and powered switches) would result in little or no conflict with adjacent or nearby land uses or property, as all such work would occur within or immediately adjacent to the existing railroad.

Certain other ~~proposed physical improvements~~ Build Alternative components, such as curve realignments ~~and new or extended sidings~~ and the new second mainline may in some cases diverge substantially from the existing railroad ROW. Construction (and as described further below) of such improvements would likely require staging areas on adjacent lands that may be in non-transportation related uses. Such uses would be temporary, lasting for the duration of construction, after which any land use incompatibility would be alleviated.

During construction, temporary land use impacts could include road closures and traffic detours, which could in turn disrupt access to public facilities, emergency vehicle access, and pose potential physical barriers to communities and business districts. However, these effects would be temporary in duration and upon completing construction, the affected areas ~~could~~ would be restored to pre-construction conditions. Depending on the design of proposed components ~~improvements~~, disruptions in local access or temporary relocation of public facilities ~~could~~ would occur, as discussed further in **Section 3.1, Traffic and Travel**.

Operational Effects

Land Use Compatibility and Property

Table 3.5-3 summarizes land use compatibility effects by implementation of the Build Alternative components. Property acquisitions would be direct effects of the proposed action; land use compatibility evaluates for potential indirect effects.

Certain Build Alternative components would be implemented within or immediately adjacent to the ROW (e.g., track and signal upgrades, powered switches, new sidings, and siding extensions), and would thus have high land use compatibility as they would complement the underlying transportation use.

Land use compatibility is also considered high for the two proposed stations, as the receiving cities of Soledad and King City have each adopted land use plans indicating conceptual station area plans consistent with the Build Alternative. Both cities also support the proposed reinstitution of Coast Daylight service.

The proposed second mainline also has a generally high compatibility, as it would be located immediately adjacent to the existing transportation corridor, likely within the existing railroad ROW. To the extent the second mainline requires land outside the ROW, compatibility may be lower in areas ~~that would traverse~~ within the boundaries of the Los Padres National Forest.

Land use compatibility is generally considered low for components requiring lands outside of the ROW. However, as noted in **Table 3.5-1**, the compatibility determination depends on the type of land proposed for conversion. Industrial or transportation related properties would be considered compatible, whereas conversion of agricultural or residential lands would be considered highly incompatible.

All curve realignments, ~~as well as several sidings and extensions~~, would require acquisition of lands outside the existing railroad ROW and the conversion of such lands to railroad use. Acquisition of adjacent agricultural, residential, and open space lands would result in an incompatible land use. Particularly, the Harlem/Metz, Coburn, and MP 172 curve realignments would require acquisition of agricultural land adjacent to the Salinas River. As such, these curve realignments would have low land use compatibility.

Communities and Neighborhoods

Potential direct impacts to communities and neighborhoods could occur if a ~~proposed physical improvement~~ project component would divide an existing residential neighborhood where no division exists under existing conditions.

With few exceptions, the ~~proposed physical improvements within the~~ Build Alternative components are within or immediately adjacent to the existing railroad ROW. The proposed train controls, track and rail upgrades, new sidings, and siding extensions, and power switches would all be placed within the existing railroad ROW and, accordingly, would not have any substantial potential to create a new division or substantially exacerbate any existing divisions.

The ~~proposed~~ Build Alternative physical components ~~improvements~~ that would diverge from the existing railroad ROW (particularly curve realignments~~, new sidings, siding extensions,~~ and the second mainline) are generally ~~located in~~ proposed for agricultural or open space areas or otherwise would be outside of intensely developed neighborhoods and existing communities. However, as noted in **Table 3.5-3**, some of the curve realignments would require land currently in residential use, which could lead to an adverse effect within affected communities. The Wellsona/Paso Robles and Henry/Santa Margarita curve realignments in particular, would be ~~are~~ located in residential areas within San Luis Obispo County. As such, these curve realignments would likely require partial or full acquisition of some residential properties within established communities. However, the existing railroad already travels through these communities and, thus, would not create a new barrier that would separate neighborhoods.

Environmental Justice

Construction-Period Effects

Figure 3.5-2 depicts the environmental justice communities in proximity to proposed components ~~improvements~~. In general, the majority of environmental justice communities are located within Monterey County, particularly near proposed components ~~improvements~~ such as the Harlem/Metz curve realignment, New Chalone Creek siding, Coburn Curve realignment, and King City siding. Environmental justice communities near such ~~proposed improvements~~ project components would potentially experience some of the noted construction effects.

It should be emphasized that the number, timing, and potential phasing of Build Alternative ~~improvements~~ components is highly uncertain. Notwithstanding, construction of any of the individual Build Alternative ~~improvements~~ components would produce noise levels higher than the ambient conditions, localized air quality effects, and changes to the visual character and quality of the surroundings.

Depending on which elements of the Build Alternative are selected for further design and eventual construction, environmental justice effects could occur if the elements so selected were disproportionately located within identified environmental justice communities and elements discarded were outside such communities. Any further NEPA analysis that may be performed on selected ~~improvements~~ components will need to further examine this potential for environmental justice effects.

At the programmatic, Tier 1 level, however, the Build Alternative components ~~improvements~~ as a whole are widely distributed throughout the Salinas to San Luis Obispo corridor and, accordingly, would not result in a concentration of construction related effects upon such communities.

Operational Effects

Similar to the discussion above for construction-related effects, there is considerable uncertainty as to which, if any, of the ~~proposed improvements~~ Build Alternative components would become operational. Any further NEPA analysis that may be performed will need to consider if the range of selected components ~~improvements is disproportionately~~ are within environmental justice communities and ~~if such a selection would constitute an~~ would result in disproportionate impacts to those communities ~~environmental justice effect~~.

It should also be noted that the aspects of the Build Alternative offer potential benefits that would be shared broadly. The potential benefit of increased and improved service would have a direct benefit to all communities, including environmental-justice qualifying communities through minor improvements to regional air quality and traffic.

As shown in **Section 3.2, Air Quality and Greenhouse Gases**, the Build Alternative has modest potential to reduce air pollutants within the Central Coast region as a whole, which includes the environmental justice communities along the Coast Corridor between Salinas and San Luis Obispo. The Build Alternative would thus result in somewhat improved air quality effects for the area as a whole.

The analysis below describes the potential operational effects of ~~various elements of~~ the Build Alternative components. The factors described would be important to carry forward in any future project-level NEPA review that may occur.

Existing Alignment: All ten segments of the existing alignment between Salinas and San Luis Obispo are located within one or more environmental justice communities. Once implemented, upgrades to existing tracks along the alignment would allow for trains to safely travel at faster speeds, which may result in moderate and intermittent increases in noise levels along the much of existing right-of-way. The greatest increase in operational noise would occur along segments #1, #2, #4, and #6 of the existing alignment.

New Sidings and Siding Extensions: Six out of seven proposed sidings/siding extensions would occur within minority environmental justice communities. However, half of these sidings near environmental justice communities would involve the extension of an existing siding (as opposed to construction of a new siding), and would therefore be expected to have a less substantial impact on the surrounding community. Localized air quality effects could occur in areas of new and/or extended sidings. In both such locations, trains may dwell for extended periods, resulting in pollution concentrations in specific areas. As a result, there is the potential for proposed siding improvements to have an impact on environmental justice communities, particularly if sidings were to increase idling, noise, and/or pollutant emissions in environmental justice communities.

New Stations: New stations proposed for Soledad and King City would both be constructed within a minority environmental justice community. The King City station area is within a low-income environmental justice community as well. If new stations are developed and Coast Daylight service created, new trains would travel relatively slowly through these communities. Stations introduce the potential that trains could dwell for extended periods in the respective communities, thereby introducing the possibility of localized air quality impacts. However, new stations would provide additional travel options for both Soledad and King City and could result in beneficial economic effects. If one or both stations receive ~~seek~~ federal funding for construction, potential effects to environmental justice communities would be assessed in future project-level environmental documentation~~, as described in **subsection 3.5.5, Mitigation Strategies and Subsequent Analysis**~~.

Curve Realignments: Seven out of eight proposed curve realignments would occur within minority or low-income environmental justice communities, as identified in **Table 3.5-3**. Particularly high numbers of environmental justice communities are present near the Harlem/Metz curve realignment. Many of these proposed curve realignments involve multiple segments of rail proposed for realignment; some of these segments are not located near environmental justice communities. Notwithstanding, there is potential for the proposed curve realignments to have an impact on environmental justice communities because curve realignments would require land acquisition/conversion of lands to a transportation use. Curve realignments could potentially add noise and visual implications by realigning the tracks closer to residents.

As shown in **Section 3.3, Noise and Vibration,** potential noise effects are most likely to occur at the proposed Wellsona/Paso Robles, Templeton/Henry, and

Henry/Santa Margarita curve realignments. The area surrounding the Wellsona/Paso Robles and Henry/Santa Margarita curve realignments includes environmental justice communities. Areas near the Templeton/Henry curve realignment do not include environmental justice communities. Visual changes along the corridor are discussed in detail in **Section 3.6, Aesthetic and Visual Resources**. Since the proposed components ~~improvements~~ are primarily located along an existing railroad ROW, no fundamental changes are expected to occur in the visual character of the study area. However, curve realignments would likely occur outside the right-of-way if they are to substantially reduce the degree of existing track curvature.

Second Main Track: There are no environmental justice qualifying communities located near the proposed second main track. Therefore, neither construction nor operation of the second main track is expected to result in an impact to environmental justice communities.

Table 3.5-3 Build Alternative: Potential Impacts to Land Use, Property, and Environmental Justice

Build Alternative Components	Land Use Compatibility	Percent of Private Land Potentially Necessary for Acquisition	Includes Minority Environmental Justice Communities?	Includes Low-Income Environmental Justice Communities?
Salinas Powered Switch	Within ROW: High	N/A	N/A	N/A
Upgrades to Existing Alignment Section #1	***Within ROW: High***	***N/A***	***Yes, 31 block groups***	***Yes, 5 tracts***
Spence Siding Extension	Agricultural: Low Industrial: Low	100%	Yes, 4 block groups	None
Upgrades to Existing Alignment Section #2	***Within ROW: High***	***N/A***	***Yes, 15 block groups***	***Yes, 2 tracts***
Gonzales Powered Switch	Within ROW: High	N/A	N/A	N/A
Soledad Powered Switch	Within ROW: High	N/A	N/A	N/A
Soledad New Passenger Station	Commercial: High Public Facilities: High	100%	Yes, 6 block groups	None
Harlem/Metz Curve Realignments	Agricultural: Low Industrial: Low	100%	Yes, 3 block groups	None
Chalone Creek New Siding	Agricultural: Low Industrial: Low	100%	Yes, 2 block groups	None

Build Alternative Components	Land Use Compatibility	Percent of Private Land Potentially Necessary for Acquisition	Includes Minority Environmental Justice Communities?	Includes Low-Income Environmental Justice Communities?
Upgrades to Existing Alignment Section #3	***Within ROW: High***	***N/A***	***Yes, 4 block groups***	***None***
Coburn Curve Realignments	Agricultural: Low	100%	Yes, 2 block groups	No
King City Siding Extension	Agricultural: Low Commercial: Low Industrial: Low Residential: Low	100%	Yes, 8 block groups	Yes, 1 tract
King City New Passenger Station	Commercial: High	100%	Yes, 8 block groups	Yes, 1 tract
King City Powered Switch	Within ROW: High	N/A	N/A	N/A
Upgrades to Existing Alignment Section #4	***Agricultural: High***	***N/A***	***Yes, 5 block groups***	***Yes, 1 tract***
MP 165 Curve Realignment	Agricultural: Low	100%	Yes, 2 block groups	No
San Lucas New Siding	Agricultural: Low Industrial: Low	100%	Yes, 3 block groups	No

Build Alternative Components	Land Use Compatibility	Percent of Private Land Potentially Necessary for Acquisition	Includes Minority Environmental Justice Communities?	Includes Low-Income Environmental Justice Communities?
Upgrades to Existing Alignment Section #5	***Within ROW: High***	***N/A***	***Yes, 3 block groups***	***No***
MP 172 Track Realignment	Agricultural: Low	100%	Yes, 1 block group	No
San Ardo Powered Switch	Within ROW: High	N/A	N/A	N/A
Getty/Bradley Curve Realignments	Agricultural: Low	100%	Yes, 1 block group	No
Bradley Siding Extension	Agricultural: Low	100%	Yes, 1 block group	No
Bradley Powered Switch	Within ROW: High	N/A	N/A	NA
Upgrades to Existing Alignment Section #6	***Within ROW: High***	***N/A***	***Yes, 2 block groups***	***No***
Upgrades to Existing Alignment Section #7	***Within ROW: High***	***N/A***	***Yes, 2 block groups***	***No***
McKay/Wellsona Curve Realignments	Agricultural: Low Public facilities: Low	53.75%	Yes, 2 block groups	No
McKay East Powered Switches	Within ROW: High	N/A	N/A	N/A
Wellsona New Siding	Residential: Low	100%	Yes, 1 block group	No

Build Alternative Components	Land Use Compatibility	Percent of Private Land Potentially Necessary for Acquisition	Includes Minority Environmental Justice Communities?	Includes Low-Income Environmental Justice Communities?
Upgrades to Existing Alignment Section #8	***Within ROW: High***	***N/A***	***Yes, 3 block groups***	***No***
Wellsona/Paso Robles Curve Realignments	Agricultural: Low	100%	Yes, 1 block group	No
Templeton Siding Extension	Within ROW: High	98.96%	No	No
Templeton/Henry Curve Realignments	Recreation: Low	100%	No	No
Upgrades to Existing Alignment Section #9	***Within ROW: High***	***N/A***	***Yes, 1 block group***	***Yes, 1 tract***
Henry/Santa Margarita Curve Realignment	Agricultural: Low Residential: Low	99.92%	Yes, 1 block group	Yes, 1 tract
Santa Margarita Powered Switch	Within ROW: High	N/A	N/A	N/A
Cuesta Second Main Track	Within ROW: High	100%	No	No
Upgrades to Existing Alignment Section #10	***Within ROW: High***	***N/A***	***Yes, 1 block group***	***Yes, 6 tracts***

Source: ICF, 2013

3.5.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the City of King siding extension and the City of King station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile "island" of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects on land use and planning for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded components are located. The discussions below assess land use and planning effects relative to such modified or excluded components.

Land Use

Construction-Period Effects

Under the Preferred Alternative, construction activities would be similar to those described under the Build Alternative. However, because the Preferred Alternative excludes four curve realignments within San Luis Obispo County, land use impacts during construction would likely be reduced compared to the Build Alternative.

The footprint of the King City siding extension in the Preferred Alternative has been modified to extend exclusively to the north of the existing siding. Although the siding extensions would be constructed within railroad ROW, construction of such components could require temporary use of land outside of the ROW for staging and other construction activities. The vast majority of these lands are in agricultural use; other nearby land uses include roads and utility uses. Based on currently available conceptual design, construction period impacts would be most likely to occur in agricultural or utility areas.

Construction of the 27 miles of island CTC would occur within and adjacent to the existing railway between sections 6 through 9. CTC equipment itself would be placed at periodic intervals within the railroad ROW. No heavy construction equipment and equipment staging would be required to implement CTC; therefore, no substantial construction-period effects would be likely to occur.

Overall, construction impacts to land use would be expected to be lower for the Preferred Alternative than for the Build Alternative.

Operational Effects

In the Preferred Alternative, Coast Daylight service would operate in the same capacity as in the Build Alternative and would thus result in similar land use effects as the Build Alternative. Given the exclusion of four proposed curve realignments, the Preferred Alternative would require fewer permanent property and land acquisitions than the Build Alternative. The King City siding extension and island CTC would be located within the existing railroad ROW and thus would have no substantial effects to land use. The station would be built within a commercial area in the City of King, and would be highly compatible with the surrounding land uses.

Overall, operational land use impacts would be expected to be lower for the Preferred Alternative than the Build Alternative.

Environmental Justice

Construction-Period Effects

Under the Preferred Alternative, construction activities would be similar to those described under the Build Alternative. In general, the majority of environmental justice communities are located within Monterey County, particularly near the Harlem/Metz curve realignment, New Chalone Creek siding, Coburn Curve realignment, and the King City siding extension. As shown in **Table 3.5-4**, the modified footprint of the King City siding extension in the Preferred Alternative has the potential to affect five minority environmental justice block groups, three fewer than in the Build Alternative. The number of low income environmental justice communities is the same between the Preferred Alternative and the No Build Alternative

Additionally, there are environmental justice communities located near three of the four curve realignments proposed in the Build Alternative within San Luis Obispo County. These curve realignments have been excluded from the Preferred Alternative and the potential for impacts in these areas would likely be reduced.

As previously discussed, implementation of island CTC would not require any heavy machinery, thus associated impacts to environmental justice communities would likely be low. Accordingly, construction-period impacts to environmental justice communities would be expected to be lower for the Preferred Alternative than the Build Alternative.

Operational Effects

Under the Preferred Alternative, Coast Daylight service would operate in the same capacity as in the Build Alternative and would, thus, result in similar environmental justice effects as the Build Alternative.

The Preferred Alternative excludes the four curve realignments in San Luis Obispo County; therefore, operational noise, air quality, visual quality, etc. effects to environmental justice communities in these locations would be reduced compared to the Build Alternative. Additionally, passenger train operations would be expanded on the existing rail alignment in this area, thus serving nearby communities.

Furthermore, fewer minority environmental justice communities are located near the revised King City siding extension; thus operational impacts to such communities would be reduced in this location (see **Table 3.5-4**). The number of low income environmental justice communities is the same between the Preferred Alternative and the No Build Alternative.

Lastly, the island CTC would be located within railroad ROW, and once operational, would not be expected to have any substantial impacts to nearby communities. Accordingly, operational environmental justice impacts would be expected to be lower for the Preferred Alternative than the Build Alternative.

3.5.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

3.5.5.1 Land Use Compatibility and Property

The measures listed below are applicable to the Build and Preferred Alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

~~Potential mitigation strategies to alleviate or minimize impacts to land use associated with the Build Alternative would include, but not be limited to, the following:~~

A-LU-1. As only schematic plans have been developed to date, the level of detailed design that would normally precede construction would avoid or minimize the potential for land use displacement and property acquisition, whether temporary and/or permanent, residential or non-residential.

A-LU-2. Design strategies ~~could~~ would be implemented to avoid or minimize the temporary or permanent acquisition of properties to the extent feasible.

MM-LU-3. In addition, to the extent displacement of any residence or business occurs, relocation assistance procedures in accordance with the Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 would be implemented.

Table 3.5-4 Preferred Alternative: Potential Impacts to Land Use, Property, and Environmental Justice

Build Alternative Components	Land Use Compatibility	Percent of Private Land Potentially Necessary for Acquisition	Includes Minority Environmental Justice Communities?	Includes Low-Income Environmental Justice Communities?
King City Siding Extension	Agricultural: Low	91%	Yes, 5block groups	Yes, 1 tract
King City New Passenger Station	Commercial: High	53%	Yes, 8 block groups	Yes, 1 tract
McKay/Wellsona Curve Realignments	None. This improvement is not part of the Preferred Alternative.			
Wellsona/Paso Robles Curve Realignments	None. This improvement is not part of the Preferred Alternative.			
Templeton/Henry Curve Realignments	None. This improvement is not part of the Preferred Alternative.			
Henry/Santa Margarita Curve Realignment	None. This improvement is not part of the Preferred Alternative.			

Source: ICF, 2013

3.5.5.2 Communities and Neighborhoods

Although this document found few community/neighborhood effects resulting from the ~~Build~~ Preferred Alternative, some of the ~~specific elements of the Preferred Alternative~~ ~~proposed improvements~~ components of the action alternatives may result in property acquisitions that could adversely affect communities and neighborhoods along the existing railroad~~. While one at-grade crossing would be created as part of the Preferred Alternative curve realignment at MP 172, the crossing is not located within a populated neighborhood that would reduce community interactions from existing conditions.~~ The identification and implementation of specific mitigation measures necessary for each project component would occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

MIN-LU-4. Efforts ~~could~~ would be made during design to minimize any barriers to community and neighborhood interaction.

MIN-LU-5. Consultation with local governments and planning agencies throughout the design effort ~~could~~ would be conducted in order to maintain or enhance neighborhood integrity.

MIN-LU-6. If the MP 172 curve realignment is constructed and includes a new at-grade crossing at Cattlemen Road, potential strategies to reduce community effects ~~could~~ would include additional grade separation of rail lines and streets, new pedestrian crossings, new cross-connection points, improved visual quality of project facilities, and traffic management plans that maintain access during and after construction.

MIN-LU-7. Temporary construction-period ~~related~~ impacts on neighborhoods and communities ~~could~~ would be addressed through site-specific measures. Potential strategies to alleviate or minimize impact to community during construction may include, but would not be limited to, the following:

- Provide opportunities for community involvement early in future environmental studies;
- Facilitate design workshops within affected neighborhoods to learn from the community which circulation elements (automobile, bicycle, pedestrian) in the impacted area are most critical so that those elements can be preserved;
- Develop design standards for facilities, landscape, and public art associated with the project that reflect the character of adjacent affected neighborhoods;

- Ensure that key connections (pedestrian/bicycle and vehicular crossings) across the rail corridor are maintained where necessary to maintain neighborhood integrity;
- Complete a construction logistics analysis to determine approximate durations, impacts and localized mitigation measures to reduce disruption to communities, activities, traffic and circulation;
- Develop traffic management plans that reduce barriers during construction;
- Where feasible, maintain connectivity during construction;
- Implement measures to maintain high level of visual quality in the neighborhood. Such measures can include visual buffers, trees and other landscaping, architectural design and public artwork; and
- Implement procurement specifications and incentives for construction contractors designed to reduce the duration and disruption of construction. Potential requirements include restrictions on construction vehicle traffic and routes, haul routes, hours of permitted construction activity, and advance public notification of all closures or expected travel delays.

3.5.5.3 Environmental Justice

The measures listed below are applicable to the action alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component would occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review. ~~Potential strategies to avoid or minimize impacts to land use associated with the Preferred Alternative could include, but not be limited to, the following:~~

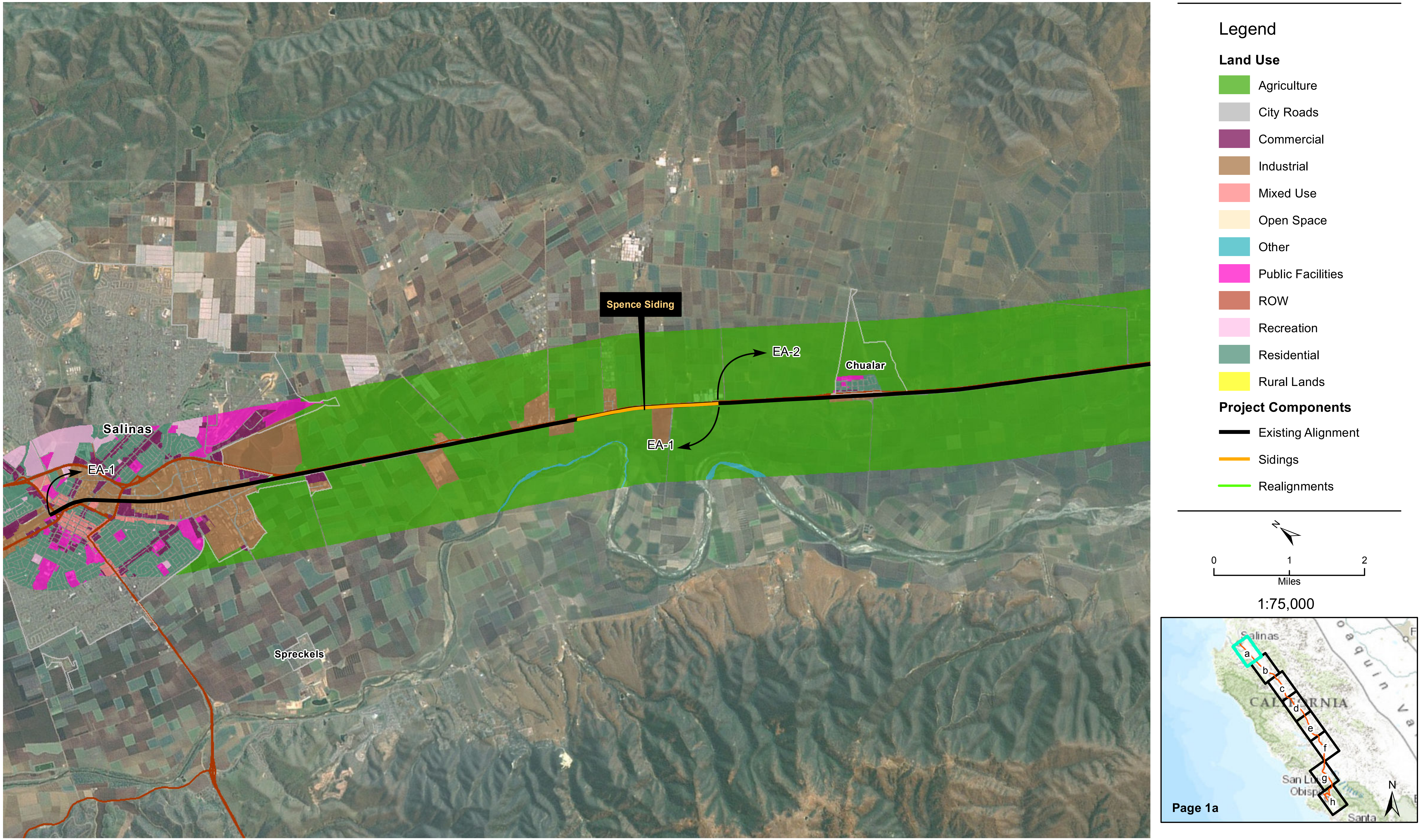
- **A-LU-8**. In selecting components of the action alternatives ~~Build Alternative~~ to carry forward for design and potential construction and operation, examine whether the selected components ~~improvements~~ are disproportionately located within environmental justice communities. Environmental justice effects would ~~could~~ potentially be avoided if the components ~~improvements~~ carried forward are not disproportionately located within environmental justice communities.
- **MIN-LU-9.** EO 12898 requires federal agencies to ensure effective public participation and access to information. Compliance with EO 12898 involves outreach to the potentially affected minority and/or low-income population to

identify issues of importance that may not otherwise be considered. Outreach to affected communities would be conducted during the decision-making process and identification of any necessary mitigation measures.

- **MIN-LU-10.** DOT Order 5610.2 requires DOT agencies to establish opportunities for meaningful public involvement by members of minority populations during activities including identification of potential mitigation measures. Minority and low-income populations would be provided with access to information about health and environmental impacts, measures to avoid, minimize and/or to mitigate any disproportionately high and adverse effects and offsetting benefits and opportunities to enhance affected communities, neighborhoods, or individuals during an outreach program conducted as part of the decision-making process.
- **MIN-LU-11.** As indicated in the Environmental Consequences section above, many of the proposed curve realignments associated with the action alternatives involve multiple segments, some near and some distant from environmental justice communities. A potential avoidance/minimization strategy would be to omit portions of multiple segment curve realignments that include environmental justice communities or where such impacts ~~could~~ would be deemed to be disproportionately concentrated.
- **MIN-LU-12.** Special attention would be given to any permanent impact categories that are commonly of concern for this type of project and to those that previously have been identified as being of concern. These include:
  - Air quality
  - Noise and vibration
  - Public health
  - Visual resources/aesthetics
  - Parklands
  - Relocation

3.5.6 SUBSEQUENT ANALYSIS

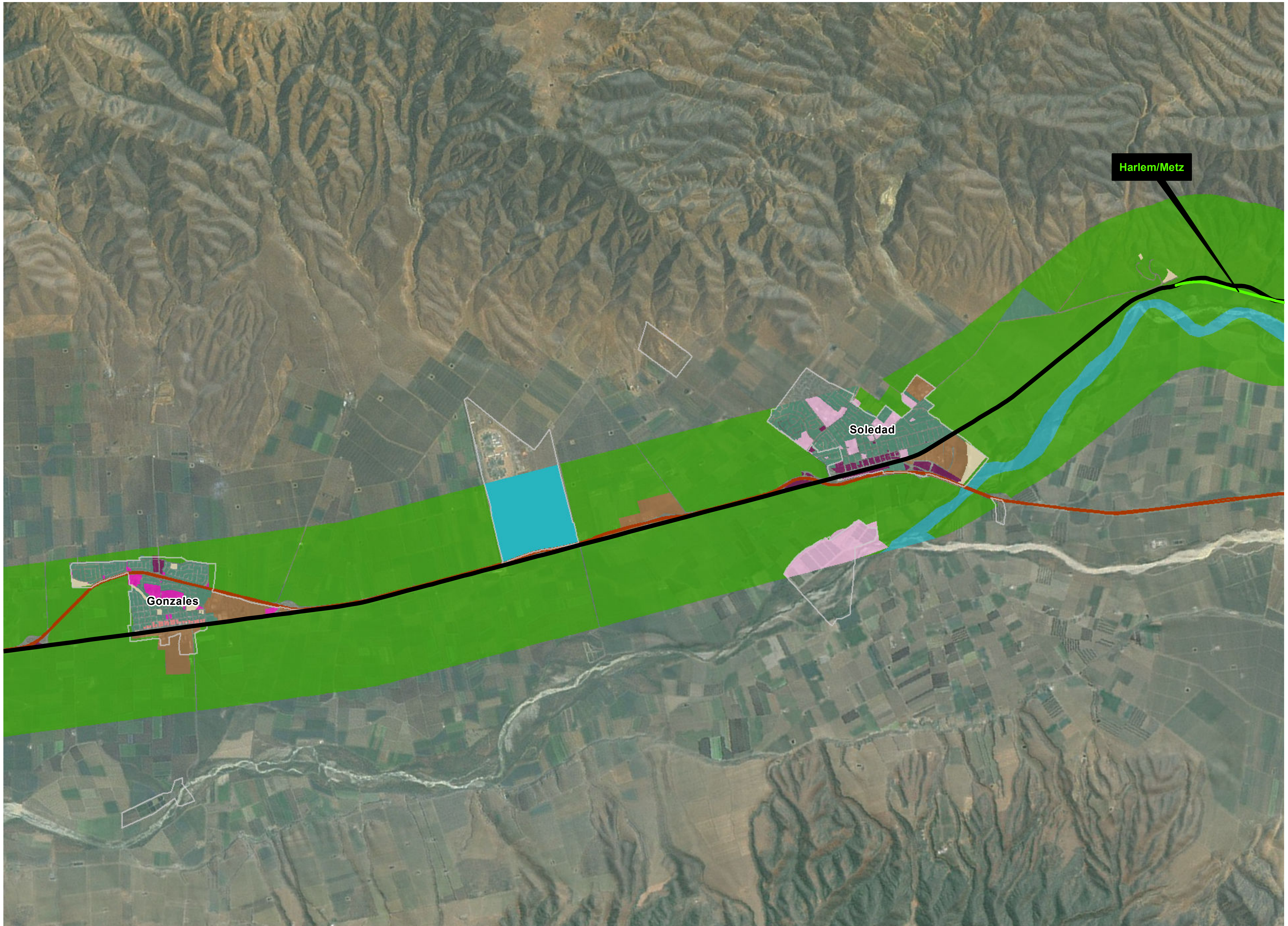
Prior to implementing any ~~proposed improvements~~ components of the action alternatives ~~components of the Build Alternative~~, site specific evaluation ~~should~~ would be conducted of the potential for land use compatibility and the need for property acquisition, including the potential for displacement of homes or businesses or substantial conflict with locally adopted land use policies. Any homes or businesses with the potential for displacement ~~could~~ would be studied through a relocation impact analysis. If project-level environmental review under NEPA proceeds, anticipated effects to identified environmental justice communities would be assessed with best-available information to help determine whether impacts are disproportionate on minority or low-income communities. Additional environmental assessment and design development to determine alignment options during future studies will ensure a more precise evaluation of site-specific impacts and mitigation effectiveness.



Generalized Existing Land Uses

Figure 3.5-1a

Source: ICF International, 2013



Legend

Land Use

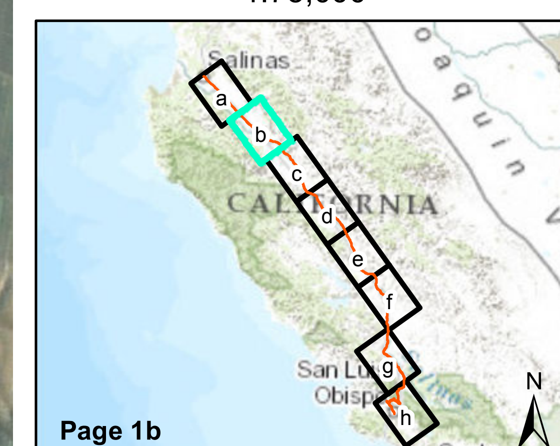
- Agriculture
- City Roads
- Commercial
- Industrial
- Mixed Use
- Open Space
- Other
- Public Facilities
- ROW
- Recreation
- Residential
- Rural Lands

Project Components

- Existing Alignment
- Sidings
- Realignments

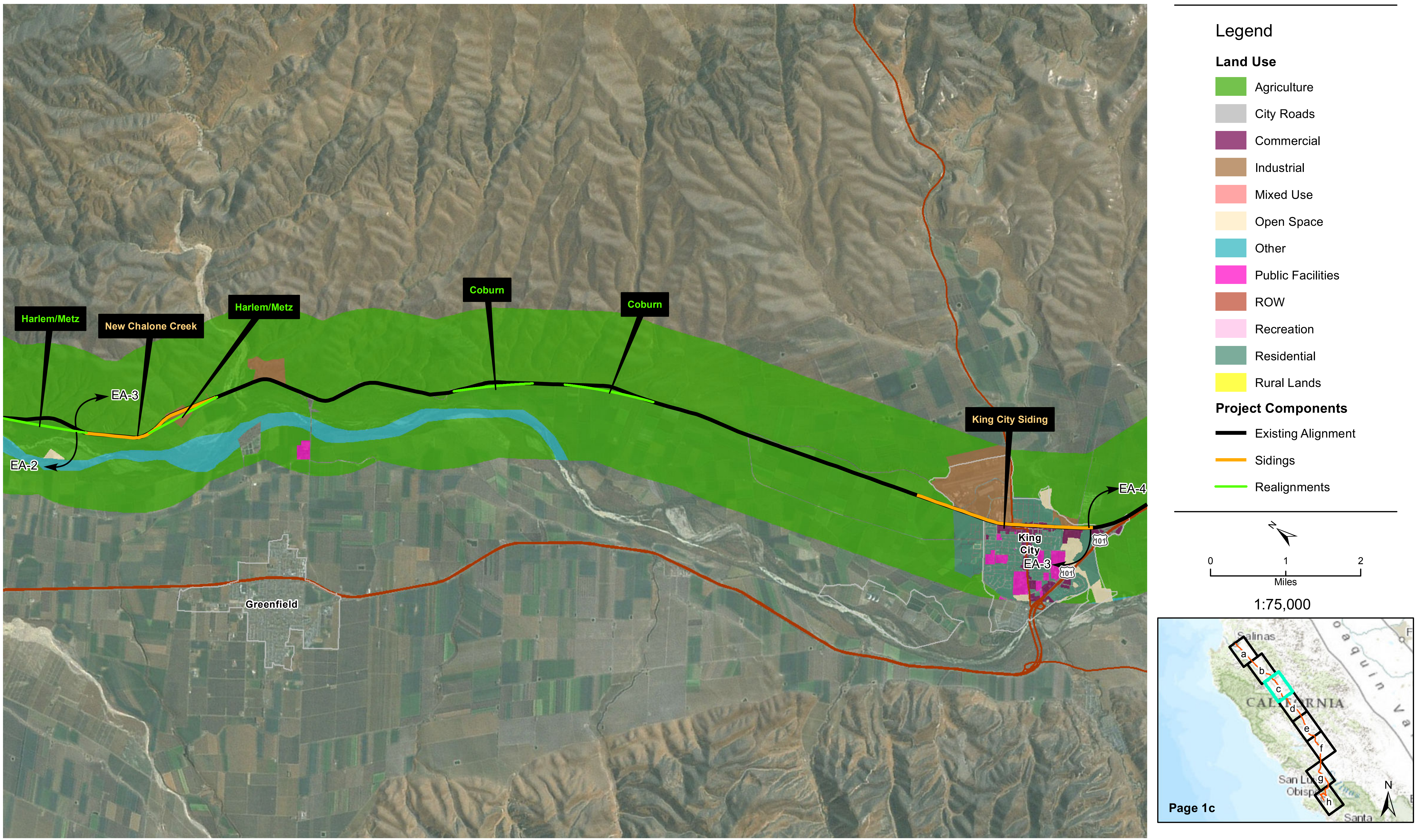
0 1 2
Miles

1:75,000



Generalized Existing Land Uses Figure **3.5-1b**

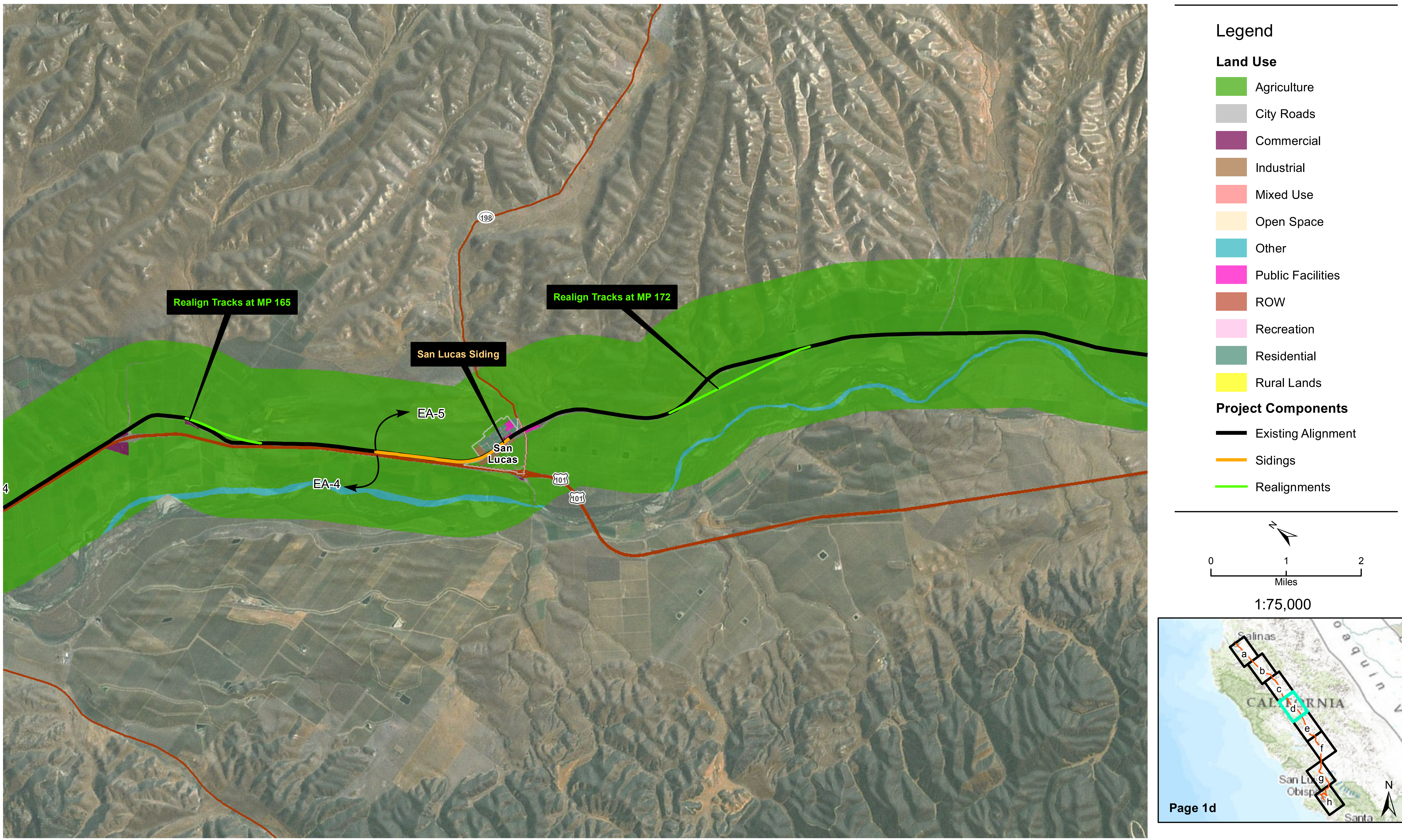
Source: ICF International, 2013



Generalized Existing Land Uses

Figure 3.5-1c

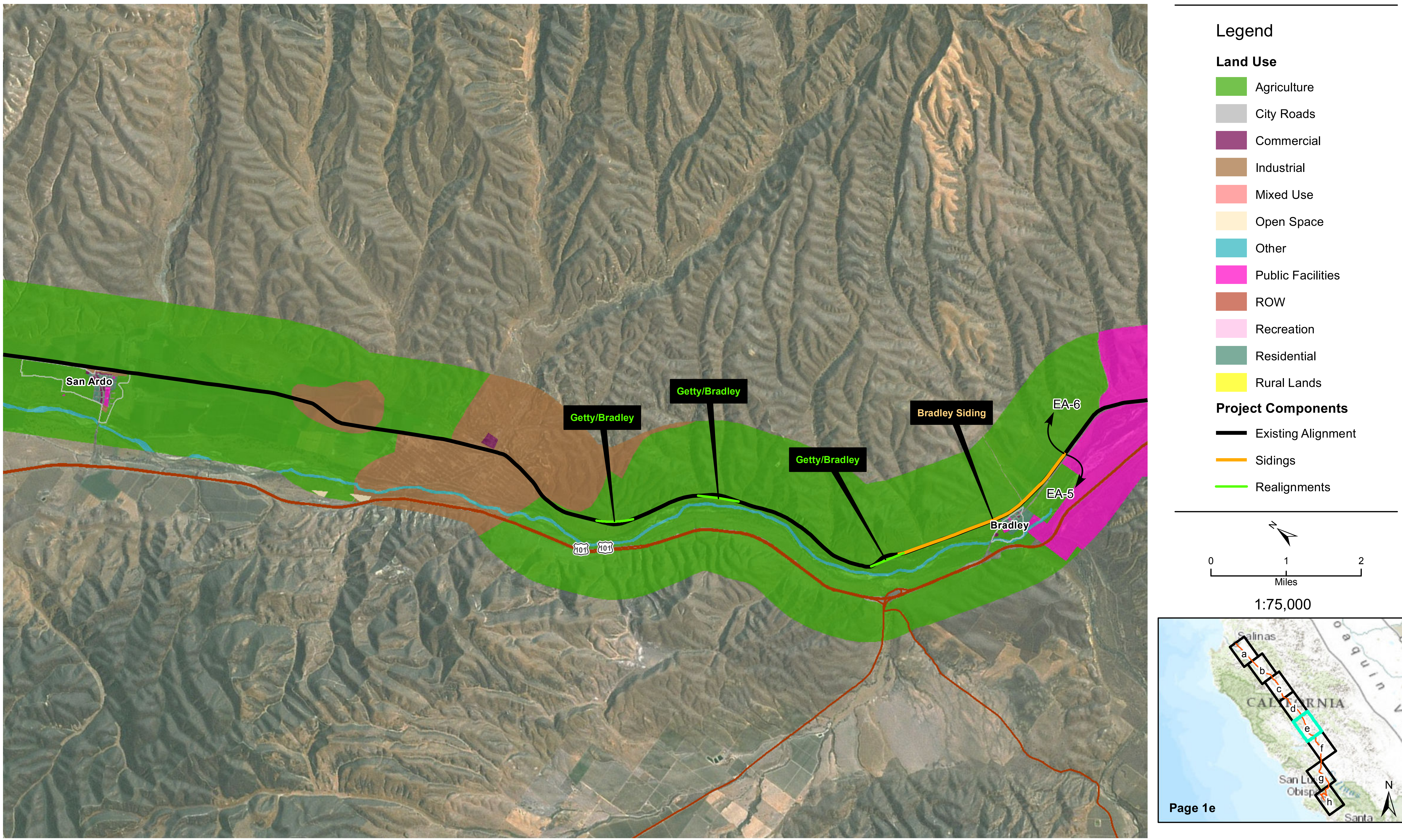
Source: ICF International, 2013



Generalized Existing Land Uses

Figure 3.5-1d

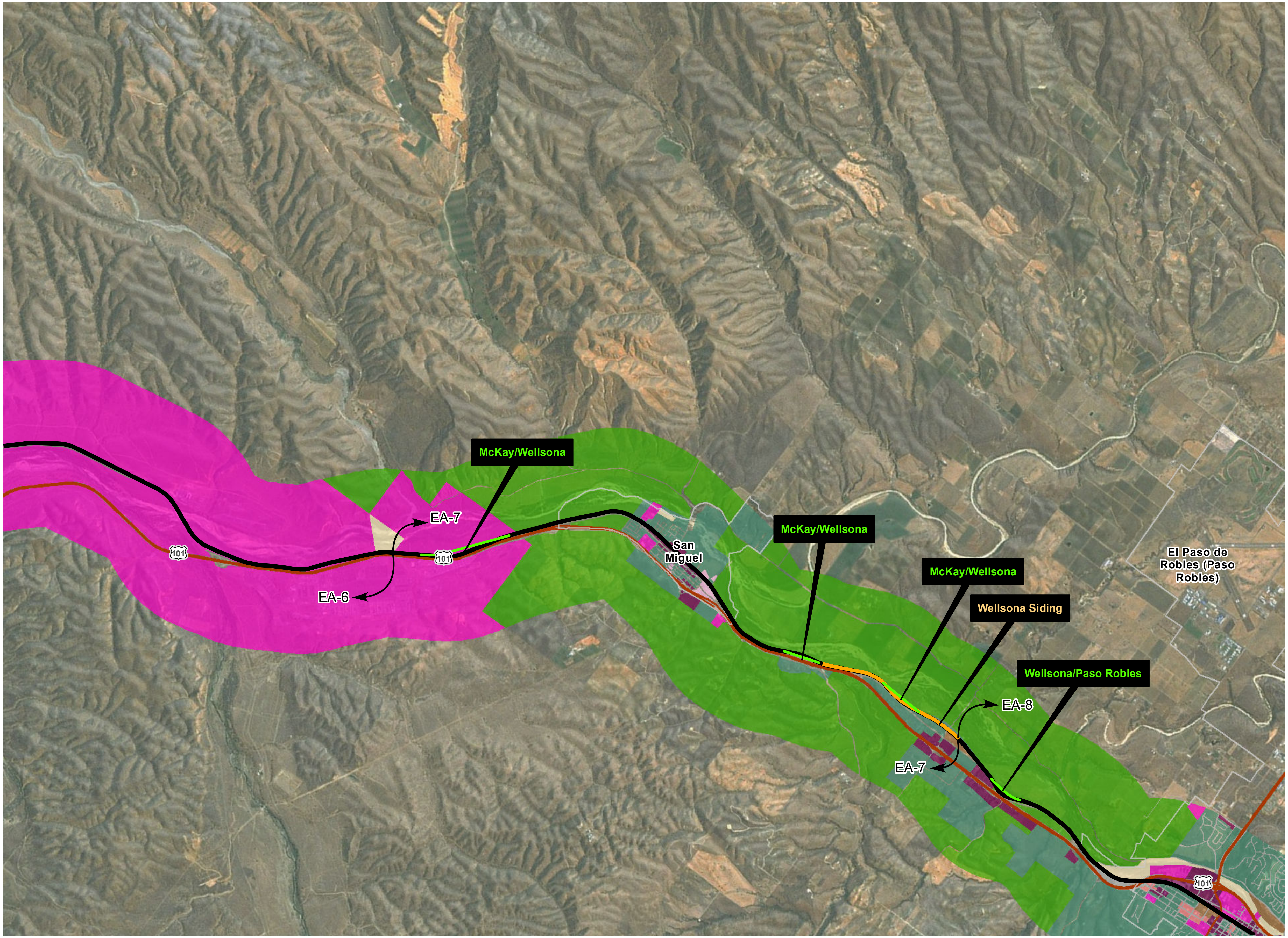
Source: ICF International, 2013



Generalized Existing Land Uses

Figure 3.5-1e

Source: ICF International, 2013



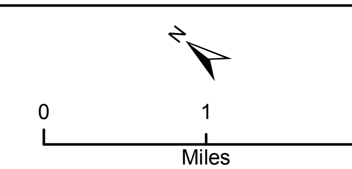
Legend

Land Use

- Agriculture
- City Roads
- Commercial
- Industrial
- Mixed Use
- Open Space
- Other
- Public Facilities
- ROW
- Recreation
- Residential
- Rural Lands

Project Components

- Existing Alignment
- Sidings
- Realignments



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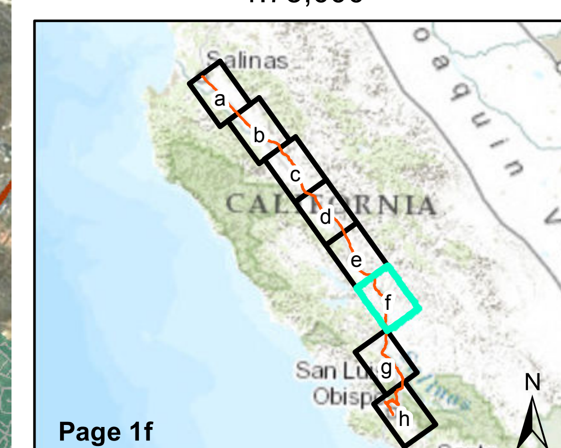
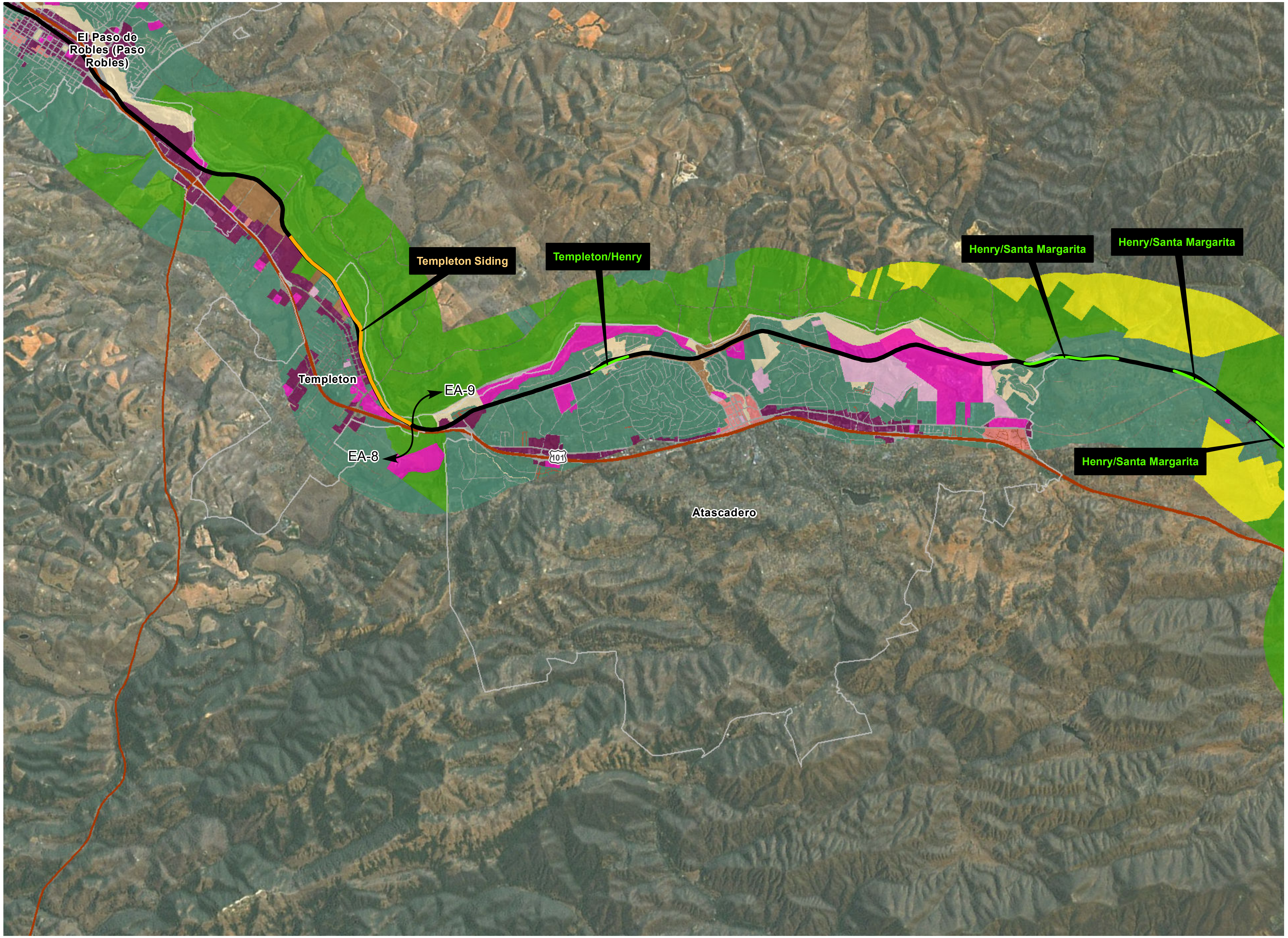


Generalized Existing Land Uses Figure **3.5-1f**

Source: ICF International, 2013



Legend

Land Use

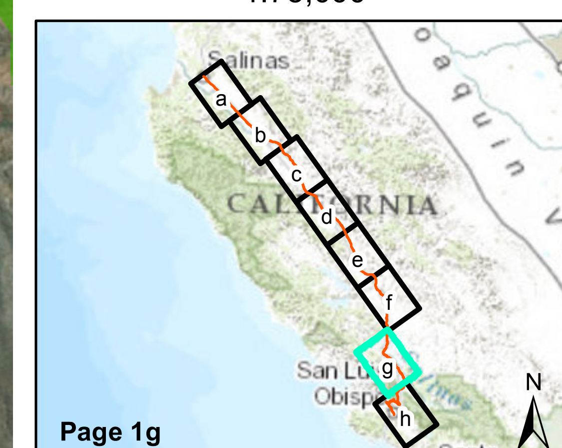
- Agriculture
- City Roads
- Commercial
- Industrial
- Mixed Use
- Open Space
- Other
- Public Facilities
- ROW
- Recreation
- Residential
- Rural Lands

Project Components

- Existing Alignment
- Sidings
- Realignments

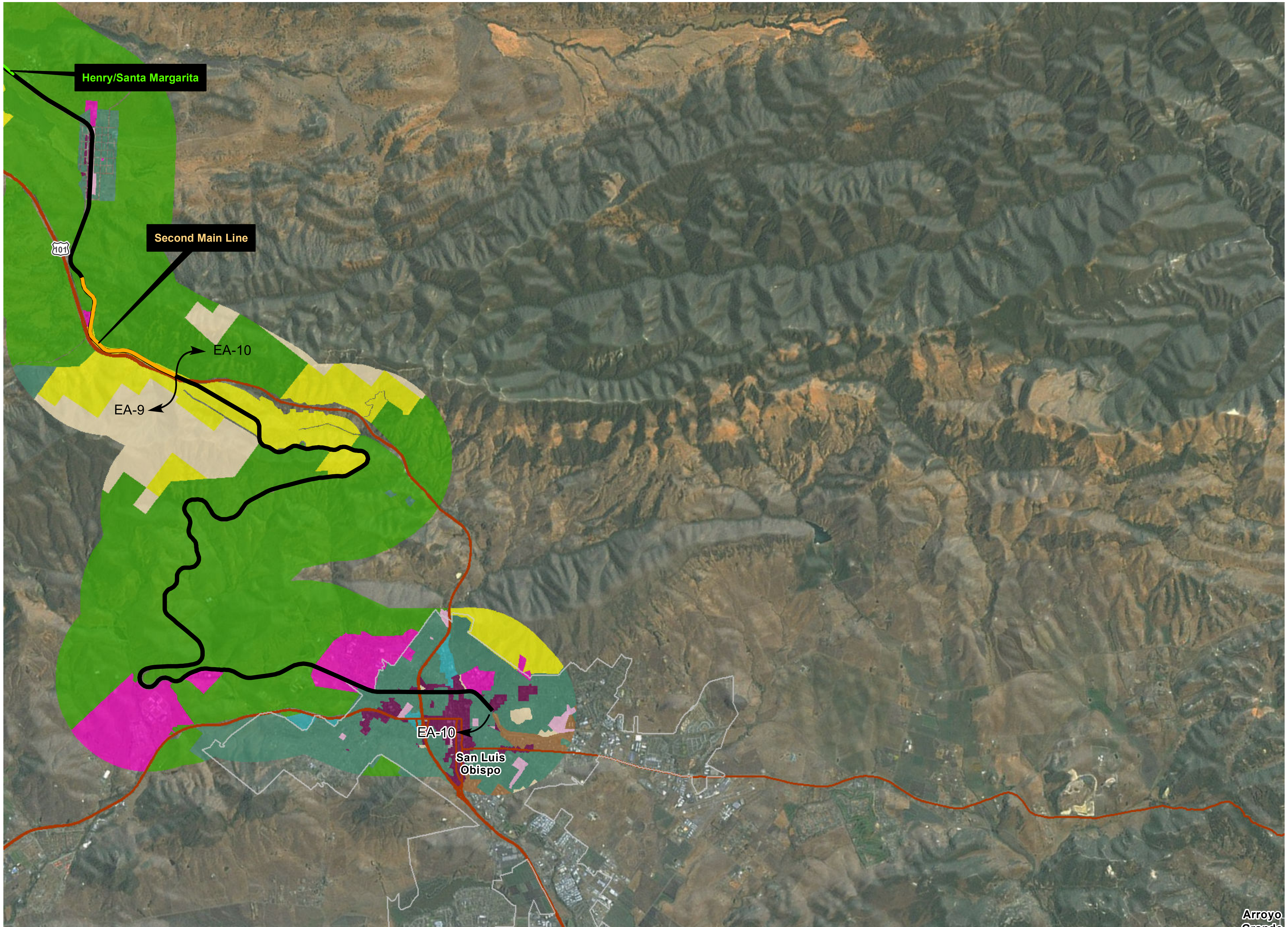
0 1 2
Miles

1:75,000



Generalized Existing Land Uses

Figure 3.5-1g



Legend

Land Use

- Agriculture
- City Roads
- Commercial
- Industrial
- Mixed Use
- Open Space
- Other
- Public Facilities
- ROW
- Recreation
- Residential
- Rural Lands

Project Components

- Existing Alignment
- Sidings
- Realignments

N

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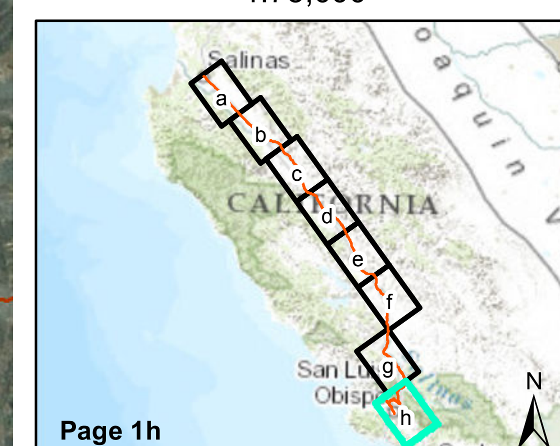
Miles

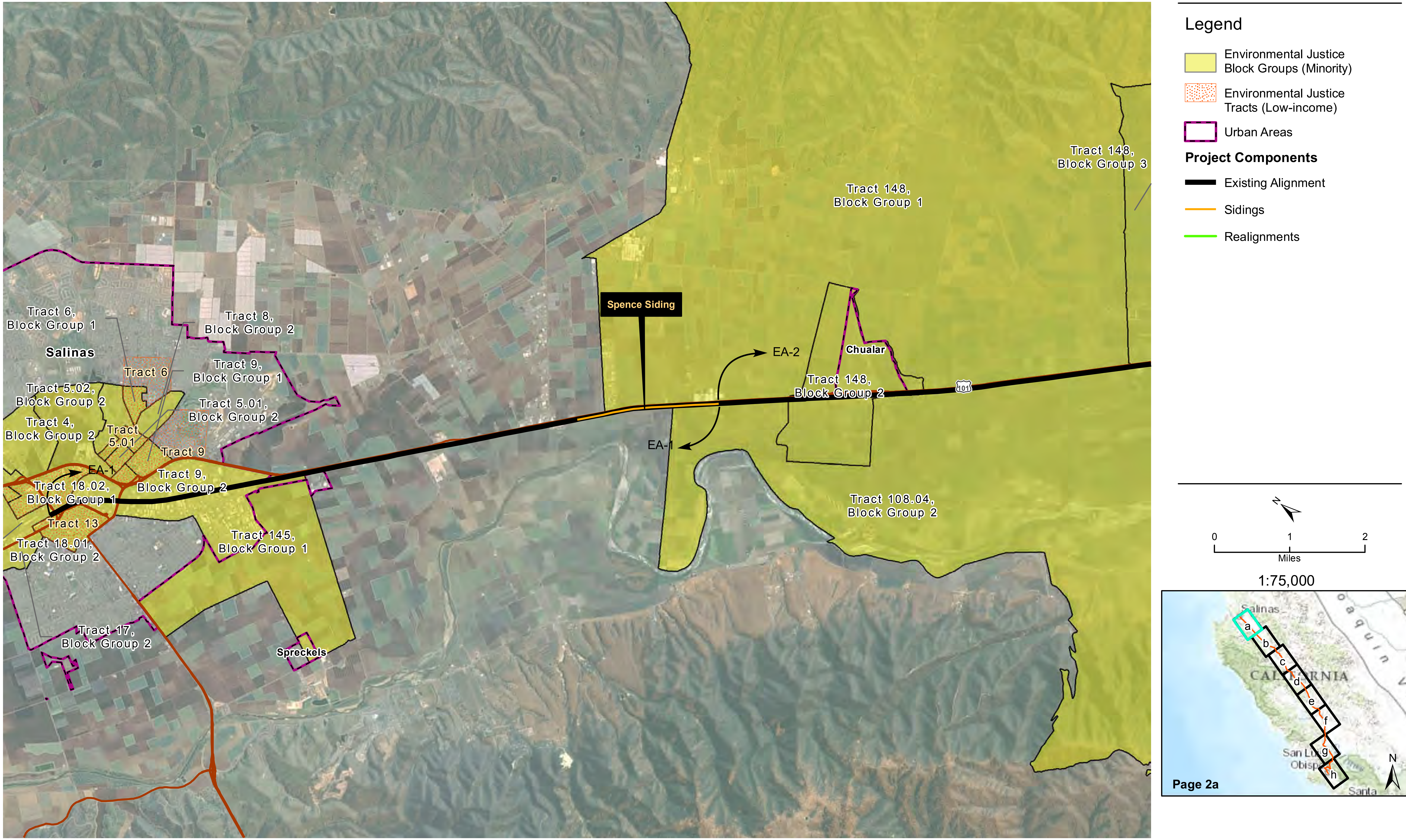
1:75,000



Generalized Existing Land Uses

Figure **3.5-1h**

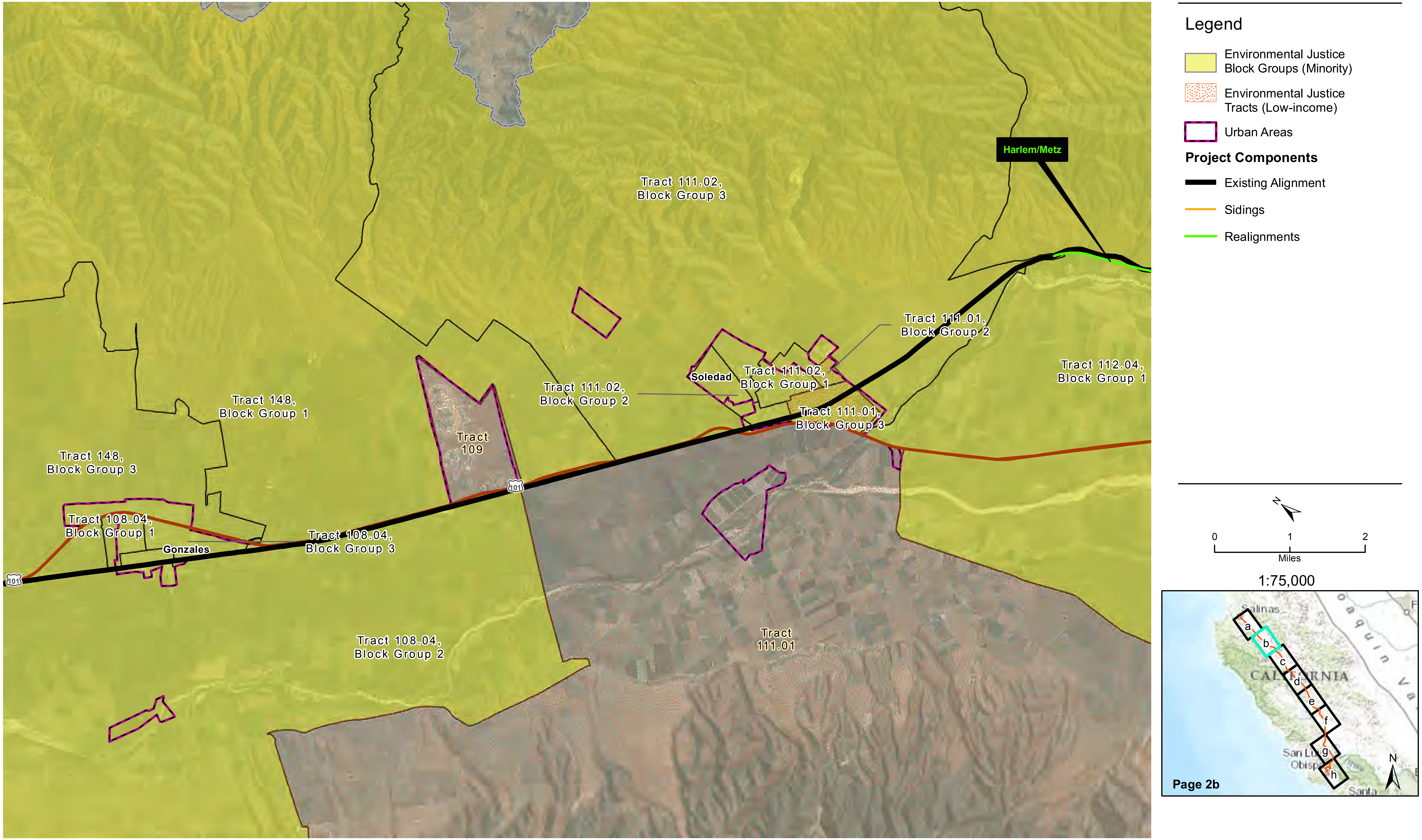
Source: ICF International, 2013



Environmental Justice

Figure 3.5-2a

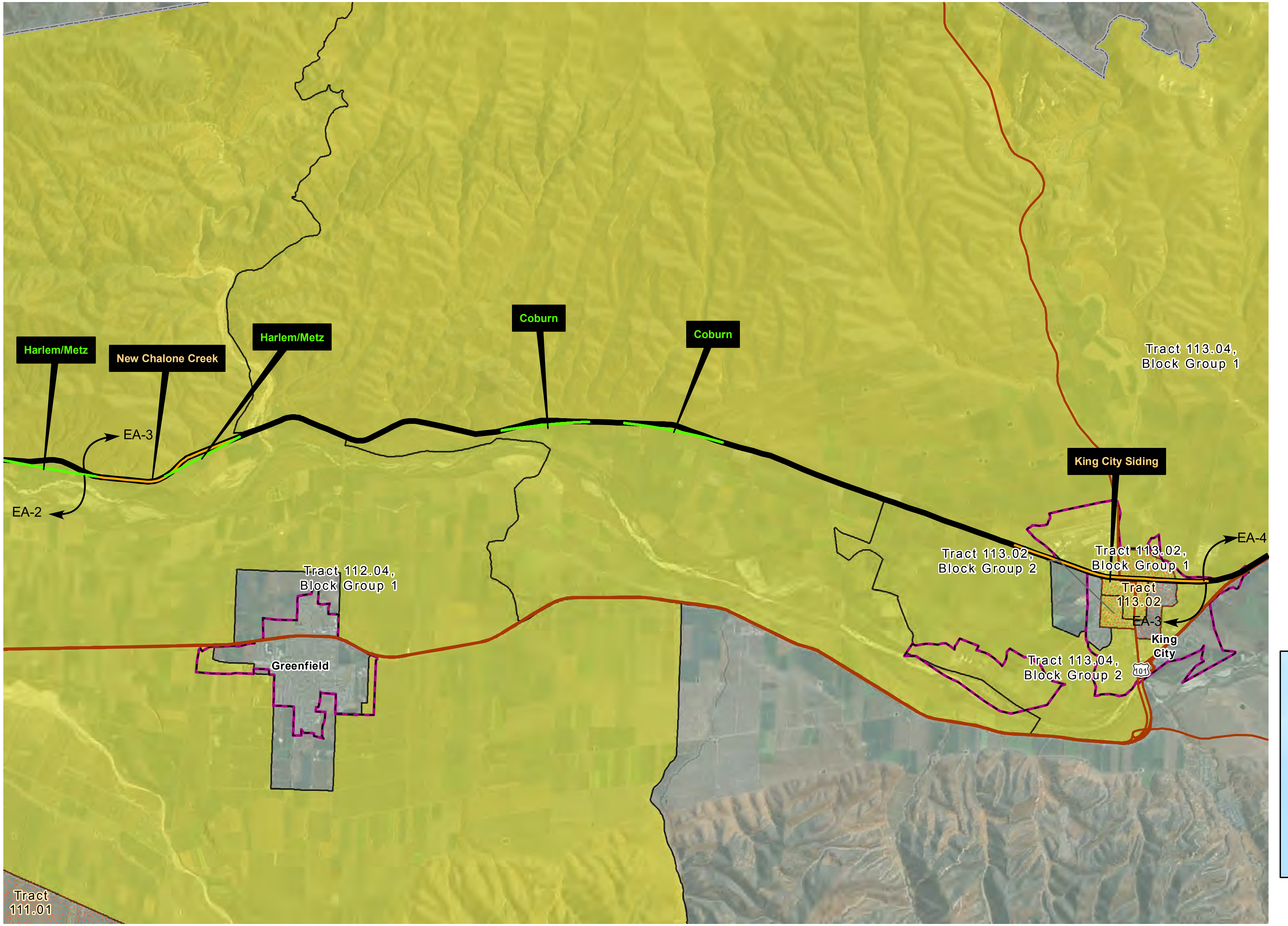
Source: ICF International, 2013

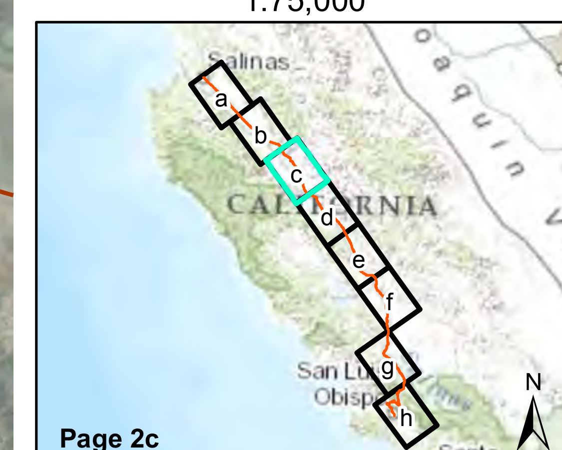


Environmental Justice

Figure 3.5-2b

Source: ICF International, 2013

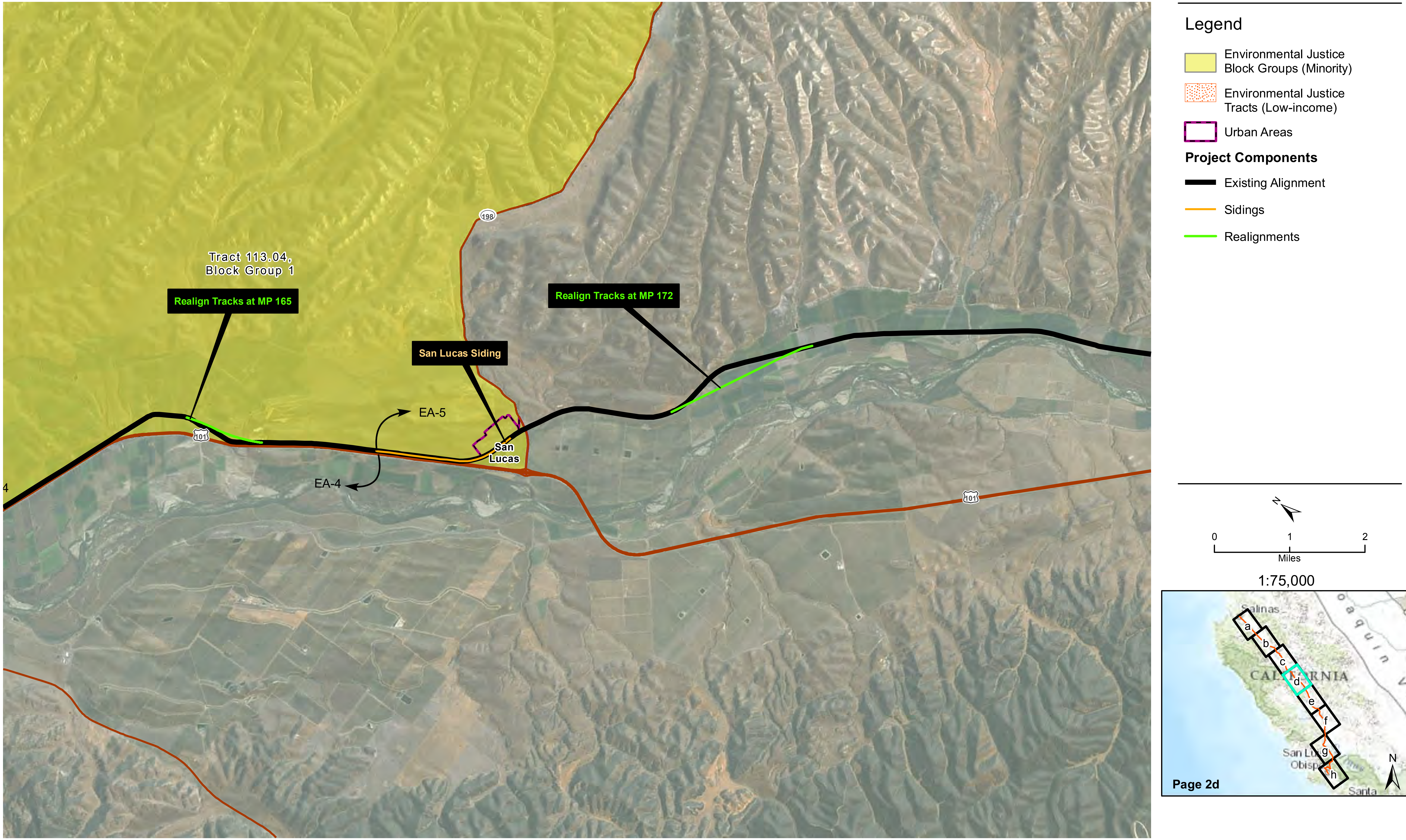




Environmental Justice

Figure 3.5-2c

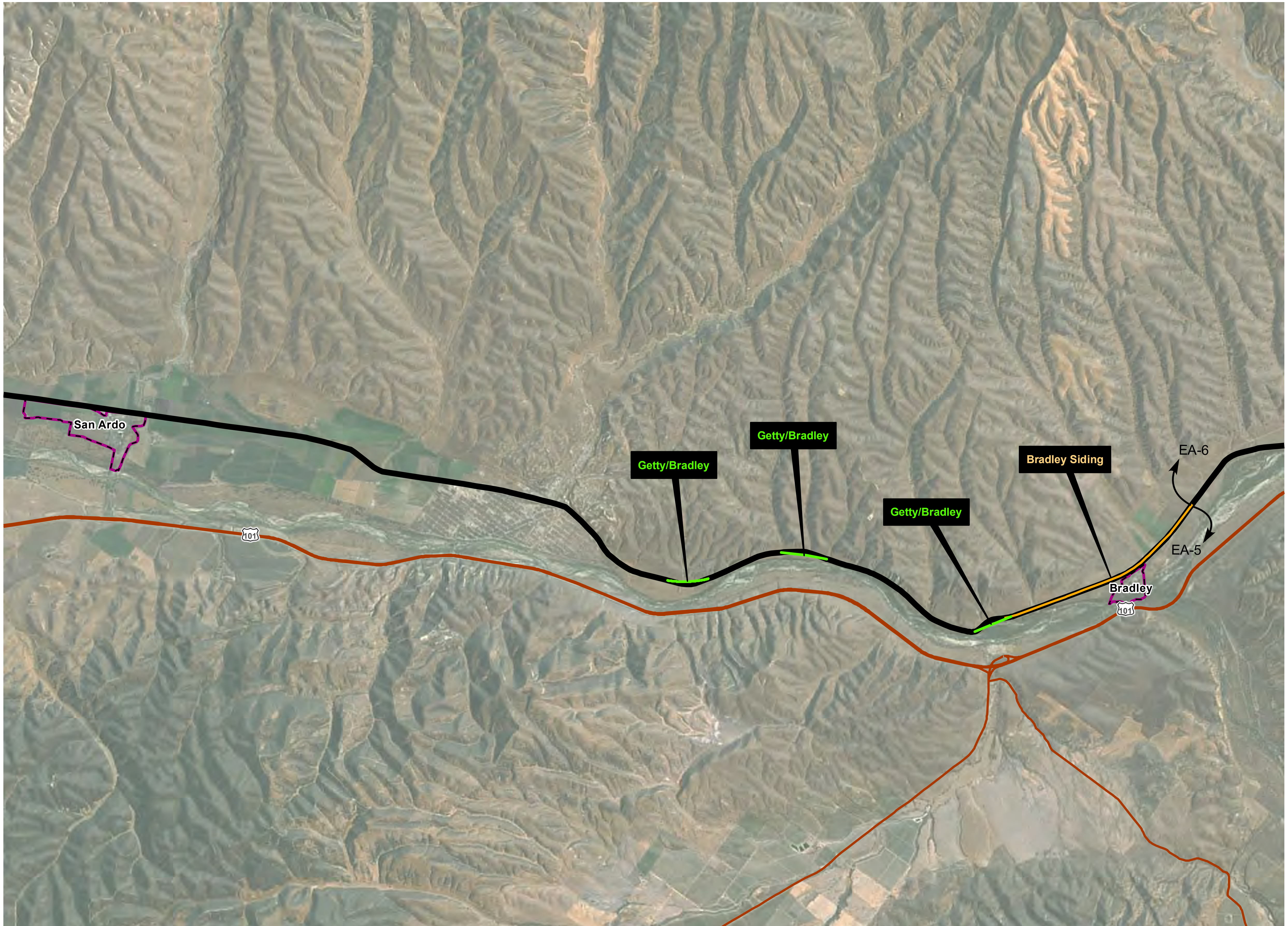
Source: ICF International, 2013



Environmental Justice

Figure 3.5-2d

Source: ICF International, 2013

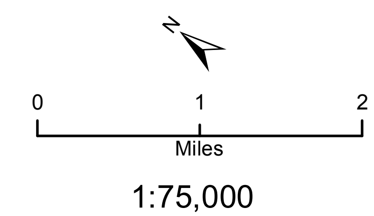


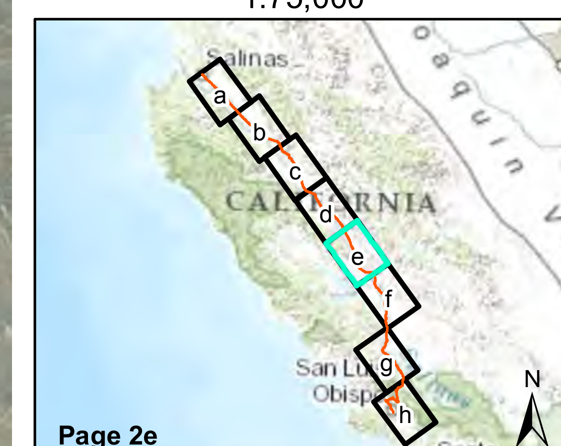
Legend

- Environmental Justice Block Groups (Minority)
- Environmental Justice Tracts (Low-income)
- Urban Areas

Project Components

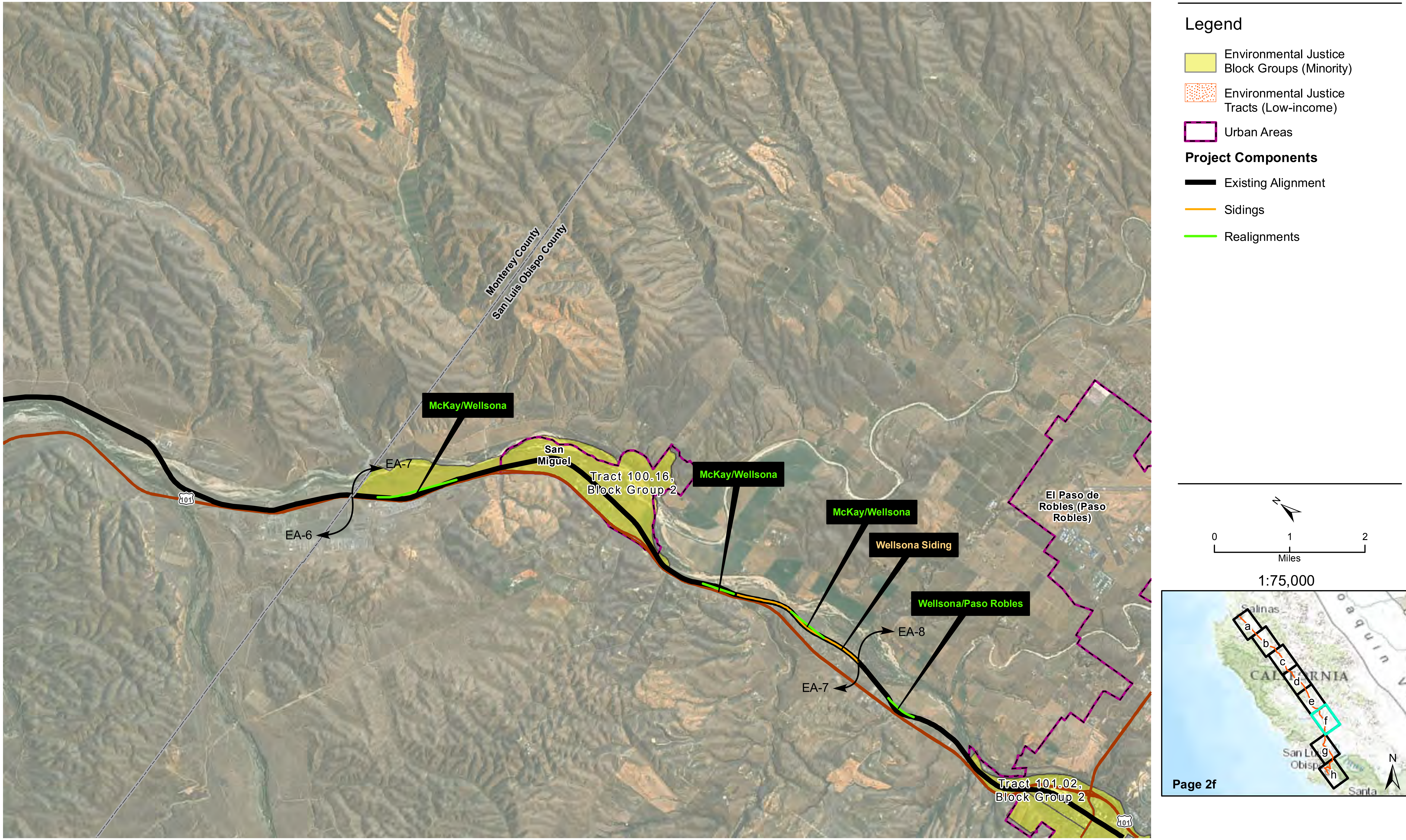
- Existing Alignment
- Sidings
- Realignments





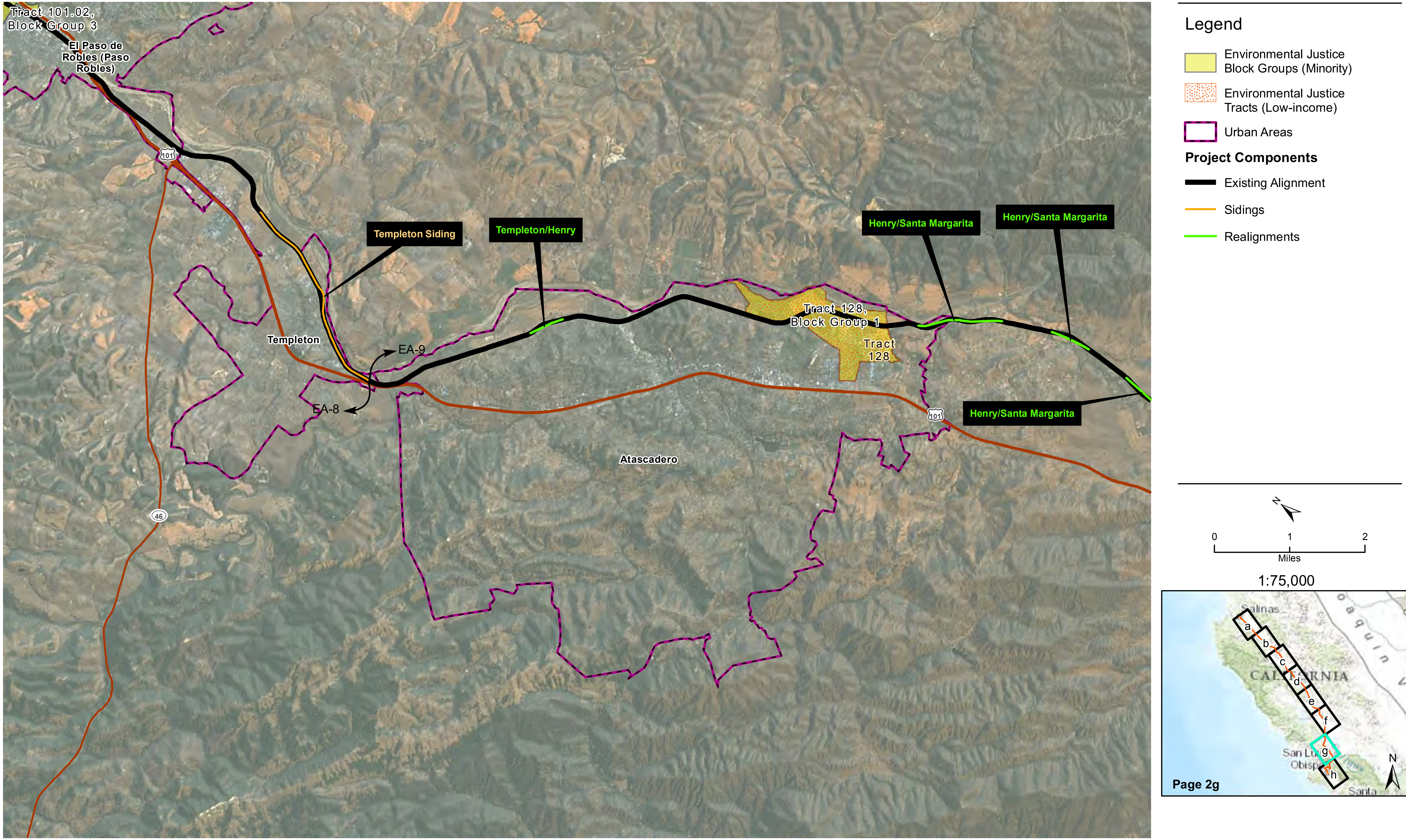
Environmental Justice

Figure 3.5-2e



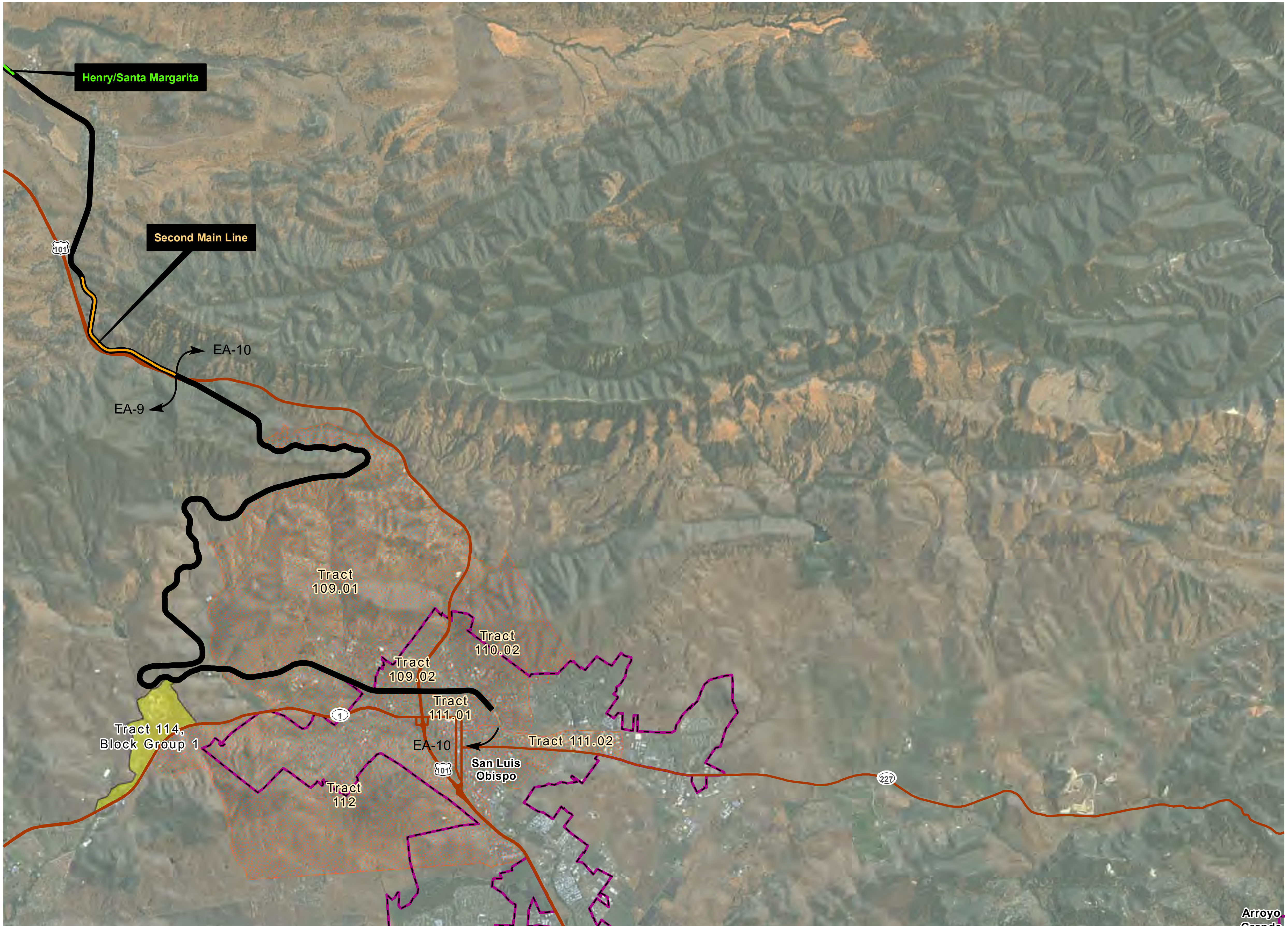
Environmental Justice

Figure 3.5-2f



Environmental Justice

Figure 3.5-2g



Legend

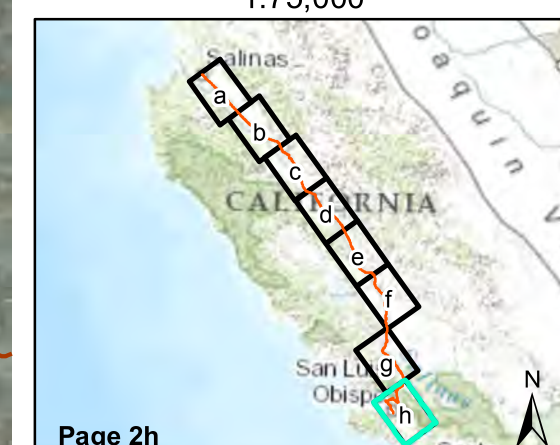
- Environmental Justice Block Groups (Minority)
- Environmental Justice Tracts (Low-income)
- Urban Areas

Project Components

- Existing Alignment
- Sidings
- Realignments

0 1 2
Miles

1:75,000



Environmental Justice

Figure 3.5-2h

Source: ICF International, 2013

3.6 AESTHETICS AND VISUAL RESOURCES

Visual resources include both natural and man-made features of the landscape. Intrinsic visual qualities and composition of a landscape together define the visual character of an area. This section describes the existing visual setting of the study area and assesses potential changes to the visual environment as a result of the No Build and ~~Build Alternatives~~ action alternatives.

This section describes updates and modifications made in response to comments on the Draft Program EIS/EIR. **Chapter 5.0, Comments and Coordination**, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. The City of King provided several comments regarding Build Alternative components discussed in the aesthetics and visual resources section (see comments A-3.5, A-3.29, A-3.30, A-3.31, A-3.34, and A-3.35). None of the comments required changes to the Program EIS/EIR text but several are pertinent to the analysis of the Preferred Alternative (see **Section 3.6.4.3** below).

3.6.1 REGULATORY REQUIREMENTS

There are no federal or state laws that specifically define or protect visual resources; however, several federal, state and local regulations provide protection for scenic views and other visual resources. Most local jurisdictions have provisions for design review of all commercial, industrial, or public buildings, facilities or other major infrastructure.

3.6.1.1 State

State Scenic Highway Program

The Caltrans Scenic Highway Program is intended to protect and enhance the natural scenic beauty of California's highways and adjacent corridors, through special conservation treatment. The program protects against encroachment of incompatible land uses, mitigates and minimizes development activities along the corridor, prohibits billboards, regulates grading activity, etc.[1]

[1] Caltrans, 2012

3.6.1.2 Local

Monterey County General Plan

The County has adopted, through its General Plan goals and policies, to retain and enhance the visual character, either directly or indirectly. Development and construction must use design guidelines to ensure the development is compatible with visual values of the area.[2]

City of Salinas General Plan

The City of Salinas has a number of natural and historical resources that contribute to the visual character of the city. The city is mostly built-up with distinctive architectural styles, surrounded by agricultural edges that distinguish the aesthetic quality of the area. Salinas has historically been an agricultural community, thus maintaining visual open space and the rural aesthetic character of the community is an important value. Additionally, the city has defined several view corridors along US 101.[3] The city has adopted goals and policies to protect and preserve the community's image and identity.[4]

City of Soledad General Plan

Points within the city have scenic views of the Salinas valley and the Sierra de Salinas Range. The General Plan has adopted goals and policies to protect both natural and manmade scenic resources. New development must comply with the city design standards to ensure best practices are used and are compatible with character of the city.

The City of Soledad set forth goals to revitalize its downtown in its 2012 Downtown Specific Plan. The Specific Plan identifies a proposed passenger rail station site (consistent with that included here as part of the Build Alternative) and also encourages increased infill development, enhanced streetscapes and lighting, and improved sidewalks.[5]

The Soledad Downtown Specific Plan also includes conceptual plans for a proposed passenger rail station, discussed in more detail below.

---

[2] County of Monterey, 2007

[3] City of Salinas, 2002

[4] City of Salinas, 2006. General Plan

[5] City of Soledad, 2012

City of King (King City) General Plan

King City adopted goals and policies to help ensure new development is compatible with the City's visual character and surrounding environment.[6] The King City First Street Corridor Master Plan includes conceptual plans for a proposed passenger rail station (this station is included as an element of the action alternatives ~~Build Alternative~~). Additionally, as described in **Chapter 2.0, Alternatives**, since publication of the Draft EIS/EIR the City of King has adopted draft revised plans for the Multi-Modal Transportation Center – Conceptual Design [(MMTC) (2014)].

San Luis Obispo County General Plan

San Luis Obispo County has open space areas, scenic corridors, and urban landscapes that contribute to its visual character. The County General Plan has designated several scenic resources along the US 101 corridor (identified below). These resources are subject to scenic protection standards indicated in the San Luis Obispo County General Plan. Projects proposed in rural areas and/or designated scenic corridors are subject to design guidelines and standards.[7]

City of El Paso de Robles (Paso Robles) General Plan

Paso Robles has adopted policies and action items intended to retain the rural, open space, and agricultural areas surrounding the city. The city intends that its designation of a "Purple Belt" (wine grape belt) will preserve agriculture and open space and limit the conversion of lands from viticultural to urban uses.[8]

3.6.2 METHODS OF EVALUATION

The visual resources analysis focuses on the existing visual conditions of the railroad corridor and how it would change under each alternative. The analysis focuses on how existing visually dominant features would change and to what extent. Four generalized visual environments characterize the existing visual conditions for the railroad corridor: 1) Agricultural, 2) Urban/Suburban, 3) Industrial/Institutional, and 4) Open Space/Undeveloped. These landscape types are described ~~in Subsection 3.6.3, Affected Environment~~ below and summarize the existing visual baseline against which the potential effects of proposed ~~improvements~~ components will be evaluated.

---

[6] City of King, 1998, Conservation, Open Space, and Safety Elements

[7] County of San Luis Obispo, 2010, Conservation and Open Space Element

[8] City of El Paso de Robles, 2003, Open Space Element

The components of the ~~Build Alternative~~ ~~improvements~~ action alternatives have varying levels of potential visual impacts depending upon on the type of physical improvement and proposed location. For this evaluation, potential visual impacts are grouped accordingly:

- **High visual impact:** The project ~~improvement~~ components would be dominant in the existing landscape and represent a significant change (degradation) of visual character and quality.
- **Medium visual impact:** The ~~proposed improvement~~ project components would be readily discernible but does not dominate the existing landscape and have a moderately adverse effect on existing visual character and quality.
- **Low visual impact:** The ~~proposed improvement~~ project components would be generally consistent with and/or blends with the visual attributes of the existing landscape; little or no degradation of visual character and quality results.
- **No visual impact:** No ~~proposed improvement~~ project components would occur within a particular area or the physical improvement would not be readily discernible by the general public.

3.6.3 AFFECTED ENVIRONMENT

The visual setting of the study area encompasses a spectrum of landscape types, as the rail corridor travels through many physiographic and ecological regions. The range in landscape type depends on the landform and land cover of the study area. Landform describes the shape of the landscape (e.g., valleys, plains, mountains) and land cover describes what overlays the landform (e.g., grassland, residential, agricultural).

The study area consists of the existing railroad between Salinas and San Luis Obispo. Immediately adjacent to the existing railroad, four landscape types predominate 1) Agricultural, 2) Urban/Suburban, 3) Industrial/Institutional, and 4) Open Space/Undeveloped. These landscape types, as described in more detail below, provide the baseline to evaluate the level of visual change that might occur with the alternatives.

3.6.3.1 Landscape Types

Agricultural

As shown in **Figure 3.6-1**, an agricultural landscape is often flat, but in this region can also include rolling hills with parallel straight lines of crops and developed monoculture that stretch to form the near horizon. The continuous texture ranges from various shades of green, where crops are growing for harvest, and brown where crops were recently planted and much of the soil is exposed. In viticultural areas, yellow and red colors can predominate in the autumn. Fences, farm equipment, rural dirt roads, electrical distribution lines, barns, and crop processing buildings are common features in an agricultural area and contribute to the visual character. Agricultural areas are very common in the Salinas Valley and inland Central Coast region.

Urban/Suburban

Urban/suburban areas have a man-made land cover of residential and commercial buildings, parking lots, and landscaping along streets and sidewalks, as shown in **Figure 3.6-2**. Buildings vary in size and shape. Residential areas are often surrounded by walls or fences. Electrical transmission and distribution lines, roadways, street lighting and signs are typical visual features in an urban/suburban area and contribute to the visual character. The railroad corridor travels through several urbanized areas that range in density and intensity and visual dominance of the immediate landscape.

Industrial/Institutional

Industrial/institutional areas are generally characterized by developed land cover that can appear similar to urban/suburban areas, with warehouses and buildings varying in size and shape that dominate the vista in comparison to its surrounding environment, as shown in **Figure 3.6-3**. Industrial areas typically include utility lines, equipment, machinery, freight tracks, and factories that contribute to the visual character. Notably, the existing railroad corridor traverses the San Ardo oil and gas field, which includes diverse man-made textures of drilling equipment as well as infrastructure buildings to process and transport crude oil and raw gas products. The railway corridor travels through several institutional areas as well with similar types of landscape patterns and elements. Institutional areas include Camp Roberts, an Army National Guard post located north of San Miguel, and state prisons in Soledad and near San Luis Obispo.

Open Space/Undeveloped

Open space and undeveloped areas have natural land cover with very limited man-made visual intrusions and high intactness, as shown in **Figure 3.6-4**. Throughout the inland central coast region, open space and undeveloped areas include gently rolling hills varying in shades of green and neutral colors. Views to distant mountain ranges are generally unimpeded except by intermittent and infrequent stands of large trees. The Salinas River, the Los Padres National Forest, and the Big Sandy Wildlife Area are key visual resources of this type located along the existing rail corridor.

3.6.3.2 Identified Scenic Resources

Varied topography, agricultural areas, and downtown developments comprise the visual character of Monterey County. The County also contains 95 miles of officially designated State Scenic Highways. Moving traffic is the most substantial source of light and glare. Monterey County identifies sensitive visual areas and scenic corridors in its General Plan EIR.[9] Scenic visual resources include views of several mountain ranges, including the Santa Lucias, the Gabilan (which includes the Pinnacles of the eponymous National Park), and others lining the Salinas and Carmel Valleys. The General Plan does not identify any sensitive visual areas or scenic corridors located within the immediate study area, but some distant views of the identified mountain ranges are visible from the railway corridor.

San Luis Obispo County also identifies protected scenic resources in its General Plan. The existing railroad corridor passes through the Los Padres National Forest near Cuesta Grade; in this area, tree cover is dense and the landscape has substantial topography. The General Plan identifies several scenic corridors located in San Luis Obispo County, but none of these are located within the immediate study area. One such corridor is Highway 1, which is a designated State Scenic Highway and National Scenic Byway from San Luis Obispo to the Monterey County line. Along this 57-mile stretch of Highway 1 are four major scenic sections: Morros, Estero Bay, Harmony Valley, and the Big Sur Gateway.[10] The railway parallels Highway 1 as it travels the south slope of Cuesta Grade and into the City of San Luis Obispo; however, none of the previously mentioned major scenic sections are within the study area.

Salinas and Soledad have designated scenic corridors and views within each city's jurisdiction, but none are located within the immediate study area. King City has designated riparian areas along the Salinas River and San Lorenzo Creek as scenic resources and has also adopted goals to improve the visual quality of several roads in the city, including First Street, relatively near the proposed passenger station site.

Identified scenic Resources for Monterey and San Luis Obispo Counties are depicted on **Figure 3.6-5** and **3.6-6**.

---

[9] County of Monterey, 2006, figure 4.14-1

[10] County of San Luis Obispo, 2010, Visual Resources Element

3.6.4 ENVIRONMENTAL CONSEQUENCES

3.6.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing operations and ~~physical~~ components, and assumes the perpetuation of existing freight and passenger service with no physical components ~~improvements~~. As a result, the No Build Alternative would result in no substantial visual impacts because the existing landscape character of the study area would not be changed substantially. Implementation of PTC improvements could require installation of antennas and signaling equipment within or immediately adjacent to the railroad ROW, but no specific equipment for the Coast Corridor has been selected.

3.6.4.2 Build Alternative

This section analyzes potential visual impacts of the Build Alternative ~~The analysis compares the Build Alternative~~ and its components compared to the existing visual setting.

Construction-Period Effects

In general, construction impacts include the visual presence of construction equipment, light and glare impacts from any nighttime construction work, and newly disturbed natural land cover that would recover to its original undisturbed form. Such effects would be somewhat more pronounced in high population areas or areas seen by substantial numbers of passing motorists, pedestrians, bicyclists, and rail passengers. It is reasonable to assume that construction outside of the railroad ROW would have a more noticeable visual effect because these ~~improvements~~ Build Alternative components (e.g., curve realignments and new passenger stations) would involve more earth-moving and excavation activities on land that has not necessarily been in a railroad transportation use. Physical components ~~improvements~~ within the railroad ROW (e.g., signal upgrades, powered switches, and sidings) would occur on land already used by the railroad; therefore, these physical components ~~improvements~~ would be more harmonious with the existing land cover.

Operational Effects

Visual Effects of ~~Proposed~~ Physical Components ~~Improvements~~ under the Build Alternative

Potential visual impacts of each of the ~~proposed physical improvements~~ Build Alternative components are described in segments below.

The Build Alternative proposes reinstitution of the Coast Daylight passenger rail service along the existing active rail corridor. The Build Alternative would expand service initially by 2 passenger trains per day, increasing to 4 trains per day by 2040. While additional trains traveling on the tracks would be apparent, the visual presence of additional trains would be intermittent, with trains generally passing from view in one minute or less. Therefore, reinstitution of the Coast Daylight passenger rail service would have a low visual effect.

Implementation of CTC improvements would require installation of railway signaling poles of approximately 10-12 feet in height at periodic intervals along one or more sections of the existing railroad. The portions of the existing railroad currently under CTC already feature such signal poles. Exact locations of new signal poles have yet to be defined, but would be within the existing ROW and would be visually consistent with existing elements and features of the railroad. Additionally, the installation of new powered switches and rail upgrades would all occur in the immediate track bed and would not exceed the height of the existing track. Accordingly, such features would be difficult to discern against the existing visual landscape and thus would be highly unlikely to result in any significant visual impact. Consequently, visual effects from track/signal upgrades and powered switches would not substantial and are not discussed further.

Salinas

Track upgrades and new powered switches are proposed to the existing railroad tracks within urban/suburban landscape types within the City of Salinas. Adjacent areas include residential, commercial, and industrial buildings. ~~Proposed~~ Physical components ~~improvements~~ in this area would be largely imperceptible to viewer groups in the greater urbanized context as they would be implemented directly into the tracks. These components ~~improvements~~ would not be out of context or substantially change the overall visual character of the area; therefore, the visual impact would be low.

Salinas to Chualar

The new Spence siding is proposed within agricultural landscape types of this segment. A new siding entails construction of an additional track immediately alongside the existing railroad, generally within the existing railroad ROW. Adding a segment of additional track along the existing railroad would not pose a substantial visual contrast with the existing visual environment and the visual impacts would be low.

Chualar to Soledad

The landscape type within this segment is predominantly agricultural, with some urban/suburban areas near the City of Gonzales and Soledad. There are no ~~proposed~~ physical components ~~improvements~~ proposed between Chualar and Soledad beyond rail upgrades that would be embedded into existing railroad tracks and corridor-wide signaling improvements. ~~Such features~~ These components would be difficult to discern against the existing visual landscape and the visual impacts would be low.

Soledad Passenger Station

A new passenger rail station is proposed for the City of Soledad. Soledad has an urban/suburban landscape type, surrounded by agricultural areas. Soledad's Downtown Specific Plan, includes a potential layout view of station along Front Street. The development plans for this station are conceptual in nature, but propose a ticket building, an overhead pedestrian overpass on eastern side of the tracks, and a parking area on the western side of the tracks. According to the *Downtown Soledad Specific Plan EIR*, the proposed railroad parcels are undeveloped and a new one/two story structure may ~~potentially~~ block the view of potentially historic structures and existing development on Front Street for viewers traveling on US 101. The addition of a new passenger station would generally blend into the existing urbanized visual character of Soledad and would not disrupt views of the mountains to the east. The *Downtown Soledad Specific Plan EIR* concluded there would be moderate viewer sensitivity to a new station.[11] While previously undeveloped parcels would be converted to accommodate new passenger station plans and may potentially alter the existing visual character, the proposed station footprint would be generally consistent with the existing urbanized visual character. Therefore, there would be a medium visual impact for a new passenger station in Soledad.

Soledad to King City

The Harlem/Metz curve realignments and the Coburn curve realignments are proposed in this segment predominantly in agricultural and open space/undeveloped landscapes. These curve realignments would cut through agricultural land up to about 600 feet beyond the existing railroad ROW. The curve realignments would disrupt and permanently alter existing agricultural land cover where the new train tracks would be located. However, relatively few sensitive viewers are located near the physical component ~~proposed improvement~~ areas,

[11] City of Soledad, 2012, pp. 4.1-7-4.1-14

since the areas are predominantly rural, and the curve realignments would introduce railroad elements that already exist in the nearby viewshed. The proposed curve realignments would become part of the landscape and contrast would lessen over time. Notwithstanding, these curve realignments would directly convert existing land and have a readily discernible effect on the visual landscape. As a result, the visual impact would be medium to high.

The new siding at Chalone Creek and the King City siding extension are also proposed in this segment. Each would add or extend a siding railroad track within the railroad ROW, parallel to the existing alignment. The visual impact would be low because the new track would be consistent with the existing visual setting. The King City siding travels through an urban area that is more populated, but would also have a low visual impact because extending the track along the existing corridor would not visually contrast with the existing viewshed.

King City Passenger Station

A new passenger rail station is proposed in King City. King City has an urban/ suburban landscape type, surrounded by agricultural areas and ringed by hills. K*ing City's First Street Corridor Master Plan* includes a schematic diagram of the proposed passenger station along the existing tracks that parallel First Street. The city envisions a station platform about 12 feet wide and 800 feet long, along with a small parking lot.[12]

Given the nature and the visual setting ~~of the proposed site~~, the proposed station would not adversely affect scenic resources or corridors. Furthermore, the proposed stations would not visually contrast with the urban, developed visual setting. The proposed station would ~~in fact~~ be consistent with the existing urbanized visual character of King City. Therefore, there would be a <u>low</u> ~~medium~~ visual impact for the proposed station.

King City to San Ardo

Curve realignments are proposed at MP 165 and MP 172 in agricultural and open space/undeveloped landscape types. The proposed MP 165 curve realignment location would be east and at a higher elevation than the existing train tracks as the Coast Corridor travels against a hillside to the east. The new tracks would traverse an agricultural area and require conversion of existing land cover where the new train tracks would be located. Because of the natural topography and placement of

[12] City of King, 2013, p. 10.

new tracks, the resultant railroad would be somewhat more visible. Therefore, the proposed MP 165 curve realignment would have a readily discernible effect on the visual landscape and a medium visual impact.

Agricultural landscape types are apparent to the west of where the curve realignment is proposed at MP 172. The existing railroad corridor is located on the east side of the adjacent frontage road. The proposed realignment would move the train tracks to the east side of the frontage road, potentially creating a new at-grade crossing in this location. An at-grade crossing in a rural area ~~may~~ would entail signs and signaling for safety purposes. While proposed curve realignments would not sharply contrast with the existing visual character once construction is complete, implementation of curve realignments would directly convert existing land cover and have a readily discernible effect on the visual landscape. As a result, the visual impact would be medium.

The proposed new San Lucas siding would extend through agricultural landscape types until entering the unincorporated community of San Lucas. The San Lucas community is comprised of one and two story residential buildings and industrial areas. A second track would have a low visual impact because adding a track along the existing corridor would not present a significant visual contrast with the existing viewshed.

San Ardo to Bradley

There are no proposed components ~~improvements~~ within the San Ardo oil and gas fields except corridor-wide rail upgrades and signaling improvements within the railroad ROW. ~~As discussed, such features~~ These components would be difficult to discern against the existing industrial/institutional landscape; therefore, ~~would be highly unlikely to result in any significant visual impact~~ there would be no visual impact.

The Getty/Bradley curve realignments are located just south of the San Ardo area with few nearby viewers. The landscape type for this portion of the segment is open space/undeveloped. Implementation of curve realignments would directly convert existing land cover and have a readily discernible effect on the visual landscape. As a result, the visual impact would be medium.

The Bradley siding extension is also proposed in this segment. The landscape type is also open space/undeveloped. Further south, the Bradley siding passes through Bradley, an unincorporated city in Monterey County. Bradley is a small residential community that is adjacent to the Coast Corridor. An extended siding track would have a low visual impact because it would be harmonious with the existing corridor and would not pose a strong visual contrast with the existing viewshed.

Bradley to San Miguel

South of Bradley, the Coast Corridor passes the Big Sandy Wildlife Area and Camp Roberts. The Big Sandy Wildlife Area is an open space/undeveloped landscape type characterized by open grasslands and stream habitat. The Camp Roberts landscape is marked by out-of-use, decaying military barracks buildings and signage.

The McKay/Wellsona curve realignment is proposed in this segment with Big Sandy Wildlife Area on the East and Camp Roberts on the west. This proposed realignment would traverse the Big Sandy Wildlife Area, ~~in doing so, extending the~~ and extend the visual reach of the railroad from an industrial area adjacent to US 101 to a designated open space area - whose very openness is an important element of its existing visual character. If this curve realignment is selected for construction and design practices cannot avoid or minimize its footprint within the Big Sandy Wildlife Area, the resulting adverse visual effects could be high.

San Miguel to Paso Robles

Within San Miguel, the predominant landscape type is urban/suburban with residential areas, buildings, paved roadways, and development. San Miguel is comprised of one and two story residential buildings and industrial areas. South of San Miguel, the landscape type is mostly open space/undeveloped and agricultural, with occasional homes scattered on both sides of the railroad corridor. The Coast Corridor is east of US 101 within this segment.

A leg of the proposed McKay/Wellsona and all portions of the Wellsona/Paso Robles curve realignments are proposed in this segment. Each would cut through agricultural land outside the railroad ROW. Implementation of curve realignments would directly convert existing land cover and have a readily discernible effect on the visual landscape. As a result, the visual impact would be medium.

The proposed Wellsona siding would add a new siding track, adjacent to the existing track and within the ROW. A second track would have a low visual impact because adding a track along the existing corridor would not visually contrast with the existing viewshed.

Paso Robles to Santa Margarita

South of Paso Robles, the landscape type is predominantly urban/suburban with residential areas surrounding both sides of the Coast Corridor alignment, with both rural and agricultural farming areas scattered nearby as well. Several physical components ~~improvements~~ are proposed within this segment.

The proposed Templeton siding would add a second track, adjacent to the existing track and within the railroad ROW. A second track would have a low visual impact because adding a track along the existing corridor would not visually contrast with the existing viewshed.

The proposed Templeton/Henry curve realignment and the Henry/Santa Margarita curve realignments would occur outside the railroad ROW. The proposed curve realignments would permanently alter existing land cover and require tree removal in areas where new tracks would be located. The Templeton/Henry curve realignment would be noticeable to the local road and nearby residential neighborhoods west of the rail alignment.

The portions of the Henry/Santa Margarita curve realignment near Salinas Road and Asuncion Road, if constructed, would potentially cut through residential and farming properties approximately 100-150 feet from the existing railroad ROW, likely entailing the removal of several existing buildings. New tracks would be placed closer to nearby residents and viewer groups, which would sharply lower the visual character and quality of the landscape for these residents. The proposed Henry/Santa Margarita curve realignments would be dominant in the existing landscape and would permanently convert existing land cover. As a result, the visual impact could be high.

Santa Margarita to San Luis Obispo

The landscape type between Santa Margarita and San Luis Obispo is primarily open space/undeveloped. Dense vegetation and trees surround the Coast Corridor on both sides in some areas and the topography of the landscape becomes more pronounced as the railroad and US 101 pass through a portion of the Los Padres National Forest.

A second mainline is proposed within this segment~~, the second mainline~~ which would be constructed within the existing railroad ROW. The size and reach of the Los Padres National Forest make it an important visual resource within San Luis Obispo County and the larger Central Coast region. Views of the existing rail corridor from US 101 are somewhat limited through this area due to intervening trees between the highway and the railroad. Furthermore, the hilly topography through this area also limits visibility of the railroad from passing vehicles. Dense trees somewhat limit views of the freeway and the railroad from adjacent portions of the National Forest itself. ~~In summary~~ Therefore, a second track would have a low to moderate visual impact because adding a track along the existing corridor would not strongly contrast with the existing visual setting.

3.6.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the King City siding extension and passenger station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile “island” of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, visual effects for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded components are located. The discussions below assess visual effects relative to such modified or excluded components.

Soledad to King City (King City siding extension)

In the Preferred Alternative, the section between Soledad and King City would retain all Build Alternative components without modification, with the exception of the King City siding extension relocation. The relocated siding extension would start at the north end of the existing siding (MP 159.19) and extend north to MP 156.38 immediately adjacent to the existing railroad and within the railroad ROW.

The visual environment for the area of relocation is heavily influenced by agricultural uses. Crops observed in the area include primarily low-growing vegetable crops. Few buildings or structures are in the visual proximity, so fewer viewer groups would be affected by the relocated siding extension than the Build Alternative, which would have extended the siding to the developed area south of the City of King. Therefore, the visual impact of the relocated siding extension would be low because extending the track along the existing rail corridor would not result in a new strong visual contrast with the existing viewshed.

City of King Passenger Station

The Preferred Alternative incorporates revised draft plans for the City of King passenger station. These revised draft plans place the station in the same urbanized visual environment as the Build Alternative. The station would be located within the First Street Corridor area, which is mostly surrounded by industrial buildings and adjacent to existing railroad tracks. As a result, man-made features dominate the visual character in this area. Accordingly, the station would not visually contrast with the surrounding urbanized visual character and would not interfere with any scenic corridor or other scenic resource. Therefore, the visual impact of the proposed King City station would be low.

San Miguel to Paso Robles and Santa Margarita (Curve realignments and Island CTC)

In the approximately 32 miles of railroad between San Miguel and Santa Margarita, the Preferred Alternative would retain all of the corridor-wide components of the Build Alternative, the same extensions of existing sidings at Wellsona and Templeton as in the Build Alternative, and the same powered switches as the Build Alternative. However, the Preferred Alternative would exclude four curve realignments included with the Build Alternative (McKay/Wellsona, Wellsona/Paso Robles, Templeton/Henry, and Henry/Santa Margarita). Moreover, the Preferred Alternative would include the installation of a 27 mile "island" CTC between McKay and Santa Margarita.

As noted for the Build Alternative, the four curve realignments would have resulted in medium to high visual impacts as the realigned tracks would have become new dominant features in the area, reducing localized visual character and quality. Since the Preferred Alternative does not include the curve realignments, visual conditions in the four areas proposed for curve realignments would not change substantially from existing conditions, except for visual effects associated with the installation of "island" CTC from McKay (MP 202) to Santa Margarita (MP 229). As described for the Build Alternative, CTC requires the installation of railway signaling poles of about 10-12 feet in height at periodic intervals. Portions of the Coast Corridor have CTC features in place, as illustrated in **Figure 3.6-7** from MP 233 in Southern Santa Margarita. As noted for the Build Alternative, the exact locations of new signal poles have yet to be defined, but would be within the existing railroad ROW and would be visually consistent with existing elements and features of the railroad. Accordingly, CTC features would not contrast strongly with the existing visual landscape and as such, would not result in any substantial adverse visual impact.

Table 3.6-1 Potential Visual Impacts

Project Components	Landscape Type	Visual Impacts		
		No Build Alternative	Build Alternative	Preferred Alternative
Salinas Powered Switch	Urban/Suburban	N/A	None	None
Upgrades to Existing Alignment Section #1	Urban/Suburban; Agricultural	Low	Low	Low
Spence Siding Extension	Agricultural	N/A	Low	Low

Project Components	Landscape Type	Visual Impacts		
		No Build Alternative	Build Alternative	Preferred Alternative
Upgrades to Existing Alignment Section #2	Agricultural	Low	Low	Low
Gonzales Powered Switch	Urban/Suburban	N/A	None	None
Soledad Powered Switch	Urban/Suburban	N/A	None	None
Soledad New Passenger Station	Urban/Suburban	N/A	Medium	Medium
Harlem/Metz Curve Realignments	Agricultural; Open Space/ Undeveloped	N/A	Medium	Medium
Chalone Creek New Siding	Agricultural; Open Space/ Undeveloped	N/A	Low	Low
Upgrades to Existing Alignment Section #3	Agricultural; Urban/Suburban	Low	Low	Low
Coburn Curve Realignments	Agricultural; Open Space/ Undeveloped	N/A	Medium	Medium
King City Siding Extension	Agricultural; Open Space/ Undeveloped	N/A	Low	Low
King City New Passenger Station	Urban/Suburban	N/A	Low ~~Medium~~	Low
King City Powered Switch	Urban/Suburban	N/A	None	None
Upgrades to Existing Alignment Section #4	Agricultural	Low	Low	Low
MP 165 Curve Realignment	Agricultural	N/A	Medium	Medium
San Lucas New Siding	Agricultural; Open Space/ Undeveloped	N/A	Low	Low
Upgrades to Existing Alignment Section #5	Agricultural; Open Space/ Undeveloped; Industrial/Institution al	Low	Low	Low
MP 172 Track Realignment	Agricultural; Open Space/ Undeveloped	N/A	Medium	Medium

Project Components	Landscape Type	Visual Impacts		
		No Build Alternative	Build Alternative	Preferred Alternative
San Ardo Powered Switch	N/A	N/A	None	None
Getty/Bradley Curve Realignments	Open Space/ Undeveloped	N/A	Medium	Medium
Bradley Siding Extension	Open Space/ Undeveloped	N/A	Low	Low
Bradley Powered Switch	Open Space/ Undeveloped	N/A	None	None
Upgrades to Existing Alignment Section #6	Industrial/ Institutional; Open Space/ Undeveloped	Low	Low	Low
Upgrades to Existing Alignment Section #7	Industrial/ Institutional; Open Space/ Undeveloped; Urban/Suburban	Low	Low	Low
McKay/Wellsona Curve Realignments	Industrial/ Institutional; Open Space/ Undeveloped	N/A	High	NA - Not Included
McKay East Powered Switches	Industrial/ Institutional; Open Space/ Undeveloped	N/A	None	None
Wellsona New Siding	Urban/Suburban	N/A	Low	Low
Upgrades to Existing Alignment Section #8	Urban/Suburban	Low	Low	Low
Wellsona/Paso Robles Curve Realignments	Urban/Suburban	N/A	Medium	NA - Not Included
Templeton Siding	Urban/Suburban	N/A	Low	Low
Templeton/ Henry Curve Realignments	Urban/Suburban	N/A	Medium	NA - Not Included
Upgrades to Existing Alignment Section #9	Urban/Suburban	Low	Low	Low

Project Components	Landscape Type	Visual Impacts		
		No Build Alternative	Build Alternative	Preferred Alternative
Henry/Santa Margarita Curve Realignment	Urban/Suburban; Agricultural; Open Space	N/A	High	NA - Not Included
Santa Margarita Powered Switch	Urban/Suburban	N/A	None	None
Cuesta Second Main Track	Open Space/ Undeveloped	N/A	Low to Medium	Low to Medium
Upgrades to Existing Alignment Section #10	Open Space/ Undeveloped	Low	Low	Low

Source: Circlepoint, 2013

3.6.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

~~Mitigation strategies could include design features and techniques to integrate new rail improvements into the existing landscapes.~~ During project-level review, design measures should be reviewed with local jurisdictions, resource agencies, and the public to determine site-specific effectiveness and acceptability. The measures listed below are applicable to the Build and Preferred Alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures would also be identified during that review.

MIN-VIS-1. In locations where construction would take place overnight, appropriate light and glare screening measure would be used at construction staging areas, including the use of downward cast lighting.

MIN-VIS-2. Where physical components ~~improvements~~ pass through or along the edge of residential or heavily traveled roadways, landscape treatments such as trees and shrubs, would be installed and continuously maintained along the edge of the railroad ROW to provide partial screening of visual changes.

MIN-VIS-3. While new sidings/siding extensions can have low visual impacts as noted above, use of sidings for long-term "parking" of train cars can have visual consequences. Mitigation strategies would include limits on the use of sidings for longer-term train car storage, with potential priority to areas of greater visual sensitivity.

MIN-VIS-4. Night lighting at stations would be the minimum required for operations and safety. All lights would be hooded and directed to the area where the lighting is required to be on all the time, sensors and timers would be specified.

MM-VIS-5. Natural land cover removed or disturbed to implement physical components ~~improvements~~ would be replaced, as feasible.

~~These mitigation strategies would help reduce the level of visual impact of the proposed physical improvements. Future evaluation prior to implementing an improvement would determine specific mitigation suitable for each proposed improvement and specific location.~~

3.6.6 SUBSEQUENT ANALYSIS

Future project-level environmental review will be necessary if any of the Build or Preferred Alternative components ~~improvements~~ are to be carried forward. The visual analysis will specifically evaluate the visual character and quality of the study area and assess potential effects to existing conditions based on ~~proposed~~ project components. At that time, a detailed assessment of construction and operation-related activities will occur. The amount of introduced man-made development features and encroachment will be the criteria to determine the overall changes to visual quality. The evaluation will focus on changes to the integrity and continuity of the physical environment, as well as the viewer responses to physical changes.

Note: South of Salinas

Note: South of Salinas

Existing Landscape Type: Agricultural

Figure **3.6-1**

Source: Google Earth, 2013

Note: Soledad

Note: King City

Existing Landscape Type: Urban/Suburban

Figure 3.6-2

Source: Google Earth, 2013

Note: San Ardo Oil & Gas Fields

Note: Camp Roberts

Existing Landscape Type: Industrial/Institutional

Figure 3.6-3

Source: Google Earth, 2013

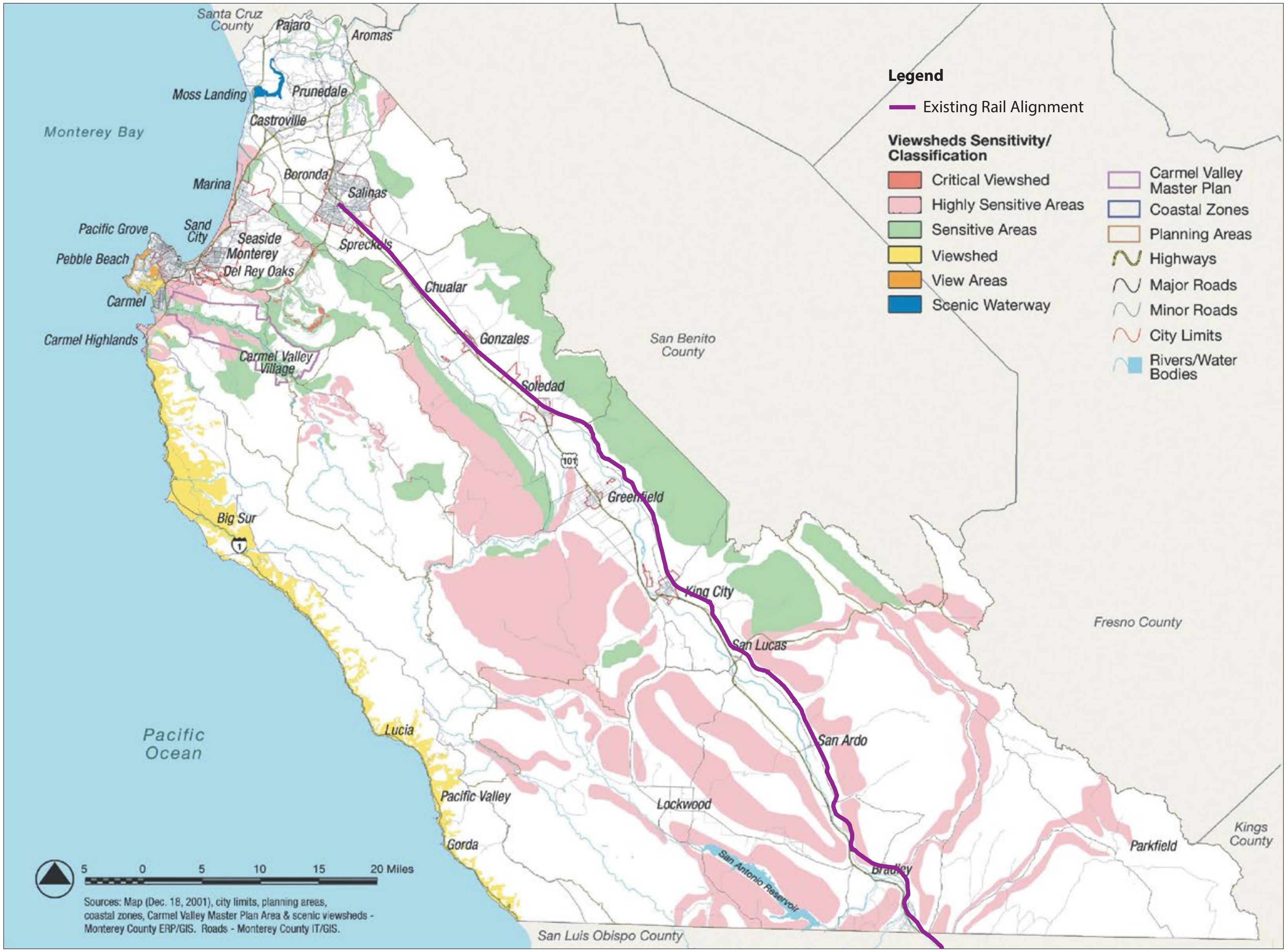
Note: North of Paso Robles

Note: Highway 101 within Los Padres National Forest

Existing Landscape Type: Open Space/Undeveloped

Figure **3.6-4**

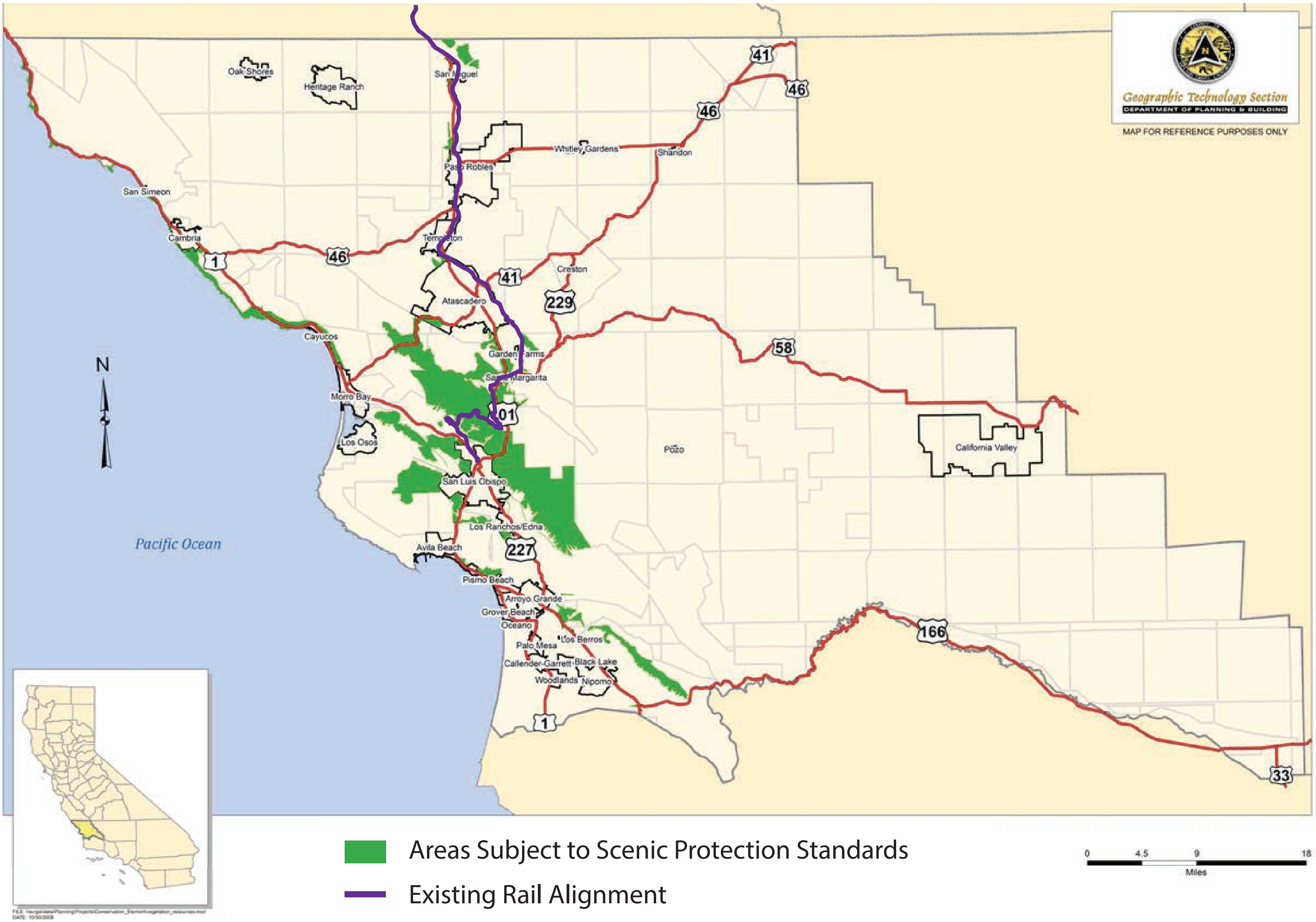
Source: Google Earth, 2013



Monterey County Visual Resource Areas

Figure **3.6-5**

Source: Monterey County, 2004



Areas Subject to Scenic Protection Standards

Existing Rail Alignment

San Luis Obispo County Visual Resource Areas

Figure 3.6-6

Source: San Luis Obispo County, 2010

Centralized Traffic Control

Figure
3.6-7

Source: Circlepoint, 2015

3.7 AGRICULTURAL AND FOREST RESOURCES

This section describes agricultural and forest lands in the study area, and estimates the potential for the No Build and action alternatives to result in the conversion of such lands into non-agricultural and forest uses.

This section describes updates and changes made in response to comments on the Draft Program EIS/EIR. **Chapter 5.0, Comments and Coordination**, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. The City of King provided several comments regarding project elements that have been incorporated into the Preferred Alternative (see comments A-3.36 through A-3.38). **Section 3.7.4.3** below provides analysis of the Preferred Alternative. None of the City of King's comments resulted in text revisions to the Program EIS/EIR.

3.7.1 REGULATORY REQUIREMENTS

3.7.1.1 Federal

Farmland Protection Policy Act

The Farmland Protection Policy Act (FFPA) was implemented to minimize the extent to which federal activities contribute to the unnecessary and irreversible conversion of farmland to non-agricultural use. Federal agencies are required under the FPPA[1] and its regulations,[2] to coordinate with the National Resource Conservation Service (NRCS) of the United States Department of Agriculture (USDA) prior to taking or approving any federal action that may irreversibly convert farmland to nonagricultural use.

In accordance with the NRCS and per section 1541(b) of the FPPA,[3] federal agencies are required to examine potential direct and indirect effects to farmland of a proposed action and its alternatives before approving any activity that would convert farmland to non-agricultural use. To the extent practicable, policies and

[1] FPPA, 7 USC § 4201 et seq.

[2] 7 CFR Part 658

[3] 7 USC 4202(b)

plans must be made compatible with state, local, and private policies and programs that have been established to protect farmland.[4]

Protected farmland is usually divided into three classifications: prime farmland, unique farmland, and farmland of statewide or local importance. Classification standards may differ across state lines; each state may set its own criteria for classification in each category.

The following types of land are exempted from the FPPA and its associated procedures:

- Soil types determined not suitable for crops, such as rocky terrain or sand dunes (although some such federally-owned lands may be eligible for a grazing agreement from the Bureau of Land Management);
- Sites where the right-of-way for a project is located entirely within a delineated urban area and the project requires no prime or unique farmland, nor any farmland of statewide or local importance; and
- Farmland that has already been converted to industrial, residential, commercial or is used for recreational activity.

United States Forest Service (USFS)

The existing railroad right of way travels through a portion of the Los Padres National Forest north of the Cuesta Grade. The right-of-way is on land within the boundary of the National Forest, but the land is not owned by the USFS. The Forest and Rangeland Renewable Resources Planning Act (RPA) as amended by the National Forest Management Act (NFMA), establishes a process for developing, amending, and revising land management plans for National Forests.

3.7.1.2 State

Farmland Mapping and Monitoring Program

The California Department of Conservation maintains the ~~Farmland Mapping and Monitoring Program~~ FMMP, a statewide inventory of California's agricultural resources. The FMMP produces maps and statistical data that rate land according to soil quality and irrigation status. The FMMP also tracks changes in the use and designation of agricultural lands.

[4] 7 CFR Section 658.1

The FMMP classifies farmland according to categories established by the USDA, but based on California criteria: prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance.[5]

Prime farmland refers to land with the best combination of physical and chemical properties to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land with this designation must have been used for production of irrigated crops at some point during the four years prior to the mapping date. Land must meet a set of criteria set by the NRCS.

Farmland of statewide importance is similar to prime farmland but exhibits minor shortcomings, such as steeper slopes or less ability to store moisture in the soil. Farmland of statewide importance also must have been used for production of irrigated crops at some time during the four years prior to the mapping date.

Unique farmland is composed of lesser quality soil than prime farmland or farmland of statewide importance. Unique farmland is used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards found in some climatic zones of California. Unique farmland must have been used for production of crops at some time during the four years prior to the mapping date.

Farmland of local importance is defined by each county government. Monterey County has chosen not to implement such a definition, so there is no farmland of local importance in Monterey County. In San Luis Obispo County, lands that meet all of the characteristics of prime or statewide importance, with the exception of irrigation, are simultaneously designated as farmland of local importance.

The FMMP also maintains a database of lands suitable for grazing. California Government Code §65570(b)(3) defines grazing land as "...land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock." Whereas the designations of prime, unique, and locally/statewide important farmland are contingent upon the active or recent use of lands in agricultural activities, lands identified by FMMP as suitable for grazing need not be actively grazed. Grazing land is not specifically protected at the state level; however, local governments can choose to protect such lands in their land use planning documents. Both Monterey and San Luis Obispo counties include

[5] Cities and counties within the study area may identify additional categories of farmland, but these are not indexed within the FMMP.

grazing lands in their definitions of agricultural lands; however, they are not afforded the same protection as Important Farmlands, described above.

Williamson Act

The California Land Conservation Act of 1965, also known as the Williamson Act, established a tax incentive for the voluntary enrollment of agricultural and open space lands in contracts between local government and landowners.[6] The agreement ensures the land will be maintained for agriculture and open space and other compatible uses, as defined by state law and local ordinances. In areas where agricultural lands interface with growing suburban or urban development, Williamson Act contracts are a means of ensuring the long term financial viability of agricultural uses. Without a Williamson Act contract, the taxable basis of agricultural lands on the urban fringe can increase to such an extent that agricultural operations become economically infeasible for the landowner.

Williamson Act contracts remain valid for a period of ten years. By default, the contract is renewed each year for the next ten years, unless the landowner or local government files to initiate nonrenewal. After ten years, the contract terminates with the filing of a notice of nonrenewal. Under limited circumstances and conditions, Williamson Act contracts may also be terminated upon petition of the landowner.[7] Termination proceedings require the approval of the local government legislative body, such as the City Council or County Board of Supervisors.

The State of California has an additional regulation to guide the public acquisition of and/or location of public improvements on lands under Williamson Act contracts.[8] These policies discourage the use of such lands for public improvements and require due consideration before any such lands can be acquired for any public purpose.

It should be noted that cancellation or non-renewal of a Williamson Act contract (or portion thereof) is not considered a *physical* environmental impact under either CEQA or NEPA. Rather, the use of land under Williamson Act contracts for implementation of proposed project improvements would pose a potential conflict with State of California policy. California Government Code § 51290-51295 discourages the conversion of land under an agricultural preserve to non-agricultural public use.

[6] California Government Code Sections 51200 to 51295

[7] Government Code §51280 et seq.

[8] GC § 51290-51295

3.7.1.3 Local

Monterey County General Plan

The Agricultural Element of the Monterey County General Plan contains policies to enhance and support long-term productivity and commercial viability of the County's agricultural industry. It provides guidance for the treatment of agricultural land to ensure that land use policies do not inappropriately limit or constrain "routine and ongoing agricultural activities." The plan also includes measures designed to strength the County's Right-to-Farm Ordinance, which is designed to protect farmers from the pressure of urban development.

The Monterey County Agricultural and Historical Land Conservancy manages more than 15,000 acres in the County, acquiring agricultural easements by gift or through direct purchase from landowners.

San Luis Obispo County General Plan

The Agriculture element of the San Luis Obispo County General Plan provides a description of the main types and uses of agricultural land in the county, as well as a set of policies, goals, and objectives for each land-type. The element comprises numerous protective policies for supporting production and maintaining diverse and abundant agricultural lands in San Luis Obispo County.

3.7.2 METHODS OF EVALUATION

For the purposes of this analysis, an adverse impact to farmland or forestland resources would occur if an action alternative would directly or indirectly:

- Convert to nonagricultural use any prime farmland, farmland of statewide importance, or unique farmland, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency.
- Sever farmland by the placement of barriers that impede farmland access which could result in the creation of non-economic remnant parcels and/or conversion of farmland to a nonagricultural use.
- Result in the loss of forest land or conversion of forest land to non-forest use.
- Convert to nonagricultural use any land under a Williamson Act Contract.

This analysis used GIS to compute acreage of various protected farmland classifications involved with the physical components ~~proposed improvements~~. To determine the quantity of protected farmland in the Corridor, California

Department of Conservation's FMMP was used. United States Forest Service Land Ownership was also used to determine acreages of National Forest lands within the Corridor. The study area for both agricultural and forest resources includes all permanent and temporary footprints for each proposed realignment, siding, track/signal, and second mainline upgrade. Permanent and temporary impact footprints were defined in GIS ~~as discussed below~~.

The acreage of lands that would be affected under a Williamson Act Contract was not calculated for this program-level analysis. Williamson Act Contracts change over time and should be evaluated in detail when, and if any, ~~elements of the Build Alternative~~ components of the action alternatives are carried forward for further design and potential construction.

Construction-Period Effects

Construction of the physical components ~~improvements~~ contemplated under the Build and Preferred Alternatives would involve the use of temporary construction areas to park construction equipment, store supplies, and otherwise serve as construction staging areas. If any such areas are located on farmland or forest land resources, the use of such lands for construction staging could temporarily alter the land use to a nonagricultural use. These areas would eventually be returned/restored to pre-construction conditions.

Given that detailed engineering designs are not available at this time, the construction period impacts associated with new sidings and siding extensions was assumed to include a 50 foot buffer on either side of the existing ROW. Construction-period impacts associated with the second mainline include a footprint of 100 feet on either side of the existing ROW, and for curve realignments the temporary impact footprint includes 200 feet on either side of the existing ROW. These buffers are intended to capture indirect effects of any potential construction.

As further described in **Chapter 2.0, Alternatives**, the City of King provided extensive written comments on the Draft Program EIS/EIR, advising that the City had updated its draft plans for the City of King siding extension and passenger station. Since publication of the Draft Program EIS/EIR and as noted in the City's comments, the City of King engaged a railroad engineer (RailPros) to consider modifications to rail facilities in the area. The RailPros study considered extending the siding from MP 156.38 to 159.19, resulting in a siding 2.81 miles or about 14,800 feet in length on the east side of the mainline track. Because of the availability of detailed design plans for the City of King siding extension, potential construction-period impacts on agricultural resources were analyzed exclusively on the east side of the alignment within the 50 foot buffer to more accurately represent the effects of siding extension construction work.

Operational Effects

Permanent impacts to farmland or forest resources would occur with the conversion of these resources to non-agricultural uses, such as conversion to a new station, rail realignment, siding, track/signal upgrade, or second mainline. ~~Given that detailed engineering design is not available at this time,~~ Potential permanent impacts associated with curve realignments are assumed to occur in an area up to 100 feet beyond the potential new realigned rail centerline.

The Draft Program EIS/EIR included siding and siding extension impacts in its operational impact analysis. Operational impacts to agricultural and forest resources were over reported due to overlap between existing railroad ROW and FMMP polygons. Therefore, permanent impacts due sidings and siding extensions are now reported as zero since no protected farmland is assumed to exist within the railroad ROW.

3.7.3 AFFECTED ENVIRONMENT

The existing Coast Corridor railroad between Salinas and San Luis Obispo traverses extensive areas of land in agricultural use. Agriculture and viticulture are economically important industries in both Monterey and San Luis Obispo counties.

Agriculture is the largest land use by acreage in Monterey County. The northern end of the study area between Salinas and King City is bordered on both sides by agricultural lands. Major crops include salad greens, broccoli, artichokes, spinach, and strawberries.[9] The agricultural lands in this region are classified as predominately Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

South of King City agricultural uses transition to vineyards and grazing land, including areas of the Santa Lucia Mountains to the west and the Cholame Hills and Diablo range to the east. Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are also present in this region to San Ardo. Grazing land dominates from San Ardo south to the San Luis Obispo County line.

[9] City of Salinas, 2002, Section 5.9

San Luis Obispo County also has rich agriculture and extensive viticulture. The top value crops in 2011 included strawberries, wine grapes, cattle and calves, and broccoli.[10] Agricultural uses along the study area are mixed and concentrated around Paso Robles. They include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Grazing Land, Farmland of Local Importance, and Farmland of Local Potential. Agricultural lands in this area run adjacent to US 101 and the railroad for approximately 20 miles. Wine grapes dominate the agricultural landscape both in greater Paso Robles and adjacent areas. Other crops, such as barley, oats, wheat, apples, walnuts, pistachios, and almonds are also cultivated in the area.[11]

South of Paso Robles, agricultural uses decline in their abundance and density particularly through suburban communities like Atascadero. Some grazing lands dot the landscape. South-facing slopes surrounding Atascadero are home to chaparral vegetation, willows, sycamores, bay laurel, and cottonwoods.[12]

South of Atascadero the existing Coast Corridor railroad traverses approximately a 2 mile portion of the Los Padres National Forest near the Cuesta Grade area of San Luis Obispo County. This portion of the National Forest is comprised largely of oak woodlands and is the only densely forested area through which the 130 mile rail line travels between Salinas and San Luis Obispo. The Los Padres National Forest Strategic Plan indicates that the mountains and the US 101 corridor in this region are particularly suited for special uses, including the existing railroad line and adjacent agricultural/ranching uses.[13] Exiting Los Padres National Forest, the railroad the railroad negotiates the sharp hillside with a few sharp turns until entering the city of San Luis Obispo. **Figures 3.7-1** and **3.7-2** depict farmlands within the study area.

3.7.4 ENVIRONMENTAL CONSEQUENCES

3.7.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing freight and passenger rail operations along existing physical components between Salinas and

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[10] County of San Luis Obispo Department of Agriculture Weights and Measures, 2011

[11] City of El Paso de Robles, 2003, Open Space Element

[12] City of Atascadero, 2002

[13] USDA, 2005

San Luis Obispo. The only physical component ~~improvement~~ expected under the No Build Alternative would be the installation of PTC. No specific plans have been identified, but anticipated PTC improvements outside train-based equipment would most likely take the form of communications apparatus (e.g., antennas, signal upgrades). Such components ~~improvements~~ are anticipated to be placed within the existing railroad ROW and, therefore, would be assumed to have minimal or no effect upon agricultural uses adjacent to the railroad ROW.

Between today and 2040, agricultural lands in the project corridor could be converted to other uses as a result of proposed population growth, transportation improvement projects, and other economic changes in the Coast Corridor region. The Monterey County General Plan EIR projects that buildout of the General Plan could result in the conversion to non-agricultural uses of almost 5,500 acres of Important Farmland and about 6,800 acres of land under Williamson Act contracts.[14] Some farmland conversion is also anticipated in San Luis Obispo County, but very little Prime Farmland conversion is expected in either county, owing to strong farmland protection measures each county has adopted.

3.7.4.2 Build Alternative

Construction-Period Effects

During construction, lands adjacent to areas of physical components ~~proposed improvements~~ could be used for construction access. Consequently, some disruption of agricultural uses could occur. Such disruption would be most likely to occur due to grading and other ground disturbing activities that could result in increased dust levels, which could in turn hinder successful farming activities. Construction may also require temporary staging areas outside the railroad ROW, including on lands in agricultural use.

Table 3.7-1 below shows potential temporary impacts to farmland resulting from the Build Alternative ~~improvements~~ components.

[14] County of Monterey, 2006, p. 4.2-1

Table 3.7-1 Build Alternative: Construction-Period Effects of Project ~~Improvements~~ Components to Farmlands (in acres)

Build Alternative Components	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Farmland of Local Potential and/or Importance	Grazing Land
Salinas Powered Switch	0	0	0	0	0
Upgrades to Existing Alignment Section #1	0	0	0	0	0
Spence Siding Extension	5	2	14	0	0
Upgrades to Existing Alignment Section #2	0	0	0	0	0
Gonzales Powered Switch	0	0	0	0	0
Soledad Powered Switch	0	0	0	0	0
Soledad New Passenger Station	0	0	0	0	0
Harlem/Metz Curve Realignments	96	9	14	0	40
Chalone Creek New Siding	7	0	4	0	10
Upgrades to Existing Alignment Section #3	0	0	0	0	0
Coburn Curve Realignments	67	11	10	0	21
King City Siding Extension	6	0	0	0	3
King City New Passenger Station	0	0	0	0	0
King City Powered Switch	0	0	0	0	0

Build Alternative Components	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Farmland of Local Potential and/or Importance	Grazing Land
Upgrades to Existing Alignment Section #4	0	0	0	0	0
MP 165 Curve Realignment	23	5	0	0	15
San Lucas New Siding	1	0	0	0	18
Upgrades to Existing Alignment Section #5	0	0	0	0	0
MP 172 Track Realignment	79	3	0	0	14
San Ardo Powered Switch	0	0	0	0	0
Getty/Bradley Curve Realignments	0	0	0	0	73
Bradley Siding Extension	0	0	0.5	0	29
Bradley Powered Switch	0	0	0	0	0
Upgrades to Existing Alignment Section #6	0	0	0	0	0
Upgrades to Existing Alignment Section #7	0	0	0	0	0
McKay/ Wellsona Curve Realignments	0	0	0	69	24
McKay East Powered Switches	0	0	0	0	0
Wellsona New Siding	3	0	0.5	5	6

Build Alternative Components	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Farmland of Local Potential and/or Importance	Grazing Land
Upgrades to Existing Alignment Section #8	0	0	0	0	0
Wellsona/ Paso Robles Curve Realignments	4	0	7	8	0
Templeton Siding	0	0	0	12	5
Templeton/ Henry Curve Realignments	0	0	0	0	0
Upgrades to Existing Alignment Section #9	0	0	0	0	0
Henry/Santa Margarita Curve Realignment	0	0	0	95	8
Santa Margarita Powered Switch	0	0	0	0	0
Cuesta Second Main Track	0	0	0	5	20
Upgrades to Existing Alignment Section #10	0	0	0	0	0
Totals	**290**	**31**	**51**	**194**	**286**

Source: ICF, 2013.

The only forest lands in the Salinas to San Luis Obispo corridor occur near the Cuesta Grade area immediately north of the City of San Luis Obispo. The only ~~proposed~~ physical component ~~improvement~~ in this area is the second mainline, which is proposed from southern Santa Margarita towards the Cuesta Grade. Review of aerial mapping indicates that the area of the proposed second mainline is along private inholdings within the boundaries of the Los Padres National Forest. These inholdings are in a variety of uses, including public utilities (the Santa Margarita Booster Station), and the railroad ROW. The railroad passes through a forested area here as it climbs the Cuesta Grade. The precise location of the second mainline has not yet been determined but the conservative buffer area assumed herein indicates the potential for construction of the second mainline to potentially require tree removal/clearance of forest lands.[15]

Operational Effects

Operational effects would result from the conversion of farmland to some other use in perpetuity. In this case, it would result from the footprint of the ~~proposed~~ physical components ~~improvements~~ requiring the acquisition of farmland.

Many of the components envisioned under the Build Alternative would be constructed within existing railroad ROW, such as rail/track upgrades, signal upgrades, powered switches, and new sidings and siding extensions. Therefore, no land outside the existing railroad ROW would be permanently converted. Some permanent impacts associated with new sidings and siding extensions were over-reported in the Draft Program EIS/EIR. FMMP data was used for analyzing potential impacts to agricultural resources. FMMP data does not account for roads, highways, or railroads. Potential Permanent impacts to FMMP categories were over-reported due to overlap between existing railroad ROW (e.g., permanent siding and track/signal upgrade footprints) and FMMP data sets (polygons). Therefore, permanent impacts associated with new sidings and siding extensions are now reported as zero since no protected farmland is assumed to exist within the railroad ROW.

Similarly, no permanent impacts to agricultural or forest resources are expected to occur from the proposed new passenger stations, as both station sites are within the urbanized downtown areas of Soledad and King City.

For those components requiring land outside of the existing railroad ROW, such as curve realignments~~, new sidings~~ and the second mainline, **Table 3.7-2** below quantifies potential permanent impacts to farmland.

[15] Construction-period impacts associated with the second mainline include a footprint of 100 feet on either side of the existing railroad right-of-way.

Table 3.7-2 Build Alternative: Operational Effects of Project ~~Improvements~~ Components to Farmlands (in acres)

Build Alternative Components	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Farmland of Local Potential and/or Importance	Grazing Land
Salinas Powered Switch	0	0	0	0	0
Upgrades to Existing Alignment Section #1	0	0	0	0	0
Spence Siding Extension	~~4~~ 0	~~0.5~~ 0	~~13~~ 0	0	0
Upgrades to Existing Alignment Section #2	0	0	0	0	0
Gonzales Powered Switch	0	0	0	0	0
Soledad Powered Switch	0	0	0	0	0
Soledad New Passenger Station	0	0	0	0	0
Harlem/Metz Curve Realignments	28	2	4	0	6
Chalone Creek New Siding	~~2~~ 0	0	~~3~~ 0	0	~~8~~ 0
Upgrades to Existing Alignment Section #3	0	0	0	0	0
Coburn Curve Realignments	22	1	4	0	1
King City Siding Extension	~~4~~ 0	0	0	0	~~2~~ 0
King City New Passenger Station	0	0	0	0	0
King City Powered Switch	0	0	0	0	0

Build Alternative Components	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Farmland of Local Potential and/or Importance	Grazing Land
Upgrades to Existing Alignment Section #4	0	0	0	0	0
MP 165 Curve Realignment	7	1	0	0	2
San Lucas New Siding	0	0	0	0	~~18~~ 0
Upgrades to Existing Alignment Section #5	0	0	0	0	0
MP 172 Track Realignment	20	1	0	0	4
San Ardo Powered Switch	0	0	0	0	0
Getty/Bradley Curve Realignments	0	0	0	0	18
Bradley Siding Extension	0	0	~~0.1~~ 0	0	~~50~~ 0
Bradley Powered Switch	0	0	0	0	0
Upgrades to Existing Alignment Section #6	0	0	0	0	0
Upgrades to Existing Alignment Section #7	0	0	0	0	0
McKay/ Wellsona Curve Realignments	0	0	0	20	5
McKay East Powered Switches	0	0	0	0	0
Wellsona New Siding	~~3~~ 0	0	~~0.1~~ 0	~~4~~ 0	~~6~~ 0

Build Alternative Components	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Farmland of Local Potential and/or Importance	Grazing Land
Upgrades to Existing Alignment Section #8	0	0	0	0	0
Wellsona/ Paso Robles Curve Realignments	1	0	2	2	0
Templeton Siding	0	0	0	~~13~~ 0	~~4~~ 0
Templeton/ Henry Curve Realignments	0	0	0	0	0
Upgrades to Existing Alignment Section #9	0	0	0	0	0
Henry/Santa Margarita Curve Realignment	0	0	0	12	1
Santa Margarita Powered Switch	0	0	0	0	0
Cuesta Second Main Track	0	0	0	3	11
Upgrades to Existing Alignment Section #10	0	0	0	0	0
Total	**~~91~~ 78**	**6**	**~~26~~ 10**	**~~57~~ 37**	**~~136~~ 48**

Note: Permanent impacts were over reported for new sidings and siding extensions due to overlap between existing railroad ROW and FMMP polygons. Therefore, permanent impacts due to these proposed upgrades have been revised to zero since it is highly unlikely that farmland exists within the railroad ROW.

Source: ICF, 2013.

As noted above, construction of the second mainline could require clearance of forest lands north of the Cuesta Grade. Effects to forest lands would be concentrated at the construction phase, which could require tree removal to construct the second mainline particularly if the final alignment is identified for an area beyond the existing railroad ROW. Indirect operational effects to forest land could occur through rail operations being extended further into forested areas depending on the final alignment of the second mainline.

3.7.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the King City siding extension and passenger station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile “island” of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects on agricultural and forest resources for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded components are located. The discussions below assess agricultural and forest resource effects as a result of modified or excluded components.

Construction-Period Effects

Construction of any of the physical components under the Preferred Alternative would have similar potential as the Build Alternative to impact agricultural and forest resources, but these effects would be temporary. Some of the physical components are more substantial than others (such as track realignments, siding extensions, and the second mainline). The proposed station would be located within an urbanized portion of the City of King. Construction activities and staging areas would occur near the proposed station footprint, and would not result in any substantial impacts to agricultural or forest resources. Island CTC would be implemented within existing railroad ROW. Construction of the CTC would not require any heavy machinery or construction activity, and thus would not be expected to adversely impact agricultural or forest resources.

The Preferred Alternative excludes four curve realignments in San Luis Obispo County; therefore, construction-period impacts to agricultural and forest resources would be reduced in these locations.

As shown in **Table 3.7-3**, the City of King siding extension could potentially affect 17 acres of Prime farmland during construction. In the aggregate, construction-period impacts to Prime farmland of the Build and Preferred Alternatives are very similar. Additionally, the avoidance, minimization, and mitigation strategies identified below would eliminate or reduce these potential temporary impacts.

Operational Effects

As previously discussed, potential operational and permanent impacts would occur for those components requiring land outside of the existing railroad ROW, such as curve realignments and the second mainline. The Preferred Alternative excluded the four curve realignments in San Luis Obispo County; therefore, effects to agricultural and forest resources in these locations would be reduced.

The revised City of King siding extension and the island CTC would not have any operational effects to agricultural or forest resources as they would be located within existing railroad ROW.

Additionally, the revised City of King passenger station would be located on urban/commercial land and would therefore not have any direct or indirect effects on agricultural or forest resources. Thus, the Preferred Alternative would have reduced operational effects compared to the Build Alternative.

Table 3.7-3 Preferred Alternative: Construction-Period Effects of Project Components to Farmlands (in acres)

Preferred Alternative Components	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Farmland of Local Potential and/or Importance	Grazing Land
King City Siding Extension	17	0	0	0	0.5
King City New Passenger Station	0	0	0	0	0
McKay/ Wellsona Curve Realignments	None. This improvement is not part of the Preferred Alternative.				
Wellsona/ Paso Robles Curve Realignments	None. This improvement is not part of the Preferred Alternative.				
Templeton/ Henry Curve Realignments	None. This improvement is not part of the Preferred Alternative.				
Henry/Santa Margarita Curve Realignment	None. This improvement is not part of the Preferred Alternative.				

Source: ICF, 2013

3.7.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

As previously stated, this analysis used a conservative approach to identifying potential impacts by defining a generous “buffer area” ~~in determining whether the Build Alternative has the potential to result~~ ~~in impacts to~~ for agricultural or forest land resources. Specific impact areas will be calculated as some or all ~~proposed physical improvements~~ project components are carried forward for further design.

Avoiding or minimizing use of farmland or forestland can be achieved through careful design selection of ~~Build Alternatives improvements~~ project components.

If such use cannot be avoided, some farmland conversion cannot be mitigated to a less-than-significant level under CEQA. Generally, the conversion of Prime Farmland to a non-agricultural use is considered to be a significant and unavoidable impact. Mitigation measures (such as placing other lands in conservation easements) can lessen but not fully avoid significant impacts. This is based on the principle that there is a finite amount of Prime Farmland; it is not possible to create or otherwise replace Prime Farmland when ~~some such land~~ it is permanently converted to a non-agricultural use.

The following strategies have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts and will be further refined during the project-level environmental analysis.

A-AG-1. Careful design practices, such as constructing the second mainline to be completely within existing railroad ROW, would avoid potential impacts to agricultural and forest resources along the Corridor, as feasible. Other ~~Build~~ Preferred Alternative ~~improvements~~ components would be designed to avoid or minimize farmland effects through similar design approaches.

MM-AG-1. All Farmland impacts would be at least partially offset through purchase of conservation easements that would permanently maintain lands in agricultural use. These conservation easements would be acquired over agricultural lands of equal quality to those affected.

With regard to Williamson Act contracts, specific conflicts with Williamson Act contracts would need to be identified prior to implementation of any Preferred Alternative component ~~project elements under the Build Alternative.~~

MIN-AG-2. When there is a need to acquire and convert land enrolled in a Williamson Act contract, the Department of Conservation would be notified and requirements of Government Code Section 51290-51295 and 51296.6 would be met.

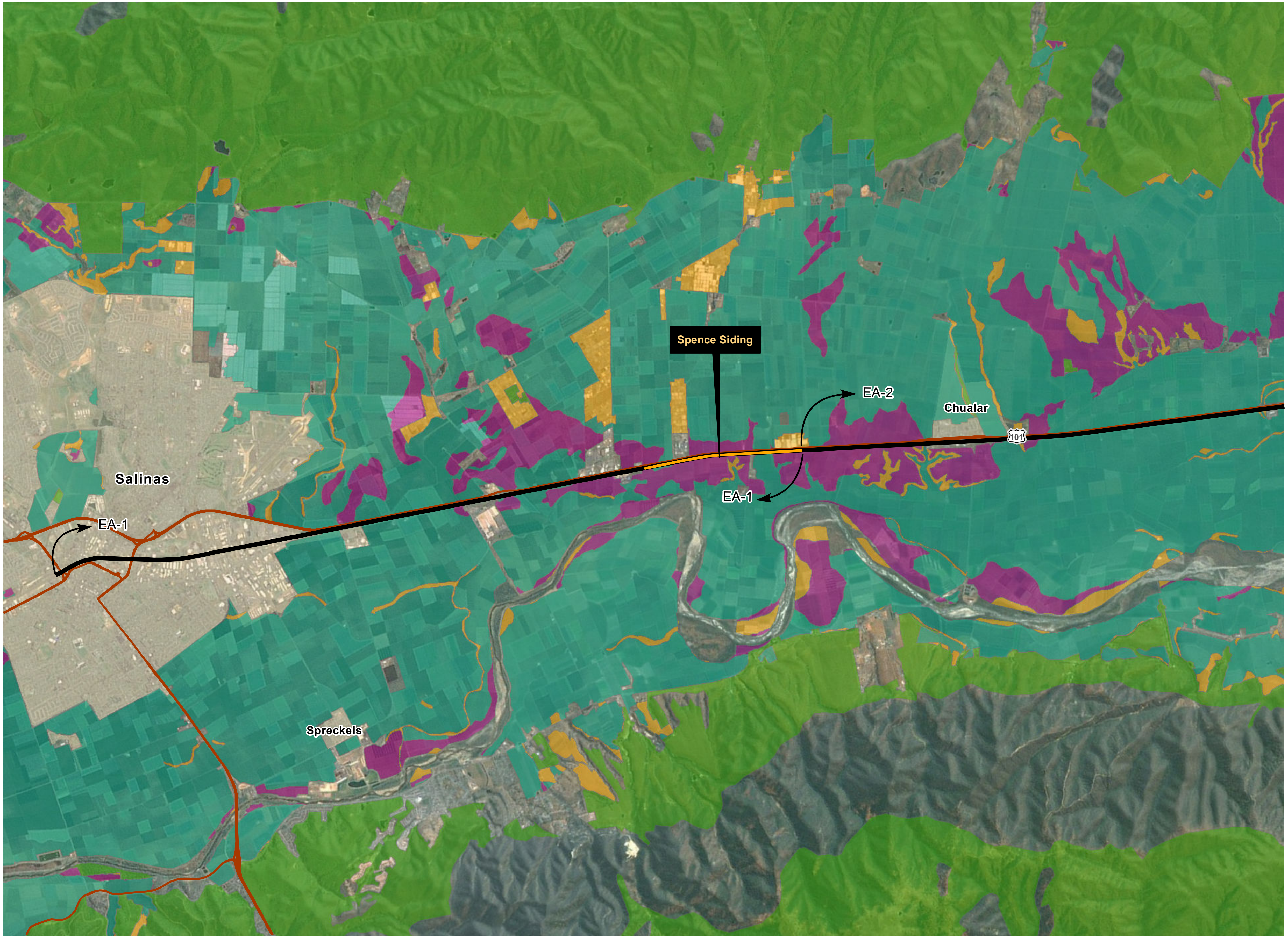
To the extent the second mainline would require either temporary or permanent use of land outside the existing railroad ROW that traverses the Los Padres National Forest, the Forest Service would be consulted to identify appropriate and feasible means to avoid, minimize, or compensate for any forest land impacts.

MM-AG-3. To the extent forest land use could not be fully avoided, potentially feasible mitigation measures include land swaps, fee mitigation, or other similar measures that would compensate for loss of forest lands.

~~The incorporation of mitigation measures would minimize effects related to construction and operation of the physical improvements comprising the Preferred Alternative, but even with mitigation, the Preferred Alternative could result in the permanent conversion of farmland to rail corridor uses. Mitigation strategies would be further refined at project-level analysis.~~

3.7.6 SUBSEQUENT ANALYSIS

Prior to implementation of any elements of the ~~Build~~ Preferred Alternative, additional analysis will be ~~needed~~ completed to determine precise impacts of agricultural and forest resources. ~~As discussed in **Subsection 3.7.3, Affected Environment**, the existing right-of-way as well as a 100 foot wide corridor (for curve realignments) was used to evaluate permanent impacts, while up to 500 foot buffers were used to evaluate construction-period impacts.~~ Conflicts with Williamson Act contracts will also be evaluated in detail prior to implementing any elements of the ~~Build~~ Preferred Alternative.



Legend

Important Farmland

- Unique Farmland
- Farmland of Statewide Importance
- Prime Farmland
- Grazing Land

Project Components

- Existing Alignment
- Sidings
- Realignments

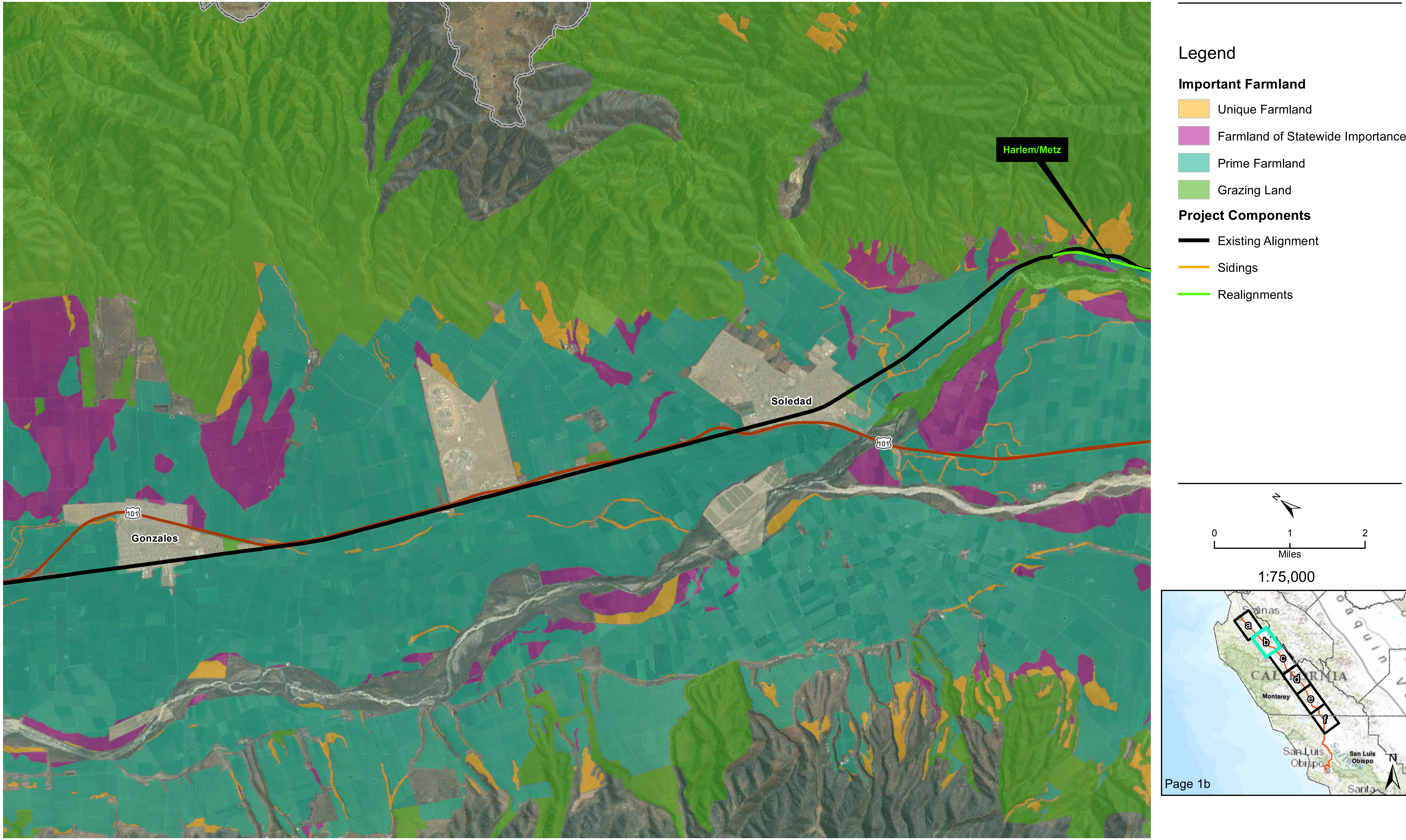
0 1 2
Miles

1:75,000

Important Farmland in Monterey County

Figure **3.7-1a**

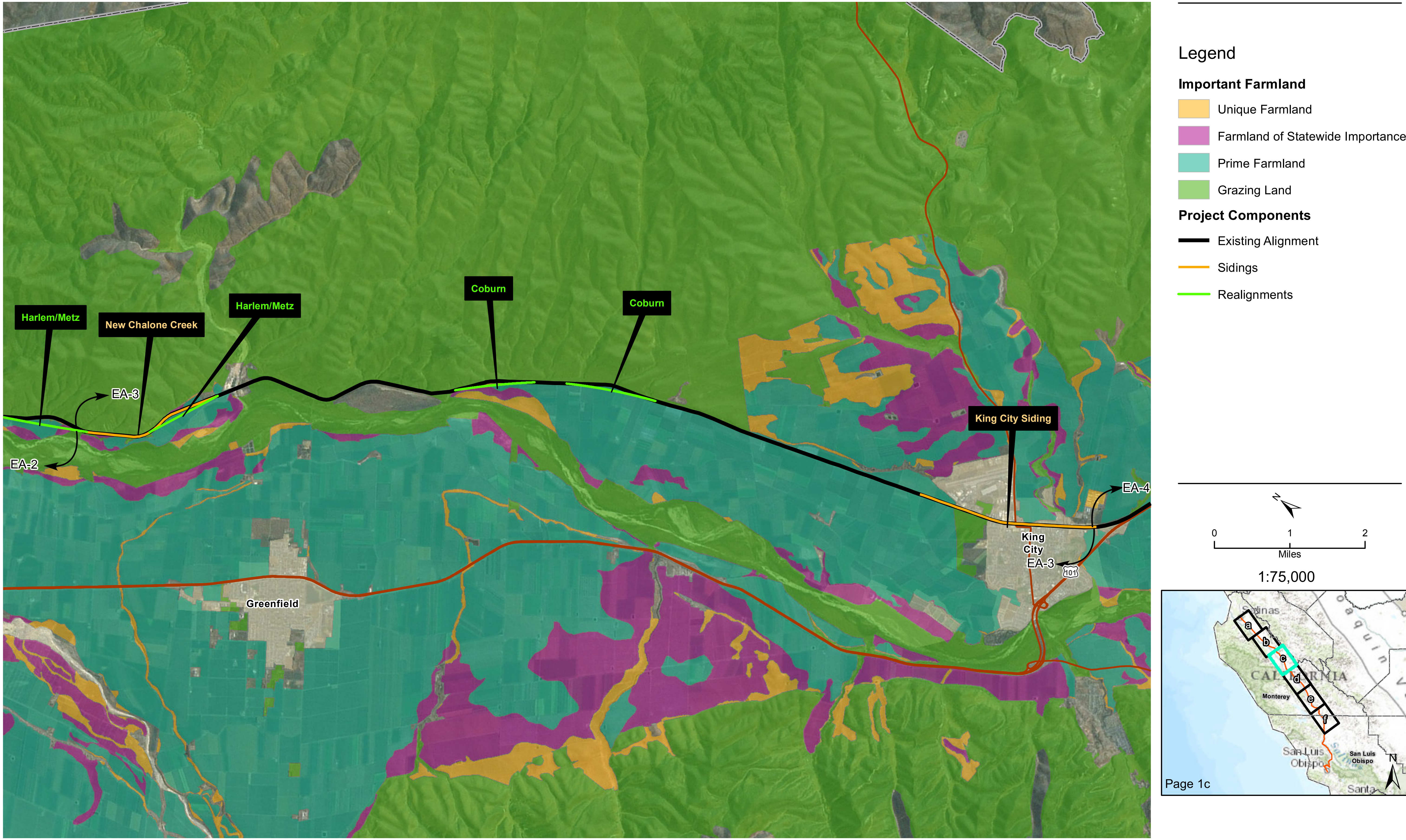
Source: ICF International, 2013



Important Farmland in Monterey County

Figure 3.7-1b

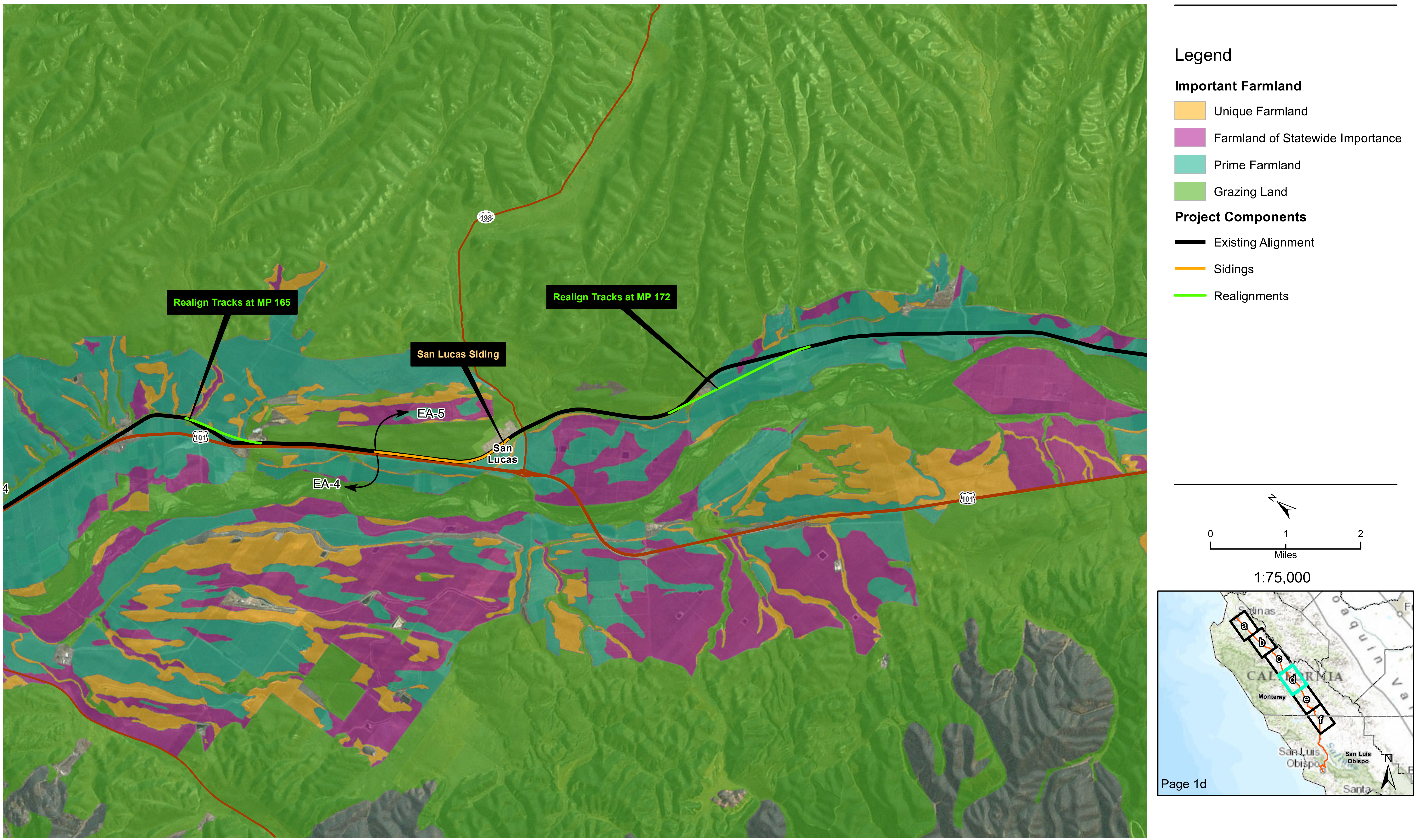
Source: ICF International, 2013



Important Farmland in Monterey County

Figure 3.7-1c

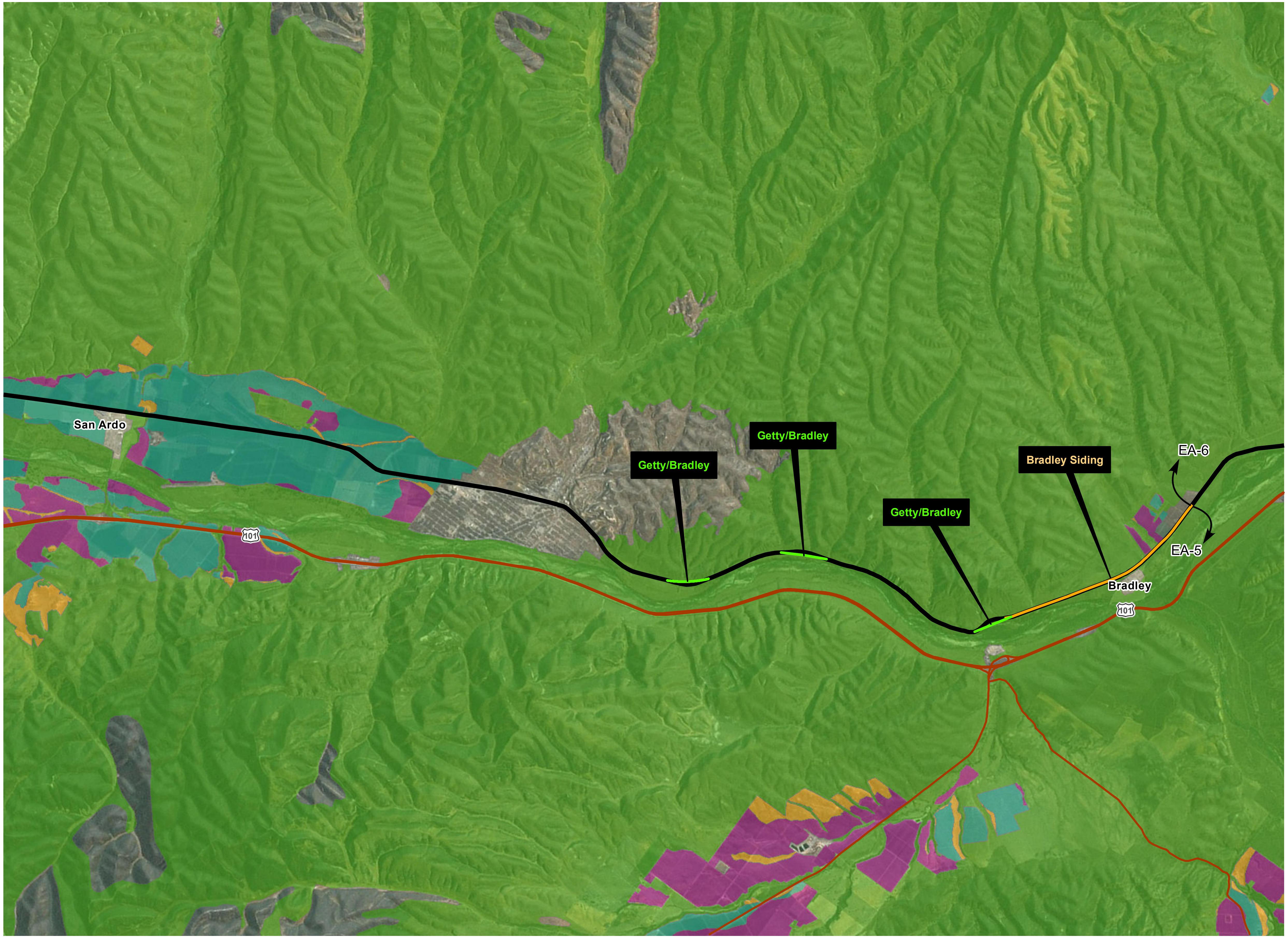
Source: ICF International, 2013



Important Farmland in Monterey County

Figure 3.7-1d

Source: ICF International, 2013



Legend

Important Farmland

- Unique Farmland
- Farmland of Statewide Importance
- Prime Farmland
- Grazing Land

Project Components

- Existing Alignment
- Sidings
- Realignments

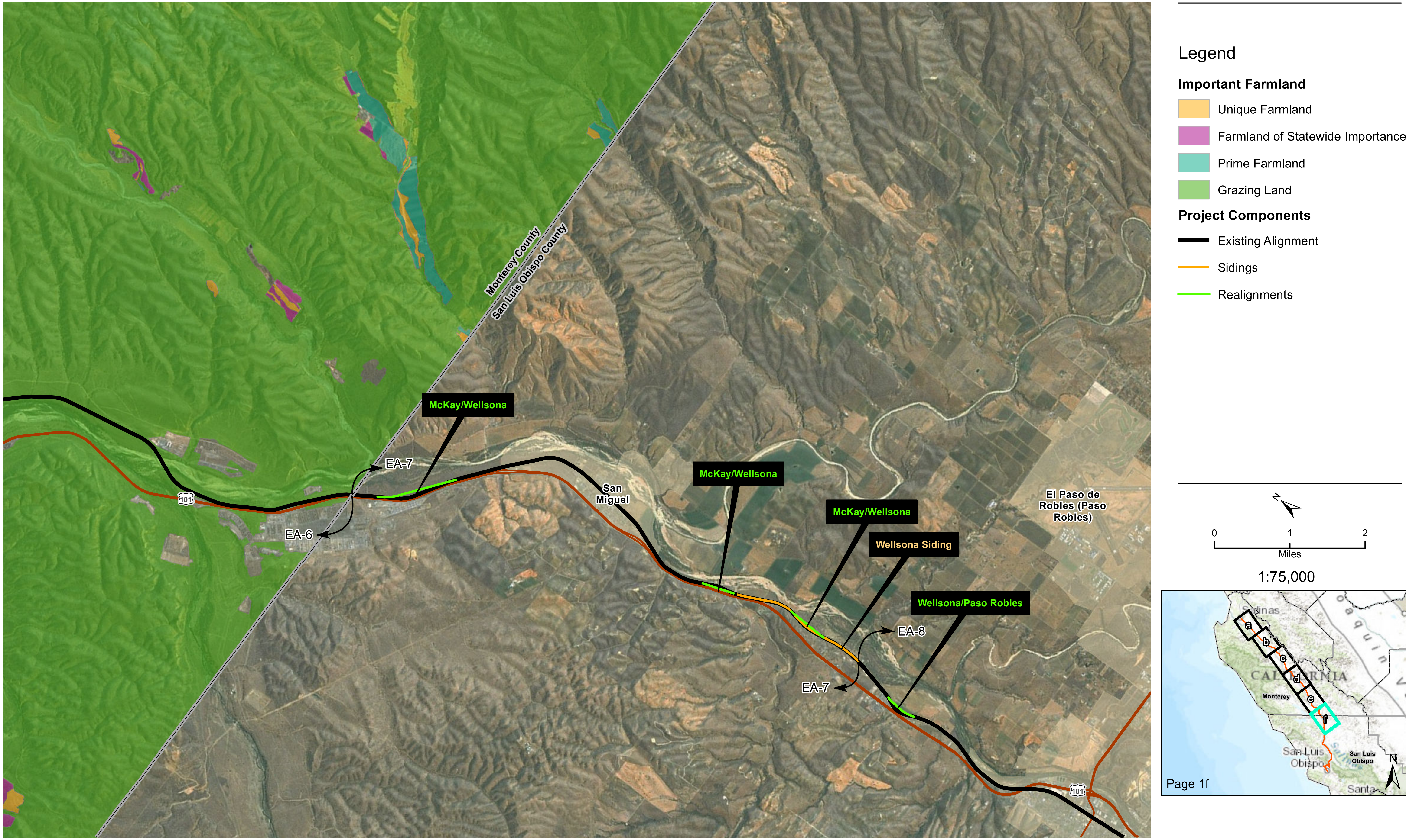
0 1 2
Miles

1:75,000

Important Farmland in Monterey County

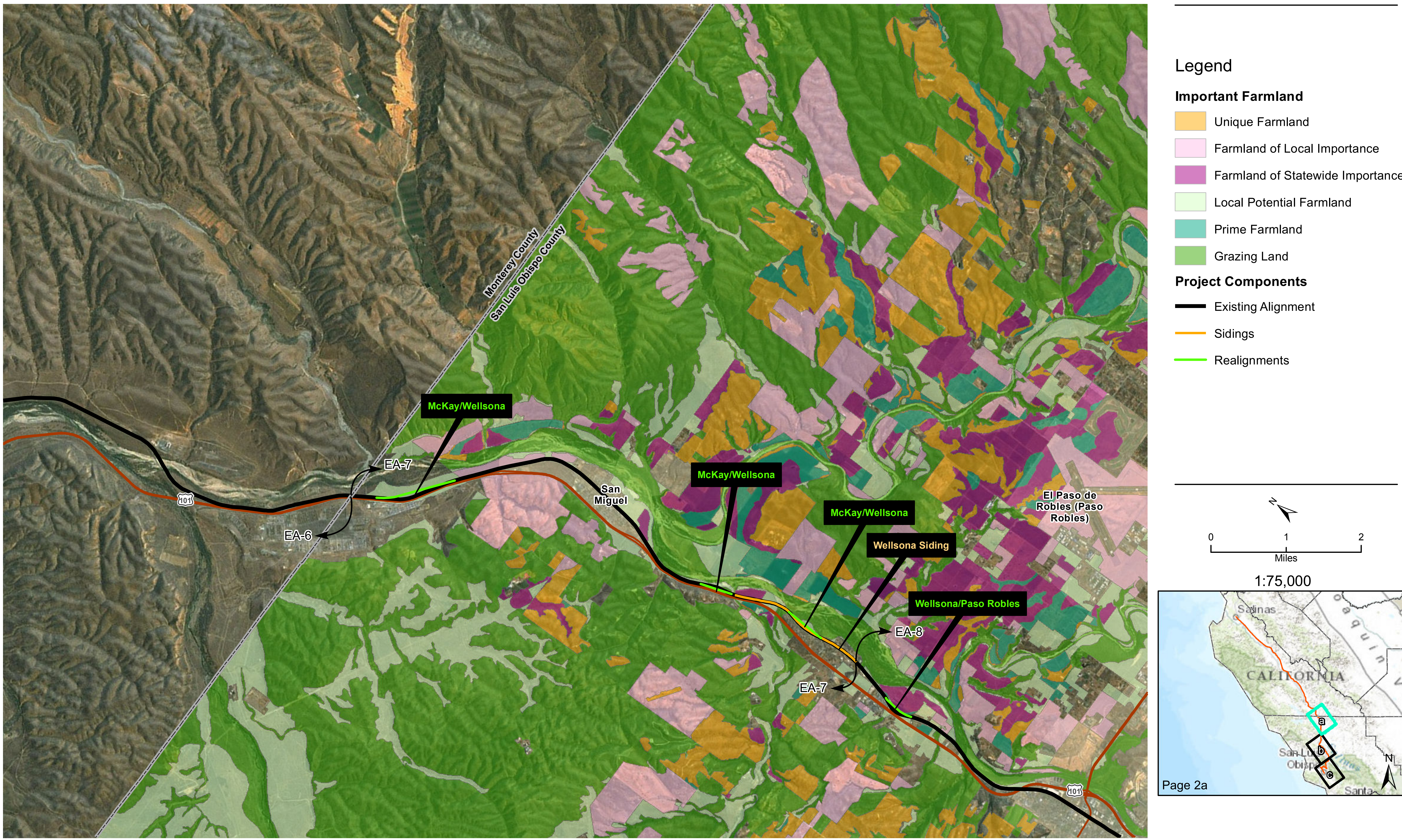
Figure 3.7-1e

Source: ICF International, 2013



Important Farmland in Monterey County

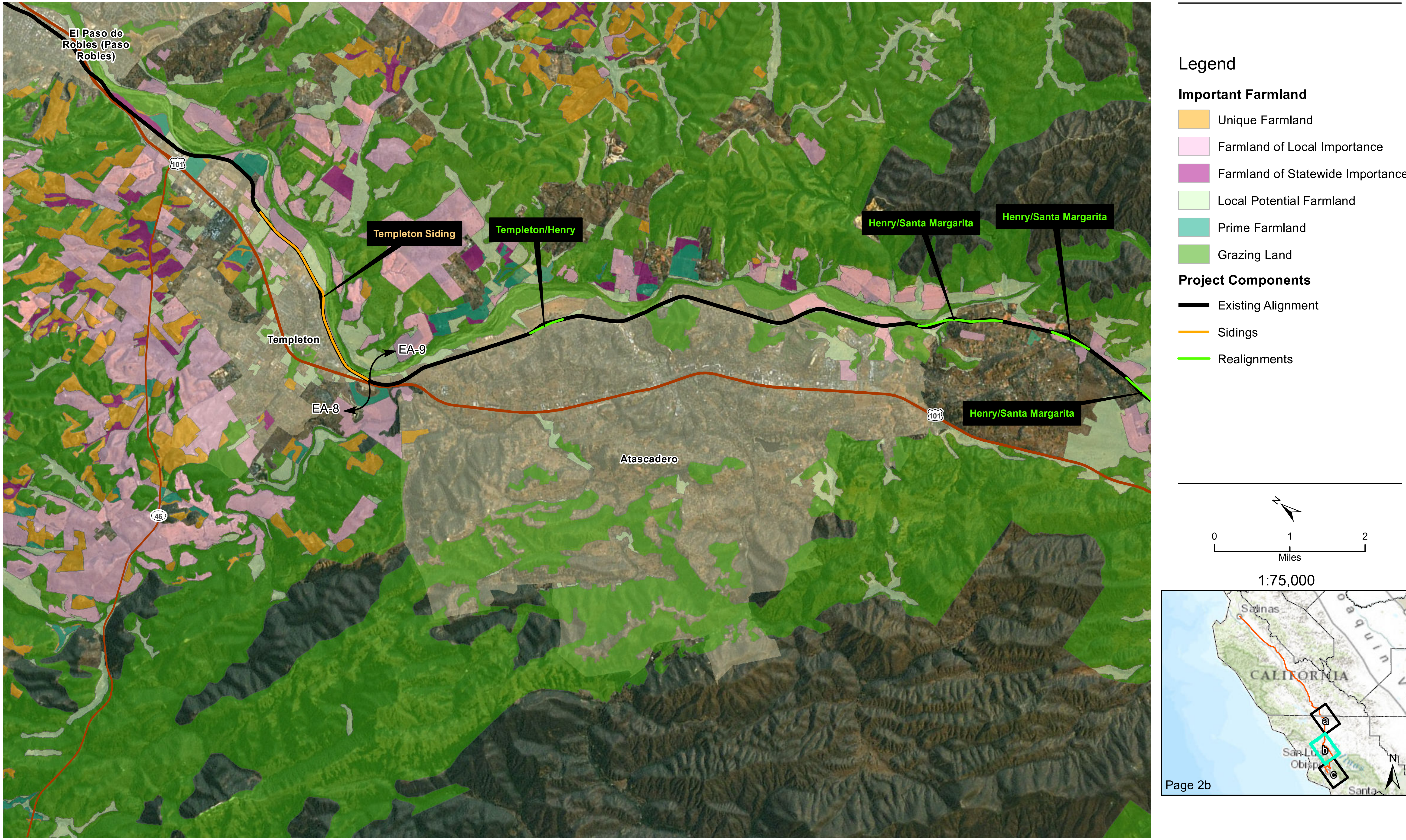
Figure 3.7-1f



Important Farmland in San Luis Obispo County

Figure 3.7-2a

Source: ICF International, 2013



Important Farmland in San Luis Obispo County

Figure 3.7-2b

Source: ICF International, 2013

Important Farmland in San Luis Obispo County

Figure 3.7-2c

Source: ICF International, 2013

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3.8 PUBLIC UTILITIES AND SERVICES

This section describes ~~existing~~ potential impacts to public utilities and services associated with the No Build and action alternatives ~~preferred in comparison with the No Build and Build Alternatives~~. Utilities evaluated in this section include electricity and gas, water, wastewater and telecommunications. Emergency services evaluated in this section include police, fire, and emergency response.

This section describes updates and changes made in response to comments on the Draft Program EIS/EIR. **Chapter 5.0, Comments and Coordination,** includes all substantive comments on the Draft Program EIS/EIR and provides responses to each comment. The City of King provided several comments regarding Build Alternative components discussed in the Public Utilities and Services section (see comments A.3-2 and A-3.43). Comment A.3-2 resulted in clarifying text revisions to the Affected Environment discussion of the Program EIS/EIR. These changes are shown in strikethrough and underline format.

3.8.1 REGULATORY REQUIREMENTS

3.8.1.1 Federal

Federal Communications Commission

The Federal Communications Commission (FCC) regulates interstate and international communications by radio, television, wire, satellite, and cable in all 50 states, the District of Columbia, and U.S. territories. The FCC is an independent U.S. government agency overseen by Congress, and is the primary authority for communications law, regulation, and technological innovation. The FCC's rules and regulations are located in Title 47 of the Code of Federal Regulations (CFR).[1]

Pipeline and Hazardous Materials Safety Administration (PHMSA)

A number of pipelines transmitting petroleum products cross the study area. The Office of Pipeline Safety of the Pipeline and Hazardous Materials Safety Administration (PHMSA), an agency within the U.S. Department of Transportation, is charged with regulating pipeline safety under 49 CFR § 190.1. Pipeline owners and

[1] Federal Communications Commission, 2014

operators are required to meet particular standards of qualification to operate pipelines, uphold established safety standards, and participate in public safety programs that "notify an operator of proposed demolition, excavation, tunneling, or construction near or affecting a pipeline," identify pipelines that may be affected by such activities, and identify any hazard that may affect a pipeline.

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) was established in 1977 to determine whether wholesale electricity prices were reasonable, and proceeded to deregulate the electricity market. Currently, this independent federal agency regulates the interstate transmission of natural gas, oil, and electricity. Additionally, FERC regulates the wholesale electricity rates, oil pipelines, hydroelectric infrastructure, and the natural gas industry. FERC also authorizes the installation or abandonment of natural gas infrastructure, and surveys electric transmission project applications, as well as overseeing environmental affairs related to the natural gas or hydroelectric industries.[2]

3.8.1.2 State

California Public Utilities Commission (CPUC)

The California Public Utilities Commission (CPUC) primarily regulates the provision of privately owned utilities in California. These utilities include privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. The CPUC does not regulate projects that would cross utility lines, these are typically controlled by the utility company themselves; however, the CPUC does regulate the creation of new at-grade rail crossings.

Office of the State Fire Marshal, Pipeline Safety Division (The Division)

The Division regulates intrastate hazardous liquid pipelines pursuant to the Hazardous Liquid Pipeline Safety Act of 1981. The Division investigates all spills, ruptures, fires, and pipeline incidents and currently regulates the safety of approximately 4,500 miles of intrastate hazardous liquid transportation pipelines.[3]

[2] Federal Energy Regulatory Commission, 2014

[3] California Office of the State Fire Marshal, 2013.

3.8.1.3 Local

Monterey County General Plan

The Monterey County General Plan Public Services Element includes policies related to providing adequate public services and facilities (APSF). Ensuring that APSF are available to support new development, and that they are provided concurrently with new development is required, new development is required to connect to existing water service providers whenever possible, and all projects are required to be designed to minimize runoff and absorb rainfall using a variety of mitigation techniques. There are also policies ensuring that new development is guaranteed a long-term sustainable water supply, adequate wastewater treatment, and requiring developers to construct or contribute their fair share to the funding of new or expanded water and/or wastewater treatment facilities if needed to serve their development.

City of Salinas General Plan

The City's General Plan provides policies regarding providing effective and responsive fire and police protection, and emergency response system. A safe and adequate supply of water is encouraged, as well as creating a safer community through the use of design techniques for new development. There are also policies aimed at protecting the community from hazards related to ground transportation, such as rail, truck, and roadway systems.

City of Soledad General Plan

The City's General Plan provides policies requiring adequate public services during new development, fair share contributions from developers for additional public services such as fire and police protection, water-conserving design and equipment in new construction and landscaping, and new development compliance with the Monterey County Integrated Waste Management Plan.

City of King (King City) General Plan

The City's General Plan includes policies requiring new development to assure that adequate services and facilities are, or will be, available within a reasonable time, to provide coordinated, ongoing planning for public service facilities, and requiring that all new development proposals be referred to the Police and Fire Departments for law-enforcement and safety evaluation. There are also policies assuring adequate water service, supply, wastewater service, and drainage throughout the city, and requiring the extension of new power transmission lines to be placed underground.

San Luis Obispo County General Plan

The San Luis Obispo County General Plan provides policies encouraging new development to be carefully located, especially when development involves fuel in higher fire risk areas. Policies also require that adequate facilities, equipment and personnel are available to meet the demands of fire fighting in San Luis Obispo County. The amount, location, and rate of growth allowed by the Land Use Element is restricted by the sustainable capacity of resources, public services, and facilities and the General Plan requires additional public resources, services, and facilities to be provided preemptively to avoid over burdening existing resources.

3.8.2 METHODS OF EVALUATION

Utilities

To better understand the potential for proposed physical components ~~improvements~~ to result in impacts to utilities, the analysis in this section is built upon a review of available data for all known utilities (pipelines, transmission lines, and related facilities) within or adjacent to the project corridor. The purpose of this review is to determine if any of the proposed physical components ~~improvements~~ would cross or pass in close proximity to existing utilities. To the extent potential conflicts have been identified, this document proposes appropriate strategies to avoid or minimize the effects of such conflicts.

A secondary potential impact ~~is whether~~ would occur if any of the proposed components ~~improvements~~ ~~could~~ would result in expanded utility demand that could not be met without the construction of new facilities.

Public Services

Potential public services impacts could occur if there is an identified need to expand or build new facilities for police, fire, or emergency services, or if construction of any proposed physical components ~~improvements~~ could potentially result in the temporary disruption of ~~such~~ these services because of detours or other temporary barriers.

3.8.3 AFFECTED ENVIRONMENT

Public Utilities

The utility service providers in the study area are summarized below.

Natural Gas Facilities

Natural gas facilities and pipelines are provided by Pacific Gas & Electric (PG&E) and Southern California Gas Company (SCG). The service area covered by PG&E includes northern and central California. SCG provides service to most of southern California. There are currently about 3.4 miles (18,000 linear feet) of pipeline immediately adjacent to the 130 mile rail corridor.[4]

Electrical Transmission Lines

Electrical transmission lines in the area are provided by PG&E. PG&Es service area spans much of California, from Shasta Lake area to just south of Lompoc. About 1.1 miles (roughly 5,700 linear feet) of electrical transmission lines are in place immediately adjacent to the existing rail 130 mile rail corridor.[5]

Telecommunications

Telecommunication, through optical fiber, is the backbone for broadband communications. Fiber-optic communication has many advantages over traditional copper-wire and wireless communications; it is non-corrosive, immune to weather and electrical noise, is made from renewable sources, it has more bandwidth, and offers the best return on investment for networks.

Fiber-optic transmission lines are in place along the rail corridor, traveling directly alongside the existing rail. ~~alignment for approximately 30 miles from Paso Robles to San Luis Obispo.[6] Railroad tracks are generally considered good paths for telecommunications cable because they offer unobstructed, linear routes.~~

Solid Waste

Between Salinas and San Luis Obispo, solid waste disposal is provided by multiple service providers. The Salinas Valley Solid Waste Authority (SVSWA) serves the eastern inland portions of Monterey County, including Salinas, Soledad, and King City. The SVSWA operates two landfills; the Johnson Canyon Sanitary Landfill in

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[4] ICF, 2013

[5] ICF, 2013

Gonzales, and the Jolon Road Sanitary Landfill in King City. They each have available capacity to receive solid waste, with 5.9 million cubic yards and 826,500 cubic yards remaining capacities, respectively. The SVSWA also has plans to expand all of its landfills, as well as site a new landfill.[7]

The City of Paso Robles owns a landfill and franchises for solid waste collection within the city limits. Paso Robles Waste Disposal is the sole franchise collection company, and Pacific Waste Services operates the city-owned landfill. As of July 2009, the landfill had over 3 million tons of remaining capacity to receive solid waste.[8]

Solid waste in San Luis Obispo is managed by San Luis Garbage, and is received by the Cold Canyon landfill just outside of the city. The landfill currently accepts up to 1,200 tons per day of disposal material, and is currently waiting for approval to expand the facility, which would increase disposal capacity and extend the life of the landfill by 25 years, to year 2040.[9]

Wastewater

Wastewater services are provided by several utilities along the Corridor. The new and existing train stations are the only facilities that would require wastewater services within the vicinity of the alignment. Further analysis will primarily focus on the utilities in the jurisdictions with proposed or existing stations.

- **Salinas**: Salinas is served by the Monterey County Regional Water Pollution Control Agency (MRWPCA) which provides wastewater conveyance, treatment, disposal, and recycling services. The MRWPCA plant is rated at 29.6 million gallons per day (mgd) and currently flows are 21 mgd resulting in capacity to treat additional wastewater flows. MRWPCA uses connection fees to fund future expansions, and while specific improvement projects have not been identified to meet future needs generated by development, they do not anticipate problems in funding future expansions when they become necessary.[10]

[7] Monterey County, 2006, pp. 4.11-27-4.11-28

[8] City of El Paso de Robles, 2010, Table 5-11 and http://www.prcity.com/GOVERNMENT/departments/publicworks/trash-recycling/index.asp

[9] County of San Luis Obispo, 2009, pp. 3-1-3-2.

[10] City of Salinas, 2002, pp. 5.13-36-5.13-37

- **Soledad**: Soledad operates one wastewater treatment plant with a treatment capacity of 5.5 mgd; however, the current capacity is effectively limited to 4.3 mgd due to disposal capacity limitations. The city currently processes approximately 1.5 mgd, just over 35 percent of the plant's effective capacity.[11] The treated water meets Title 22 Recycled Water Standards. The wastewater treatment plant serves the city and the Salinas Valley State Prison. The plant was upgraded in 2010 to meet the tertiary treatment requirements of the Regional Water Quality Control Board Order WRR R3-2008-0042.[12]
- **King City**: The King City Wastewater Treatment Plant (WWTP) is located along the Salinas River northwest of the city. The facility provides collection, treatment, and disposal of both domestic and industrial wastes. Flow capacity at the facility is approximately 1.2 mgd, and daily flows are estimated to be 0.87 mgd. The city adopted a Wastewater Facilities Plan (WFP) in 2004 which includes improvements that are expected to increase the treatment capacity of the facility. The city has commenced the first phase of improvements to implement the adopted WFP, which will effectively increase the treatment capacity to 1.53 mgd. A second phase of improvements is scheduled for design, bringing capacity to 1.92 mgd.[13]
- **Paso Robles**: The City of Paso Robles operates its own ~~Wastewater Treatment Plant~~ WWTP located along the Salinas River at the north end of town. The existing treatment process fails to meet Federal and State water quality regulations, and the city is occasionally fined for violations of its National Pollution Discharge Elimination System (NPDES) permit. The city is planning a major WWTP upgrade to address these problems and prepare for the future production of recycled water.[14]
- **San Luis Obispo**: San Luis Obispo provides its own wastewater treatment within the city and serves California Polytechnic State University (Cal Poly) and the County of San Luis Obispo Airport. The WWTP provides for collection and treatment for residential, commercial, and industrial users. Over the past nine

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[11] City of Soledad, 2012, p. 3-17

[12] City of Soledad, 2012, pp. 4.6-6-4.6-7

[13] City of King 2011, pp. 4-3-4-4

[14] City of Paso Robles, Wastewater Division website. http://www.prcity.com/government/departments/publicworks/wastewater/. Accessed 8/22/13

years, dry-weather flow to the Water Reclamation Facility (WRF) has ranged from 4.08 mgd to 5.12 mgd, and is designed to accommodate an average dry-weather flow of 5.2 mgd. Improvements are planned that will provide capacity for up to 5.8 mgd to accommodate General Plan buildout.[15]

Water

A variety of service providers deliver water within the vicinity of the Corridor. Given that the existing and proposed new train stations are the only components ~~of the physical improvements~~ that would require any permanent water supply, and that construction ~~-related~~ period water use would be temporary and ~~likely~~ trucked in on an as-needed basis, further discussion will focus on providers that would supply the proposed stations.

- **Salinas**: Both California Water Service Corporation (Cal Water) and Alco Water Service (Alco) provide water to the City of Salinas. Alco serves the east and southeast portions of the city, totaling approximately one third of the city. The majority of the urbanized area is served by Cal Water.
  - Alco's services are regulated by the CPUC and currently meet the level of service standards set forth in General Order 103, as well as State of California Department of Health Services, and Federal Environmental Protection Agency standards and requirements. Water is provided for irrigation, industrial, and commercial purposes through nine wells and one storage tank. Total well capacity is approximately 13,560 million gallons per year (mgy), and pump capacity is about 7,525 mgy. Alco also uses approximately 1,550 million gallons of groundwater per year. Additional storage facilities and wells were planned and discussed in the Salinas General Plan (2002) that would approximately double groundwater source capacity.[16]
  - Cal Water is a private investor-owned utility, also regulated by the CPUC, providing service to approximately 100,000 residents. All of the water is groundwater sourced through 27 privately-owned deep wells, producing approximately 4,700 mgy. Groundwater capacity in the city is rated at 16,900 gallons per minute. Both purveyors face complexities associated with seawater intrusion and high nitrate levels, and Cal Water is working closely with the MCWRA to address these issues.[17]

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[15] City of San Luis Obispo, 2010, p. 8-24
[16] City of Salinas, 2002, pp. 5.13-27/29
[17] City of Salinas, 2002, pp. 5.13-27/29

- **Soledad**: Soledad provides its own municipal water, supplied solely from groundwater retrieved from the Salinas Valley Groundwater Basin. The city currently has four wells providing 5.9 mgd, or 4,100 gallons per minute (gpm) distributed mostly to residential and agricultural uses. Two additional wells are planned to be operational by 2016.[18] The Urban Water Management Plan notes that there are currently no restrictions in place directing how much water the city can extract from the Basin, and the Basin is currently overtapped by approximately four percent per year. Conservation efforts and reduced agricultural water use are expected to remedy the imbalance.[19]
- **King City**: Cal Water serves King City with six wells, providing approximately 2.4 mgd of local ground water to more than 3,100 service connections.[20] The Cal Water system has a maximum production capacity of 3 mgd and is currently adequate to meet the needs of the city. Water demand is expected to increase as the population grows in the city, drilling of additional wells as well as implementing conservation efforts are anticipated to help offset water demand and accommodate additional demand.[21]
- **Paso Robles**: The Paso Robles Water Division is responsible for providing the City with water. There are 19 wells serving approximately 9,200 residential, 800 commercial, and 400 irrigation customers within the city. Water is drawn from the Paso Robles Basin and the Salinas River Underflow, and over 50 percent of the city's water is supplied by seven wells along the Salinas River Corridor. The city is also a participant in the Lake Nacimiento Water Project (NWP) and has secured a 4,000 AFY water entitlement. The design of a new surface-water treatment plant in under design and should be operational by 2015. The water from Lake Nacimiento will supplement water drawn from the Paso Robles Basin and help to ensure a long-term and reliable water supply for the city.[22]
- **San Luis Obispo**: The City of San Luis Obispo provides its own municipal water and draws water from five different sources – the Salinas Reservoir (Santa Margarita Lake), Whale Rock Reservoir, Nacimiento Reservoir, recycled water from the City's WRF, and groundwater.

[18] City of Soledad, 2012, p. 4.6-1

[19] City of Soledad, 2012, p. 3-19

[20] City of King, 2011, pg. 4-1

[21] City of King, 1998, pp. S-19-S-20

[22] City of Paso Robles, 2014b

Public Services

The cities of Salinas, Soledad, King City, Paso Robles, and San Luis Obispo each have their own police departments. Fire protection services are provided by several different organizations. Within Monterey County, Salinas, Soledad, and King City each have their own fire departments. The Department of Forestry and Fire Protection (CAL FIRE) operates fire stations in Paso Robles and San Luis Obispo. Paso Robles Emergency Services and the San Luis Obispo Fire Department also operate fire stations within each of their respective cities.

Section 3.14, Growth Inducement, includes descriptions of existing public park and recreational facilities between Salinas and San Luis Obispo within 500 feet of the existing rail alignment and/or ~~proposed rail improvements~~ project components.

3.8.4 ENVIRONMENTAL CONSEQUENCES

3.8.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing rail operations and physical components, and assumes the perpetuation of existing freight and passenger service between Salinas and San Luis Obispo. The only physical components ~~improvements~~ expected under the No Build Alternative would be the installation of PTC along the Corridor, which would provide increased safety for freight and passenger trains. ~~Such a system~~ PTC, when installed, will require electrical connections at signals but would otherwise not represent any substantial new draw on utility resources. ~~The intention of PTC is to improve rail safety; o~~ Once implemented, demand for rail-related emergency services (already at low levels) would be expected to decrease further.

Construction activities under the No Build Alternative may create some electrical demand, but given that many construction sites use generators ~~and thus~~ do not require connection to the electrical power grid or require natural gas, it can be assumed that demands for ~~such~~ these resources ~~will~~ would be negligible.

It is common practice to coordinate with utility representatives during construction in the vicinity of critical infrastructure, such as high-voltage overhead/underground transmission lines, high-pressure gas pipelines, or aqueduct canals.

3.8.4.2 Build Alternative

~~For the purposes of this analysis, the existing conditions are treated as representative of the No Build Alternative, and the analysis summarizes the relative differences between the existing conditions and the Build Alternative.~~

Utility Conflicts

Utility conflicts are expected to be low in areas where ~~rail improvements~~ project components would occur within the existing railroad ROW because utilities have already been sited to minimize conflicts with the rail corridor. Curve realignments and the second mainline, since they have the greatest likelihood of departing from the railroad ROW, have the greatest potential for conflicts with both above- and below-ground utilities.

Table 3.8-1 below illustrates the extent of potential temporary and permanent conflicts with transmission lines and pipelines associated with ~~implementation of~~ the Build Alternative components.

Natural Gas Pipelines

Construction and operation of the Build Alternative could result in potential proximity impacts to natural gas pipelines. New sidings and siding extensions, as well as the second main track, have the potential to intersect and conflict with existing pipelines adjacent to the ~~railway~~ railroad ROW.

Construction-Period Effects

Approximately 1 mile (4,629 linear feet (lf)) of pipeline could experience temporary potential proximity impacts during construction activities. The Cuesta second main track would be responsible for the majority of this potential impact. Construction-~~related~~ period impacts to natural gas pipelines could result in service disruptions and possibly damage to the pipeline from construction vehicle ingress/egress and construction equipment.

Operational Effects

Implementation of the Build Alternative could conflict with approximately 2.5 miles (13,376 lf) of natural gas pipelines. The Spence Siding extension accounts for a significant amount the potential proximity impacts to pipelines, affecting approximately 1.9 miles (10,002 ~~linear feet~~ lf) of natural gas pipelines if constructed. ~~Elements~~ Components of the Build Alternative are expected to cross existing natural gas pipelines on a total of 6 occasions throughout the alignment, 3 of which would occur along the King City Siding extension improvement. This could cause damage to the pipeline, and potentially cause some degree of service disruption.

Potentially impacted pipelines can either be protected in place so no damage during construction or subsequent operations would occur, or it ~~can~~ would be relocated if protecting in place would not be feasible, nor is relocating the improvement causing the conflict. ~~Prior to implementing specific improvements detailed plans will be developed and allow more specific determination as to the location, duration, and severity of proximity impacts to natural gas pipelines.~~

Electrical Transmission Lines

Existing electrical transmission lines could be intersected during construction and operation of the Build Alternative.

Construction-Period Effects

During construction, temporary proximity impacts could occur to about 0.9 miles (4,806 lf) of electrical transmission lines. The King City Siding extension would account for the majority of potential proximity impacts, intersecting with approximately 0.8 miles (4,244 lf) of electrical transmission lines during construction activities. Resulting impacts would be minor, or result in temporary service disruptions and some degree of damage to the transmission line.

Operational Effects

Implementation of ~~elements of~~ the Build Alternative components ~~could~~ would conflict with less than 0.25 miles (906 lf) of existing transmission lines. The King City Siding extension could conflict with up to 0.1 miles (372 lf) of electrical transmission lines once operational. ~~Elements~~ Components of the Build Alternative are expected to cross transmission lines in 3 locations along the alignment.

Similar to natural gas pipelines, transmission lines can either be protected in place so no damage during construction or subsequent operations would occur, or ~~it can be~~ the lines can be relocated if neither protecting them in place, nor relocating the improvement causing the intersection would be feasible. ~~Prior to implementing specific improvements detailed plans will be developed and allow more specific determination as to the location, duration, and severity of proximity impacts to electrical transmission lines.~~

Water Transmission Lines: Construction and Operational Effects

The NWP regional raw water transmission facility delivers water from Lake Nacimiento to communities in San Luis Obispo County via a 45 mile water pipeline ranging between 12 and 36 inches in diameter.[23] This pipeline roughly tracks the

[23] Atascadero Mutual Water Company, 2014

existing railroad alignment from north of Paso Robles south to San Luis Obispo. The following ~~elements~~ components of the Build Alternative are proposed to occur in this area: Wellsona New Siding, Templeton/Henry Curve Realignments, Wellsona/Paso Robles Curve Realignments, Templeton New Siding, Henry/Santa Margarita Curve Realignment, Santa Margarita Powered Switch, and the Second Main Track. Construction and operation of the ~~aforementioned improvements~~ project components could result in potential proximity impacts to the water transmission line.

Telecommunications: Construction and Operational Effects

Fiber-optic transmission lines are in place along the Corridor, traveling directly alongside most of the existing alignment in both Monterey and San Luis Obispo counties. ~~from Paso Robles to San Luis Obispo. The following elements of the Build Alternative are proposed to occur in this section of the alignment: Templeton/Henry Curve Realignments, Henry/Santa Margarita Curve Realignment, Santa Margarita Powered Switch, and the Second Main Track.~~ Potential proximity Impacts to telecommunication transmission lines could occur during construction and operation of ~~elements of~~ the Build Alternative components because of their proximity to the existing alignment ~~and proposed improvements~~.

Utility Usage

Construction-Period Effects

Many of ~~the elements of~~ the Build Alternative components would be developed with heavy equipment, including diesel powered trucks and other machinery. Construction activities would require minimal direct usage of local utilities, ~~like~~ including electricity and water. Often construction activities provide for any required electricity using onsite generators, eliminating the need to connect to the electrical power grid. Some water would likely be required during construction as part of standard construction best practices to help control dust and other emissions. The quantity of water needed is anticipated to be relatively low, given the ~~low levels of~~ minimal earthwork, grading, and other dust creating activities that would take place. Additionally, given the likely low quantity of water needed during construction activities, water would be trucked in on an as-needed basis.

Operational Effects

Operation of ~~certain features of~~ the Build Alternative components would require some electricity, specifically new powered switches, signal upgrades, and new stations. New stations would also require some water use and wastewater service for restroom facilities. Other features, such as sidings, curve realignments, etc. would have little or no perceptible use of ~~public~~ electric and gas utilities.

The general impacts associated with the Station ~~elements~~ components of the Build Alternative have been assessed in the planning documents of the two receiving cities - Soledad and King City. The stations would be located in developed city centers, ~~so~~ requiring minimal or no utility extension ~~would be needed~~. A variety of service providers deliver water within the vicinity of the Corridor as described above in **Section 3.8.2, Affected Environment**. Given that the existing and proposed train stations are the only components of the physical improvements that would require any permanent water supply, new demand for water resources would not be significant. No potential proximity impacts to utilities were identified ~~related to~~ for the station areas.

Signal upgrades would require some electricity to operate. New signal towers may be required to operate CTC. Where CTC equipment would be located adjacent to utilities, direct connections ~~could~~ would be made; this would prove difficult through more remote areas along the Corridor.

Public Services

Construction-Period Effects

The vast majority of ~~proposed improvements~~ project components would be constructed within the existing railroad ROW or in new ROW proposed to be created (particularly curve realignments), typically avoiding existing roads. Therefore, the potential for roads to be blocked or diverted by construction period-~~related~~ temporary emergency service and/or public facility disruptions would be low. Where construction work or construction vehicles would make extensive use of existing roads, a situation likely limited to the construction of components ~~improvements~~ across such roads, temporary access disruptions could be expected similar to other types of roadway improvement work.

Operational Effects

It is unlikely that implementation of the Build Alternative would require any significant increase in public services or facilities because the ~~proposed~~ physical ~~improvements~~ components would not encourage substantial population growth. Individual rail components ~~improvements~~, such as curve realignments, the second mainline, and other trackway improvements, have no foreseeable connection or linkage to increased demand for public services. New or expanded station areas ~~could~~ would incrementally contribute to increased demand for certain public services (police response, emergency services, etc.). However, the anticipated increase in station area activity would be modest, even in the two communities where new stations are planned. Neither of the environmental documents for the Soledad or King City station area nor downtown plans indicate ~~any~~ significant effect to public services as a result of plan implementation. Anticipated increases in passenger activity at the Salinas and San Luis Obispo stations ~~are~~ would not be at such high levels that substantial public services impacts ~~could~~ would occur.

3.8.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the King City siding extension and passenger station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile "island" of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, impacts to Public Utilities and Services for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded components are located.

King City Siding Extension and Passenger Station

The Preferred Alternative reflects the City of King's revised draft station area plans, which retain the general downtown location assumed for the Build Alternative. However, in response to comments, the Preferred Alternative is more specific with respect to the parcels envisioned by the City for its future passenger station.

The King City siding extension considered as part of the Build Alternative would potentially result in permanent and temporary impacts to nearby/adjacent transmission lines based on an assumed potential impact area that encompassed the entire railroad alignment plus buffers on either side. Electric transmission lines generally parallel the outside of the existing railroad alignment. The modified siding extension included as part of the Preferred Alternative is longer than what was evaluated for the Build Alternative. The revised siding extension would continue to potentially result in permanent and temporary effects to nearby/adjacent transmission lines, but owing to its longer length, the revised siding would potentially affect more linear feet (see **Table 3.8-1** below). Assuming that the siding extension can be constructed entirely within the railroad ROW, some or all of the proximity effects to transmission lines would be avoided.

No potential pipeline conflicts would occur for the revised King City siding extension.

The analysis of the Preferred Alternative confirms that the revised proposal for the King City station would have no impacts to transmission lines or pipelines.

While operation of the Build Alternative would require some water, wastewater, and electricity, the impact would not be significant because that the existing and proposed stations would be the only components that would require any permanent supply. The same conclusion is true for the Preferred Alternative because the Preferred Alternative only slightly modifies the location of the proposed station, and the types of anticipated uses are the same as for the Build Alternative. Therefore, resulting impacts would be similar and neither adverse nor significant.

Curve Realignments and Island CTC

As described above, the four curve realignments within San Luis Obispo County and included in the Build Alternative would have no potential conflicts with electric transmission lines or pipelines. Therefore, excluding these four curve realignments from the Preferred Alternative would result in the same conclusion of no potential impacts to these utilities. However, the Templeton/Henry, Wellsona/Paso Robles, and Henry/Santa Margarita curve realignments would potentially result in impacts to water transmission lines and telecommunication lines. Because the Preferred Alternative excludes these four curve realignments, it would avoid these potential impacts to water and telecommunication facilities.

Under the Build Alternative, the potential for utility conflicts was generally considered to be low where rail components would occur within the existing railroad ROW because utilities have already been sited to minimize conflicts with the rail corridor. Although implementation of island CTC would consist of constructing new signals within the railroad ROW, potential conflicts could result.

Table 3.8-1 Potential Utility Impacts - No Build, Build, and Preferred Alternatives

Proposed Components	No Build Alternative				Build Alternative				Preferred Alternative			
	Potential Transmission Line Impacts (linear feet		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)	
	Temp	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*
Salinas Powered Switch	N/A				0	0	0	0	0	0	0	0
Upgrades to Existing Alignment Section #1	0	0	0	0	0	0	0	0	0	0	0	0
Spence Siding Extension	N/A				0	0	0	10,002	0	0	0	10,002
Upgrades to Existing Alignment Section #2	0	0	0	0	0	0	0	0	0	0	0	0
Gonzales Powered Switch	N/A				0	0	0	0	0	0	0	0
Soledad Powered Switch	N/A				0	0	0	0	0	0	0	0
Soledad New Passenger Station	N/A				0	0	0	0	0	0	0	0

Proposed Components	No Build Alternative: Potential Transmission Line Impacts (linear feet		No Build Alternative: Potential Pipeline Impacts (linear feet)		Build Alternative: Potential Transmission Line Impacts (linear feet)		Build Alternative: Potential Pipeline Impacts (linear feet)		Preferred Alternative: Potential Transmission Line Impacts (linear feet)		Preferred Alternative: Potential Pipeline Impacts (linear feet)	
	Temp	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*
Harlem/Metz Curve Realignments	N/A				0	0	0	0	0	0	0	0
Chalone Creek New Siding	N/A				0	0	0	0	0	0	0	0
Upgrades to Existing Alignment Section #3	0	0	0	0	0	0	0	0	0	0	0	0
Coburn Curve Realignments	N/A				0	0	0	0	0	0	0	0
King City Siding Extension	N/A				4,244	372	0	0	14,192	372	0	0
King City New Passenger Station	N/A				0	0	0	0	0	0	0	0
King City Powered Switch	N/A				0	0	0	0	0	0	0	0

Proposed Components	No Build Alternative				Build Alternative				Preferred Alternative			
	Potential Transmission Line Impacts (linear feet		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)	
	Temp	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*
Upgrades to Existing Alignment Section #4	0	0	0	0	0	0	0	0	0	0	0	0
MP 165 Curve Realignment	N/A				0	0	0	0	0	0	0	0
San Lucas New Siding	N/A				109	133	0	0	109	133	0	0
Upgrades to Existing Alignment Section #5	0	0	0	0	0	0	0	0	0	0	0	0
MP 172 Track Realignment	N/A				0	0	0	0	0	0	0	0
San Ardo Powered Switch	N/A				0	0	0	0	0	0	0	0
Getty/Bradley Curve Realignments	N/A				0	0	0	0	0	0	0	0

Proposed Components	No Build Alternative				Build Alternative				Preferred Alternative			
	Potential Transmission Line Impacts (linear feet		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)	
	Temp	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*
Bradley Siding Extension	N/A				0	0	0	0	0	0	0	0
Bradley Powered Switch	N/A				0	0	0	0	0	0	0	0
Upgrades to Existing Alignment Section #6	0	0	0	0	0	0	0	0	0	0	0	0
Upgrades to Existing Alignment Section #7	0	0	0	0	0	0	0	0	0	0	0	0
McKay/ Wellsona Curve Realignments	N/A				0	0	0	0	0	0	0	0
McKay East Powered Switches	N/A				0	0	0	0	0	0	0	0
Wellsona New Siding	N/A				0	0	0	0	0	0	0	0

Proposed Components	No Build Alternative				Build Alternative				Preferred Alternative			
	Potential Transmission Line Impacts (linear feet		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)	
	Temp	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*
Upgrades to Existing Alignment Section #8	0	0	0	0	0	0	0	0	0	0	0	0
Wellsona/ Paso Robles Curve Realignments	N/A				0	0	0	0	0	0	0	0
Templeton Siding	N/A				237	309	1,166	0	237	309	1,166	0
Templeton/ Henry Curve Realignments	N/A				0	0	0	0	0	0	0	0
Upgrades to Existing Alignment Section #9	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Components	No Build Alternative				Build Alternative				Preferred Alternative			
	Potential Transmission Line Impacts (linear feet		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)	
	Temp	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*
Henry/Santa Margarita Curve Realignment	N/A				0	0	0	0	0	0	0	0
Santa Margarita Powered Switch	N/A				0	0	0	0	0	0	0	0
Cuesta Second Main Track	N/A				215	91	3,463	3,374	215	91	3,463	3,374
Upgrades to Existing Alignment Section #10	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Components	No Build Alternative				Build Alternative				Preferred Alternative			
	Potential Transmission Line Impacts (linear feet		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)		Potential Transmission Line Impacts (linear feet)		Potential Pipeline Impacts (linear feet)	
	Temp	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*	*Temp*	*Perm*
Totals	0	0	0	0	4,806	906	4,629	13,376	14,754	906	4,629	13,376

Source: ICF, 2015

3.8.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

Where appropriate, mitigation strategies should consider relocating, reconstructing, or restoring affected utilities in close coordination with the utility owner. During utility relocation planning several design strategies should be considered, including consolidating numerous utilities into one single conduit corridor.

~~The following strategies have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potential utility conflicts.~~

The following measures are applicable to the Build and Preferred Alternatives and were identified to minimize, avoid or mitigation potential impacts from the proposed components. The identification and implementation of specific mitigation

measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

A-PS-1. Adapt rail components ~~improvements~~ to accommodate existing utility facilities and transmission lines.

A-PS-2. During project-level planning and design, refer to each utility owner/provider to best avoid potential impacts on existing and planned utilities through adjustments to design features.

MIN-PS-3. Where avoidance is infeasible, utility transmission lines and facilities would be relocated or protected in place throughout all phases of construction and operation, and in compliance with the involved utility owners/providers.

MIN-PS-4. Implement solar powered CTC in remote areas where utility connections would be difficult.

3.8.6 SUBSEQUENT ANALYSIS

Subsequent analysis will include more detailed information on the following public services and utilities:

- The specific locations of and potential impacts to public facilities and emergency services (such as schools, parks, fire and police stations, hospitals, and medical clinics).
- Fiber optic lines.

- Telecommunication lines.
- Storm drains.
- Wastewater and water pump stations.
- Wastewater conveyance lines.
- Water supply lines.
- Other utilities and/or pipelines likely to be crossed or conflict with the various alignment options, including liquid petroleum, crude oil, renewable energy facilities, etc.

Future project-level analysis will consider all utilities and public service providers ~~once the physical improvements are finalized~~ based on the project components.

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3.9 HAZARDOUS MATERIALS AND WASTES

The section identifies known hazardous material sites within the study area and analyzes any hazard-related impacts that could occur as a result of the No Build and action alternatives.

Chapter 5.0, Comments and Coordination, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. The City of King provided several comments regarding the City of King siding extension discussed in the Build Alternative, and one related to potential building demolition impacts (see comments A-3.44 through A-3.47). The discussion of the Preferred Alternative below addresses all of the comments provided. None of the comments result in the need for any revisions to the hazardous materials and wastes analysis.

EPA also provided one comment (A-7.4) on the transportation of hazardous materials. The specific recommendation letters cited by the commenter are targeted at rail carriers of oil products or other hazardous materials; they do not include any specific recommendations regarding the physical components of the rail system. Nothing in the recommendations provided in the comment suggests any need for any change to any of the components of the No Build, Build, or Preferred Alternatives.

3.9.1 REGULATORY REQUIREMENTS

The regulatory requirements discussion outlines the federal and state policies that are relevant to hazardous materials.

3.9.1.1 Federal

Resource Conservation and Recovery Act (RCRA)

RCRA governs the disposal of solid and hazardous waste. Congress passed RCRA in 1976 as an amendment to the Solid Waste Disposal Act of 1965. RCRA was intended to address the growing volume of municipal and industrial waste and set national goals for protecting human health and the environment from the potential hazards of waste disposal. RCRA sets forth measures to conserve energy and natural resources. RCRA Subtitle C establishes a hazardous waste program intended to regulate such wastes from their creation to their disposal – a framework sometimes called “cradle to grave.” RCRA Subtitle I sets forth an underground storage tank

(UST) program to regulate such storage of hazardous substances, including petroleum products. EPA has primary responsibility for implementing RCRA, but some states, including California and Nevada, have received authorization to implement RCRA and issue permits.

Comprehensive Environmental Response and Liability Act (CERCLA)

CERCLA, also known as Superfund, was enacted in December 1980 and amended in 1986. CERCLA provides a basis for taxing chemical and petroleum manufacturers and provides federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA sets forth requirements concerning closed and/or abandoned hazardous waste sites, determines liability of the persons responsible for releases of hazardous waste at these sites, and administers a trust fund using collected taxes to provide for cleanup when no responsible party can be identified.

Occupational Safety and Health Standards

Title 29 under the Code of Federal Regulations focuses on worker health and safety as it relates to worker exposure to hazards. The Occupational, Safety, and Health Administration (OSHA), born out of the Occupational Safety and Health Act of 1970, is the primary agency responsible for setting and enforcing standards to assure safe and healthful working conditions for working men and women and provide training, outreach, education, and assistance.

3.9.1.2 State

California Health and Safety Code

Hazardous waste management in California is regulated under the authority of the California Health and Safety Code. The Health and Safety Code ensures employment of proper technology and management practices, safe handling, treatment, recycling, and destruction of hazardous waste. The California Department of Toxic Substances Control (DTSC) carries out many related programs and measures to protect the public health and environment from potential threats of hazardous substances and wastes.

The California State Fire Marshal (CSFM) participates in the Certified Unified Program Agency (CUPA), which consolidates and coordinates activities and programs related to hazardous wastes generators and treatments, storage tanks, hazardous material releases, and hazardous material management plans required by chapter 6.11 of the California Health and Safety Code. The CSFM provides regulatory oversight, CUPA certifications, evaluations of the approved CUPAs, and training and education.[1]

According to Title 22 §66261.20 of the California Code of Regulations (CCR), waste is considered hazardous if it includes one of the following four characteristics; 1) ignitability, 2) corrosivity, 3) reactivity, and 4) toxicity. CCR Title 22, Division 4.5 contains environmental health standards for the management of hazardous waste. Title 22 requires hazardous waste is managed according to applicable regulations with regard to handling, transport, exposure requirements, and disposal requirements under a uniform hazardous waste manifest, with the specific procedures identified in Title 8 of the California Code of Regulations.

3.9.2 METHODS OF EVALUATION

Construction of one or more of the elements of the ~~Build Alternative~~ action alternatives would have varying potential to result in environmental effects to hazardous materials and wastes. The study area for hazardous materials and waste is defined as the existing railroad ROW, the temporary and permanent footprints for each of the physical components ~~improvements~~. Temporary impact areas are locations that would be needed during construction and would be restored to their original conditions post construction (i.e., staging areas, ingress/egress). Permanent impact areas include all components and associated facilities and affected resources that would not be restored back to their original conditions (e.g., new track locations, stations, etc.).

Analysis for this ~~program-level document~~ Program EIS/EIR consisted of consulting various databases to identify potentially hazardous sites that overlap with the temporary and permanent impact footprints of all potential improvements. The hazardous materials analysis included a qualitative comparison of potential impacts on humans and the natural environment based on possible exposure to hazardous materials near the study area during construction and/or operation of ~~proposed improvements~~ project components.

[1] California Office of the State Fire Marshal, 2013

The following databases were consulted:

- **Envirofact Database** – EPA: this database searches toxic chemical releases, water discharge permit compliance, hazardous waste handling processes, Superfund status, and air emission estimates for particular geographic locations.[2]
- **Envirostor Cleanup/Hazardous Waste Databases** – DTSC: EnviroStor's site database contains a list of contaminated sites, as well as lists of facilities that process or transfer toxic waste. It also contains permit type, cleanup status, and location.
- **Solid Waste Information System (SWIS) Database** - California Department of Resources Recycling and Recovery: The SWIS database contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.[3]
- **Underground Storage Tanks (UST)** - State Water Resources Control Board: An UST is defined by law as "any one or combination of tanks, including pipes connected thereto, that is used for the storage of hazardous substances and that is substantially or totally beneath the surface of the ground."[4]

3.9.3 AFFECTED ENVIRONMENT

Hazardous materials can pose a potential threat to human health or the environment if improperly stored, transferred, or disposed. Remediation of any hazardous material sites located within the study area can dramatically increase the capital cost of a project, thus understanding potentially hazardous sites early in the design process can influence future planning efforts.

Hazardous materials can be released through airborne fumes, vapors, or dust. Negative implications of hazardous materials include risks to soil or groundwater quality. In general, concentrations of hazardous materials that are higher than regulatory standards necessitate specific requirements for handling, primarily during excavation and other earth moving activities.

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[2] US EPA, 2014a

[3] CalRecycle, 2013

[4] California EPA, 2013

This ~~program-level document~~ Program EIS/EIR identifies potentially hazardous sites that are known near the existing Coast Corridor alignment and in proposed component ~~improvement~~ areas. According to the Monterey County General Plan EIR, agricultural producers are common users of hazardous materials in the county along with commercial, industrial, and institutional industries.[5] According to the San Luis Obispo County General Plan Safety Element, many hazardous materials are shipped through the county on US 101, UPRR, and other state highways; therefore, past vehicle spills or accidental releases of unknown contaminants are possible risks.[6] Additionally, mobile sources, including trucks, trains, and farm equipment are significant sources of diesel emissions. As a result, exhaust from engines on major transportation corridors includes high concentrations of particulate matter that is deposited nearby.[7] According to Caltrans, aerially deposited lead is often deposited along and near highways from past leaded fuel vehicle emissions.[8]

Furthermore, industrial, agricultural, and commercial establishments also release hazardous materials into the environment, especially where pesticides are commonly used.[9]

Several historic hazardous sites and hazardous sites were identified within the study area. Historic sites generally refer to a hazardous site that has had past enforcement actions to remediate the area. Three historic-status sites were identified near the proposed Soledad Station. Hazardous sites were also identified near the proposed King City siding, and in several portions of the existing alignment. Hazardous historic sites were identified within section #1 and section #8 of the existing alignment. These sites have had enforcement actions in place to remediate or contain identified contamination. The study area does not contain any Superfund sites or landfills.

[5] County of Monterey, 2006, p. 4.13-1

[6] County of San Luis Obispo, 1999a, p. 24

[7] County of Monterey, 2006, p. 4.1-6

[8] Caltrans, 2014

[9] County of San Luis Obispo, 1999b, pp. 101-107

3.9.4 ENVIRONMENTAL CONSEQUENCES

3.9.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing rail operations and physical components, and assumes the perpetuation of existing freight and passenger service between without any physical components ~~improvements~~ south of Salinas and San Luis Obispo. The only physical component ~~improvement~~ expected under the No Build Alternative would be the installation of PTC along the Corridor, which would provide increased safety for freight and passenger trains. PTC equipment would likely be installed within the existing railroad ROW or would modify existing signaling equipment, and train operations would continue as it currently does.

Both Monterey and San Luis Obispo Counties have identified all major transportation corridors (including railroads) as containing deposited particulate matter and lead. Therefore, it is reasonable to assume that areas immediately surrounding the railroad ROW could contain concentrations of aerially deposited lead from former lead-based fuels, as well as pesticides and herbicides to control growth near railway and roadway infrastructure. As a result, hazardous materials are likely to be present under the No Build Alternative. Installation of PTC would require excavation in the railroad ROW and may result in hazardous materials related effects. If required by law, separate environmental review of these projects as they are implemented would establish as appropriate any additional mitigation necessary beyond adherence to all applicable federal and state regulations regarding the handling and disposal of hazardous materials.

3.9.4.2 Build Alternative

Corridor-Wide Hazardous Materials and Wastes

Overall, there is potential risk to uncover hazardous materials near roadways and agricultural areas within the entire Coast Corridor study area, owing to aerially deposited lead and particulate matter deposited from vehicles as well as pesticide use. Most of the study area roughly traces US 101 and/or borders agricultural land-use types; therefore, it is reasonable to assume that there would be a potential high risk associated with physical components ~~improvements~~ across the corridor.

Generally, all of the Build Alternative components ~~improvements~~ would result in varying levels of ground disturbance during construction through excavation and other construction activities. As a result, construction activities may likely encounter contaminated soil containing pesticide or herbicide residue, aerially deposited lead, or other soil or groundwater contaminants. If physical components ~~improvements~~ require the demolition of existing facilities or structures, construction activities may likely encounter asbestos or lead-based paint materials. In turn, construction activities could potentially expose construction workers and surrounding residents to hazardous materials if the materials are not properly managed and remediated.

~~Subsequent environmental analysis would determine the level of risk and appropriate management and remediation efforts associated with each Build Alternative improvement.~~

Site-Specific Hazardous Materials and Wastes

Table 3.9-1 below summarizes the findings from records and database searches of both active- and closed-status hazardous sites along the study area. Active-status refers to recorded hazardous sites that are currently open and awaiting remediation or enforcement efforts. Closed-status refers to recorded hazardous sites that have already undergone remediation or enforcement efforts, and are considered "historic."

Potential hazardous risk ratings were not assigned to active sites within the study area. Database searches provide a broad-level understanding of hazardous sites near physical components ~~improvements~~ for planning purposes, but do not provide adequate detail to determine the severity of each site in relation to the proposed work involved or the cleanup schedule. Therefore, potential cleanup intensity could vary from site to site.

The database searches found several hazardous sites within the permanent and temporary impact areas of the physical components ~~improvements~~; however, no superfund sites or solid waste landfills were identified in the study area.

Existing Alignment Upgrades

A hazardous site on the criteria and hazardous air pollutant inventory is located within existing alignment section #1. ~~Proposed upgrades~~ Components in this area include replacement of rail ties, tracks, and potentially also ballasts. These components and areas may be covered in pesticide/herbicide residues (a potential corridor-wide hazard) and may be considered hazardous waste requiring special handling and disposal.

Passenger Stations

Three historic hazardous sites were identified near the proposed Soledad Station. These sites were classified as leaking USTs, but are no longer active because of past remediation efforts.

Siding Extensions

The database searches identified three hazardous sites within the temporary impact areas ~~associated with~~ for the proposed King City siding extension. Two sites are facilities under the Spill Prevention, Control, and Countermeasure (SPCC) rule, which includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines.[10] Another site is a cleanup program site that is still active in status. Given that the hazardous site is located within a temporary impact area, impacts would only occur over the duration of construction activities. There is the potential for the siding extension to be designed to avoid these areas, but if such areas are included, further mitigation may be required to minimize hazards to workers and people in the area.

Curve Realignments, New Powered Switches, and New Sidings

No hazardous sites were identified near any of the proposed curve realignments, new powered switches, or new sidings. However, construction of selected components ~~elements~~ of the Build Alternative may require the removal of buildings, structures, soils, and/or paving materials to accommodate new construction. In particular, one portion of the Henry/Santa Margarita curve realignment could require acquisition of agricultural and residential properties and demolition of existing buildings on site. Demolition activities may encounter lead-based paint and asbestos-containing building materials. These materials would have to be removed prior to demolition and transported to a certified disposal facility. Construction activities may also encounter contaminated soils and/or groundwater, aerially-deposited lead or particulate matter, or other previously identified hazardous materials that must be removed, disposed of, and remediated.

[10] US EPA, 2014b

Table 3.9-1 Hazardous Sites and Materials in the Coast Corridor

Build Alternative Components	Recorded "Active-Status" Hazardous Sites	Recorded "Closed-Status" Hazardous Sites	Likelihood of Encountering Corridor-Wide Hazardous Materials
Salinas Powered Switch	0	0	Moderate
Upgrades to Existing Alignment Section #1	1	0	Moderate
Spence Siding Extension	0	0	Moderate
Upgrades to Existing Alignment Section #2	0	0	Moderate
Gonzales Powered Switch	0	0	Moderate
Soledad Powered Switch	0	0	Moderate
Soledad New Passenger Station	0	3	Moderate
Harlem/Metz Curve Realignments	0	0	Moderate
Chalone Creek New Siding	0	0	Moderate
Upgrades to Existing Alignment Section #3	0	0	Moderate
Coburn Curve Realignments	0	0	Moderate
King City Siding Extension	3	0	Moderate
King City New Passenger Station	0	0	Moderate
King City Powered Switch	0	0	Moderate
Upgrades to Existing Alignment Section #4	0	0	Moderate
MP 165 Curve Realignment	0	0	Moderate

Build Alternative Components	Recorded “Active-Status” Hazardous Sites	Recorded “Closed-Status” Hazardous Sites	Likelihood of Encountering Corridor-Wide Hazardous Materials
San Lucas New Siding	0	0	Moderate
Upgrades to Existing Alignment Section #5	0	0	Moderate
MP 172 Track Realignment	0	0	Moderate
San Ardo Powered Switch	0	0	Moderate
Getty/Bradley Curve Realignments	0	0	Moderate
Bradley Siding Extension	0	0	Moderate
Bradley Powered Switch	0	0	Moderate
Upgrades to Existing Alignment Section #6	0	0	Moderate
Upgrades to Existing Alignment Section #7	0	0	Moderate
McKay/ Wellsona Curve Realignments	0	0	Moderate
McKay East Powered Switches	0	0	Moderate
Wellsona New Siding	0	0	Moderate
Upgrades to Existing Alignment Section #8	0	1	Moderate
Wellsona/Paso Robles Curve Realignments	0	0	Moderate
Templeton Siding	0	0	Moderate
Templeton/Henry Curve Realignments	0	0	Moderate
Upgrades to Existing Alignment Section #9	0	0	Moderate

Build Alternative Components	Recorded "Active-Status" Hazardous Sites	Recorded "Closed-Status" Hazardous Sites	Likelihood of Encountering Corridor-Wide Hazardous Materials
Henry/Santa Margarita Curve Realignment	0	0	Moderate
Santa Margarita Powered Switch	0	0	Moderate
Cuesta Second Main Track	0	0	Moderate
Upgrades to Existing Alignment Section #10	0	0	Moderate

Source: ICF, 2013

Note: The risk of encountering corridor-wide hazardous materials and wastes (including aerially-deposited lead and pesticide/herbicide residues) are not identified on a site-specific basis, as they do not derive from a single point source in a particular location.

3.9.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the King City siding extension and passenger station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile "island" of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects of hazardous materials and wastes for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded components are located. The discussions below assess hazardous materials and wastes effects from the modified or excluded components.

Site-Specific Hazardous Materials and Wastes

City of King Passenger Station

Under the Preferred Alternative, the City of King passenger station has been revised from the footprint that was assessed under the Build Alternative and now would occupy a smaller footprint in the same general area as in the Build Alternative. No hazardous materials sites have been recorded in the footprint of the City of King passenger station proposed under the Build Alternative, and the likelihood of encountering corridor-wide hazardous materials is moderate. Given that the revised City of King passenger station under the Preferred Alternative would occupy a smaller footprint in the same area as that proposed under the Build Alternative, the Preferred Alternative would have no new substantial hazardous materials and waste impacts compared to the Build Alternative.

Siding Extensions

Under the Preferred Alternative, the proposed City of King siding extension has been revised from what was assumed under the Build Alternative and now is proposed to extend exclusively on the north side of the existing siding. There are three hazardous sites within the temporary impact areas for the City of King siding extension. The location of the revised siding extension does not include any recorded hazardous waste sites. Therefore, the revised City of King siding extension location under the Preferred Alternative would reduce potential impacts on hazardous materials and wastes compared to the Build Alternative.

Curve Realignments

The Preferred Alternative excludes four curve realignments in San Luis Obispo County. One of the excluded curve realignments (Henry/Santa Margarita) would have required the demolition of existing buildings, resulting in hazards from lead-based paint and asbestos-containing materials. Because of this exclusion, the Preferred Alternative would have reduced impacts from lead based paint and asbestos containing material compared to the Build Alternative.

Island CTC

In the Preferred Alternative, 27 miles of island CTC would be installed between McKay and Santa Margarita (existing railway sections 6 through 9). Only one hazardous materials site was recorded in this segment of the corridor near existing alignment section 8 and has since been closed. Additionally, CTC would be installed at various locations within the existing railroad ROW and would not require extensive excavations. Implementation of the avoidance, minimization, and mitigation strategies below would help ensure that the minimal excavation required to install CTC would not result in any substantial adverse effects. Therefore, the Preferred Alternative would have no new substantial hazardous materials and waste impacts compared to the Build Alternative, and would result in reduced impacts.

3.9.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

~~The Build Alternative will be designed to minimize impacts related to hazardous materials and wastes along the Corridor. The following strategies~~ The measures listed below are applicable to the Build and Preferred Alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

MIN-HAZ-1. ~~As one or more components of the Preferred Alternative are selected for further design and potential development,~~ Detailed investigation of soils for contamination as part of an environmental site assessment (ESA), and if appropriate a Phase II ESA, for each component prior to implementation would be conducted. Where conditions warrant a Phase II ESA, such ESAs shall include the following:

- A work plan that includes the numbers and locations of proposed soil borings/monitoring wells, sampling intervals, drilling and sampling methods, analytical methods, sampling rationale, site geohydrology, field screening methods, quality control/quality assurance, and reporting methods.
- A site-specific Health and Safety Plan (HSP) signed by a Certified Industrial Hygienist.
- Necessary permits for encroachment, boring completion, and well installation.
- A traffic safety plan.
- Sampling program (fieldwork) in accordance with the work plan and HSP. Fieldwork shall be completed under the supervision of a geologist registered in the State of California, as appropriate.
- Hazardous materials testing through a certified laboratory.
- Documentation to include field procedures, boring logs/well diagrams, tables of analytical results, cross-sections, an evaluation of the levels and extent of contaminants found, and conclusions and recommendation regarding the environmental condition of the site and the need for further assessment. Recommendations may include additional assessment or handling of the contaminants found though the contaminated soil contingency plan. If the

contaminated soil contingency plan is inadequate for the contamination found, a remedial action plan shall be developed. Contaminated groundwater shall generally be handled though the NPDES/dewatering process**.**

- Disposal process including transport by a state-certified hazardous material hauler to a state-certified disposal /recycling facility licensed to accept/treat the identified waste.

Where contaminated groundwater is encountered, the project sponsor shall obtain a NPDES permit prior to the issuance of a permit to construct. The NPDES permit shall specify site-specific testing and monitoring requirements and discharge limitations.

Additionally, available agency files for moderate and high risk properties should be reviewed prior to demolition, grading, or construction. If the file review indicates a low likelihood of contaminants being present beneath or adjacent to a project feature (rail alignment, station, etc.), additional assessment/mitigation may not be recommended and the property could be reclassified as low risk.

MIN-HAZ-2. Surveys for lead-based paint and asbestos containing materials would be required prior to demolition of any buildings or structures.

MIN-HAZ-3. A Site Management Program/Contingency Plan would be required prior to construction to address known or potential hazardous material issues such as contaminated soil or groundwater, health and safety plan for construction workers and the public, and procedures to protect workers and the public if buried contaminants are encountered.

MIN-HAZ-4. Construction contractors would dispose of all hazardous or solid wastes and debris encountered or generated during construction and demolition activities in accordance with all applicable Federal regulations.

MM-HAZ-5. A Hazardous Materials Management Plan for all facilities that use, store, or dispose of hazardous materials ~~should~~ would be prepared. Facilities emitting toxic air emissions shall submit inventories and plans to the appropriate air quality management district and be subject to permitting and monitoring regulations of the district. All necessary local, state and federal permits for the installation and operation of any above or below ground chemical or fuel storage tanks prior to installing such tanks would be obtained.

3.9.6 SUBSEQUENT ANALYSIS

Prior to implementing specific elements of the ~~Build~~ Preferred Alternative, component-specific hazardous materials evaluations ~~should~~ would be conducted. These evaluations will be used to determine if additional mitigations strategies from those discussed above in **Subsection 3.9.5** are applicable.

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3.10 CULTURAL AND PALEONTOLOGICAL RESOURCES

Cultural resources include prehistoric archaeological sites, historic archaeological sites, traditional cultural properties, and historic structures. Paleontological resources refer to resources in the fossil record, such as prehistoric remains and other evidence of past life. This section discusses the applicable federal and state laws and regulations that protect cultural and paleontological resources, including Section 106 of the National Historic Preservation Act and California Public Resources Code Sections 5024.1 and 21084.1, and assesses the potential effects of the No Build and ~~Build Alternative~~ action alternatives on these resources.

Chapter 5.0, Comments and Coordination, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. The City of King provided several comments on Build Alternative components discussed in the cultural and paleontological resources section (see comments A-3.20, A-3.48 through A-3.51). None of the City of King's comments resulted in text revisions to the cultural and paleontological background information or analysis of the Build Alternative, but several of the comments are pertinent to the analysis of the Preferred Alternative (see **Section 3.10.4.3** below).

3.10.1 REGULATORY REQUIREMENTS

3.10.1.1 Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) (16 U.S.C. 470 et seq.) established a national program to preserve the country's historical and cultural resources. Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties and provide the President's Advisory Council on Historic Preservation (ACHP) opportunity to.[1] Guidelines for implementing the Section 106 process are provided in 36 CFR Part 800. Per 36 CFR 800.4, significant

[1] Undertaking is defined as "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval." 36 CFR 800.16 (y).

cultural resources are those that are eligible for listing in the National Register of Historic Places (NRHP). The NRHP eligibility criteria (36 CFR 60.4) state that the quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, association, and that meet one or more of the following criteria:

a) The resource is associated with events that have made a significant contribution to the broad patterns of our history.
b) The resource is associated with the lives of persons significant in our past.
c) The resource embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction.
c) The resource has yielded, or may be likely to yield, information important to prehistory or history.

Impacts to NRHP-eligible resources are considered adverse when “an undertaking may alter directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association” (36 CFR 800.5[1]). Examples of adverse effects include physical destruction or damage to all or part of the property; alteration that is not consistent with the Secretary of the Interior’s standards for the treatment of historic properties; removal of the property from its historic location; change in the type of use or of the physical characteristics of the setting; introduction of visual, atmospheric, or audible elements that diminish the integrity of the property’s significant features; and neglect resulting in deterioration (36 CFR 800.5[2]).

Historic properties include prehistoric archaeological sites. Archaeological sites are usually adversely affected only by physical destruction or damage, whereas all of the examples above can apply to historic buildings and structures.

~~Federal~~ Antiquities Act of 1906 (16 USC 431 et seq)

This act established national monuments and reservation of lands including historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. ~~16 USC 433~~ The Antiquities Act prohibits appropriation, excavation, injury, or destruction of any historic or prehistoric ruin or monument, or any object of antiquity on federal land.

3.10.1.2 State

California Register of Historic Resources

The California Register program encourages public recognition and protection of cultural and historic resources. Under CEQA, significant cultural resources are called *historical resources* whether they are of historic or prehistoric age.

Generally, a resource should be considered by a lead agency to be historically significant if the resource has integrity and meets one of the following criteria for CRHR listing (CEQA Guidelines Section 15064.5 [a][3]).

- The resource is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage and/or with the lives of persons important in California's past.
- The resource embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
- The resource has yielded, or may be likely to yield, information important in prehistory or history.

CRHR is similar to the NRHP in that any resource determined eligible for the NRHP is also automatically eligible for the CRHR. However, the treatment of historical resources under CEQA and in the CRHR is more inclusive in that resources listed in local historical registers may be included.

Projects that would impact CRHR-listed and –eligible resources and resources listed in local historical registers may result in a significant effect on the environment if the project would cause a substantial adverse change in the significance of a historical resource (PRC Section 21084.1). Substantial adverse change in the significance of a historical resource refers to "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that [its] significance…would be materially impaired (CEQA Guidelines Section 15064.5[b][1]). Material impairment means demolition of the resource, or alteration of the physical characteristics that make the resource eligible for listing such that it would no longer be eligible for the CRHR or a local historical register (CEQA Guidelines Section 15064.5[b][2]).

California Environmental Quality Act

~~California Environmental Quality Act~~ CEQA (PRC Section 21000 et seq.) requires public agencies and private interests to identify the potential adverse impacts and/or environmental consequences of their proposed project(s) to any object or site that is historically or archaeologically significant or significant in the cultural or scientific annals of California (PRC Section 5020.1). Under CEQA, archaeological resources are presumed non-unique unless they meet the definition of "Unique archaeological resources" (PRC Section 21083.2[g]). Under CEQA, an impact on a non-unique archaeological resource is not considered a significant environmental impact. An EIR need not discuss non-unique archaeological resources.

CEQA Guidelines

CEQA Guidelines (Section 15064.5[a][3]) provides that a lead agency may find that "any object, building, structure, site, area, place, record, or manuscript" is historically significant or significant in the "cultural annals of California." The section also provides that a resource may be considered historically significant if it has yielded or may be likely to yield information important in prehistory. Paleontological resources fall within this broad category and are included in the CEQA checklist under Cultural Resources.

Assembly Bill (AB) 52

On September 15, 2014, the Governor of California approved Assembly Bill (AB) 52.[2] The legislation specifies that a project with an effect that may cause a substantial adverse change in significance to a tribal cultural resource is a project that may have a significant effect on the environment. The bill also outlines the consultation process between the lead agency and the California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.

AB 52 is applicable to projects with a notice of preparation (NOP) date on or after July 1, 2015. While the NOP date for the Coast Corridor Program Draft EIS/EIR was August 17, 2012 (well before the AB 52 deadline) the document does consider Native American resources at a level of detail that is appropriate for a first tier, program-level review. As discussed in **Section 3.10.6, Subsequent Analysis,** if any of the proposed components are carried forward, further consultation with NAHC and Native American tribal groups, in compliance with AB 52, could be required during future project-level review to the extent that tribes inform relevant local lead agencies (SLOCOG, TAMC, and/or Caltrans DOR) of their interest in receiving notice of environmental projects pending with those agencies.

[2] California State Assembly, 2014.

3.10.2 METHODS OF EVALUATION

Study Area Defined

The study area continues to include all permanent and temporary impact areas associated with the elements of the ~~Build Alternative~~ action alternatives, including all proposed stations, realignments, sidings, track/signal upgrades, and the new second mainline. FRA has determined that the programmatic decisions made here do not constitute an undertaking with potential to cause adverse effects to historic properties under Section 106. As a result, FRA did not complete the full Section 106 process but did take the appropriate steps to identify resources potentially eligible for protection under Section 106 and categorize the potential impacts to those resources at a programmatic level of detail. FRA will complete the Section 106 process at Tier 2 as necessary for any future FRA undertakings. An area of potential effect (APE) was not established, given the programmatic and contingent nature of the physical components ~~proposed improvements~~ in this environmental document. However, in ~~FRA's~~ consultation with the California State Historic Preservation Officer (SHPO), FRA determined that permanent and temporary impact footprints were ~~considered to be~~ an appropriate area to assess potential direct and indirect impacts on cultural resources. The permanent and temporary impact footprints are defined as follows:

- Permanent: areas where affected resources would not be restored back to their original conditions.
- Temporary: areas that would be disturbed during construction and then returned to their original conditions post construction.

Proposed permanent and temporary impact areas differ for each type of component ~~improvement~~, as listed below.

- Siding Extensions/New Sidings:
  - Permanent: Existing railroad right-of-way (typically 50 feet)
  - Temporary: 50 feet on either side of existing right-of-way
- Curve Realignments:
  - Permanent: 100 foot wide corridor
  - Temporary: 200 feet on either side of 100 foot corridor for a total width of 500 feet
- Second Mainline
  - Permanent: Existing railroad right-of-way
  - Temporary: 100 feet on either side of existing UP right-of-way
- Stations

- Soledad Station: 1.9 Acres – permanent impact area is based on conceptual station plans from the Soledad Downtown Specific Plan (2012).
- King City Station: 3.4 Acres – permanent impact area is based on conceptual station plans from the King City First Street Corridor Master Plan (2013).

The cultural analysis also evaluates the potential sensitivity of portions of the existing alignment where only signaling, track maintenance, and other corridor-wide components ~~improvements~~ would take place. Existing alignment sections #1 through #6 are within Monterey County and existing alignment sections #7 through #10 are within San Luis Obispo County.

As further outlined in **Chapter 3.0, Affected Environment, Environmental Consequences, and Mitigation Strategies**, direct and indirect effects are assessed with regard to cultural resources. Direct effects would occur if archaeological or historic resources, such as building or structures, are altered or destroyed as a result of physical components ~~potential improvements~~. Indirect effects would occur if visual, noise, or vibration effects from physical components ~~potential improvements~~ diminished the integrity of the cultural resource.

As discussed, FRA and SLOCOG consulted with the SHPO in determining these parameters on June 27, 2013 and followed with a letter on September 9, 2013. Following consultation with FRA, SHPO found that the above parameters were "reasonable" for the purposes of this programmatic analysis.

Cultural Resource Categories

Various types of cultural resources exist within the study area and occur within all land use designations of Monterey County and San Luis Obispo County. Each type of cultural resource differs in sensitivity and importance. The different cultural resources categories are defined below.

Archaeological Resources

Archaeology is the study of prehistoric human activities and cultures.

- **Prehistoric Archaeological Sites**: In California, prehistoric archaeological sites are places where one can find evidence of human activities prior to ~~1789~~ 1769 AD, which is generally accepted as the earliest date of permanent European ~~arrival and exploration leading to permanent~~ settlement in what is now the State of California. Prehistoric sites typically contain human burial or subsistence remains and artifacts or tools made by people. Objects that may be found on a prehistoric archaeological site include tools, beads, ornaments, ceremonial items, rock art, and inedible remains of food sources.

- **Historic Archaeological Sites**: Historic archaeological sites are places where evidence exists of human activities between ~~1789~~ 1769 AD and 50 years ago. Many historic archaeological sites are places where houses formerly existed and contain ceramic, metal, glass refuse resulting from the transport, preparation and structural remnants, such as windowpane glass, lumber, and nails. Historical archaeological sites can also be nonresidential, resulting from ranching, farming, industrial, and other activities.
- **Traditional Cultural Properties**: Traditional cultural properties are specific locations that are largely associated with the history of the community. These places are typically associated with the cultural practices or beliefs of a living community, such as locations where ceremonial activities were performed.

Historic Resources

Historic resources are associated with the recent past.

- **Historic Structures**: Historic structures are facilities that served residential, commercial, industrial, agricultural, transportation, and other purposes during historic periods (more than 50 years ago). Historic structures generally consist of houses, outbuildings, stores, offices, factories, barns, dams, bridges, roads, and other facilities.

Paleontological Resources

Paleontology is the study of plant and animal fossils.

- **Paleontological Resources**: Paleontological resources are fossilized remains of plants and animals. Generally, paleontological resources are those that are more than 10,000 years old and are typically found below ground surface in sedimentary rock units.

Record Search and Analysis

Archaeological and Historical Resources

Qualified archaeologists submitted prehistoric and historic properties record search requests to the California Historical Resources Information System (CHRIS) in July 2013. The Northwest Information Center (NWIC) conducted a records search for the portion of the study area located within Monterey County. Likewise, the Central California Information Center (CCIC) conducted a records search for the portion of the study area located within San Luis Obispo County. The NWIC and CCIC conducted records searches of all previously recorded sites and studies within a quarter mile of the study area. The search included current listings for the National

Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), Historical Resources Inventory (HRI), and historical maps. The records search identified the number of archaeological and historical sites within the study area along with their general location. The number of archaeological sites within the study area ~~in the vicinity of each proposed element of the Build Alternative~~ action alternatives was tabulated and used as an indicator of potential sensitivity; however given the programmatic nature of the environmental document, a finding of effect under Section 106 was not determined at this time. As discussed below (**Subsection ~~4.4.5~~ 3.10.6, Subsequent Analysis)**, if one or more ~~elements of the Build Alternative are proposed to be~~ of the physical components are carried out ~~at a later time~~, an APE would be established and finding of effect made during subsequent environmental review. Likewise, determination of NRHP or CRHR eligibility of individual sites was not conducted for this evaluation. Sites evaluated here are considered "potentially eligible" resources. However, this analysis does disclose previous determinations of eligibility.

As required under CEQA Guidelines § 15064.5, a list of potentially historic structures deemed locally eligible was assembled using maps and property lists from cities within the study area. Locally eligible resources do not require any further consideration under Section 106. However, those resources are assessed in this analysis for the purposes of adequate CEQA review. Resources identified in this reconnaissance include railroad bridges and other buildings and structures in the study area. The number of potential eligible historic properties within the study area for each proposed component ~~improvement~~ was tabulated and used as an indicator of potential sensitivity.

FRA and SLOCOG~~, with~~ contacted the Native American Heritage Commission (NAHC)~~, initiated~~ in July 2013 to initiate a Sacred Lands File Search. The record search indicated the potential presence of Native American traditional cultural places in the project vicinity and also identified 25 Tribal representatives with a potential interest in the involved lands. FRA subsequently contacted the identified Native American Tribal governments through letter correspondence and ~~subsequent~~ follow-up telephone calls.[3]

[3] Valenstein, David. Chief, Environment & Systems Planning Division. Federal Railroad Administration. September 2013 – letter communications.

Paleontological Resources

Significant paleontological resources are fossils or assemblages of fossils that are unique, rare, unusual, or uncommon. According to Caltrans Standard Environmental Reference (SER), scientifically significant paleontological resources are identified sites or geologic deposits containing individual fossils or assemblages of fossils that are unique or unusual, diagnostically, or stratigraphically important, and add to the existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally. These resources can generally be anticipated based on the stratigraphic layer of the earth's surface, as some layers are more prone to contain paleontological resources. As a result, this program-level analysis determines paleontological sensitivity based on the underlying geological unit. Likewise, paleontological sensitivity is predicated on the research potential of fossils suspected to occur in that unit. Caltrans uses the scale below to rate paleontological sensitivity. Since many of Caltrans' transportation projects include improvements to corridors spanning many miles, this Program EIS/EIR uses the Caltrans scale as an appropriate means to assess the paleontological sensitivity of the Coast Corridor.

- **High Potential -** Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive. High sensitivity includes the potential for containing: 1) abundant vertebrate fossils; 2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; 3) areas that may contain datable organic remains older than recent, including Neotoma (sp.) middens; or 4) areas that may contain unique new vertebrate deposits, traces, and/or trackways.
- **Low Potential** - This category includes sedimentary rock units that: 1) are potentially fossiliferous, but have not yielded significant fossils in the past; 2) have not yet yielded fossils, but possess a potential for containing fossil remains; or 3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not

placed in this category because vertebrates are generally rare and found in more localized stratum.

No Potential - Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. The underlying geologic units along the existing Coast Corridor were evaluated based on the criteria above and a paleontological sensitivity rating was applied. The paleontological sensitivities are rated according to **Table 3.10-1** below.

Table 3.10-1 Geologic Unit and Paleontological Sensitivity

Geologic Unit	Geologic Age	Paleontological Sensitivity
Quaternary Alluvium and Marine Deposits (Q)	Pliocene to Holocene	Low
Franciscan Complex (KJf)	Jurassic to Cretaceous	High
Plio-Pleistocene and Pliocene (QPc)	Miocene to Pleistocene	Low
Miocene Marine Rocks (M)	Oligocene to Pliocene	Low
Upper Cretaceous Marine Rocks (Ku)	Late Cretaceous	High
Ultramafic Rocks (um)	Middle to Late Jurassic	High
Mesozoic Volcanic Rocks (Mzv)	Jurassic to Cretaceous	High
Tertiary Volcanic Flow Rocks (Tv)	Tertiary	Low

Source: University of California Museum of Paleontology, 2013

3.10.3 AFFECTED ENVIRONMENT

3.10.3.1 Study Area Context and Resources

Archaeological Resources

According to the Monterey County General Plan EIR, signs of first human life in Monterey County date back to 10,000 to 12,000 years ago. First inhabitants were nomadic hunters that followed game herds for subsistence. A cultural shift occurred around 8,000 to 7,500 B.C. when humans began forming settlements and spreading out to maximize resources. Between 2,500 and 1,600 years ago, another shift in settlement patterns occurred as a result of migration of different people from the north – emanating from a larger migration from the east. Villages became larger during this time period as a result of new foraging techniques. Over time, villages organized collection, processing, and distribution of resources and developed systems to collect and transport resources to population centers. Sea level rise and climate change spurred the population to move further inland for shelter and resources. Around 1500 A.D., the climate shifted into a colder period known as the “Little Ice Age”, changing collection behavior to more specialized and migratory. The indigenous people maintained this type of subsistence behavior until the Spanish explorers arrived.

Monterey Bay became the focus of several Spanish expeditions, ~~thus~~ influencing the culture and history of the region. Monterey County played a role in the Mexican-American War and later the California Gold Rush, influencing economic growth and development in the area. Grain production quickly became Monterey County’s main economic activity and spurred the development of transportation to export grain products. In 1872, the Southern Pacific Railroad extended its railroad line south to encompass the agricultural areas in the Salinas Valley and allowed farmers to increase acreages available for cultivation. In turn, the lower Salinas Valley transformed into agricultural land, which shaped the economic structure that largely remains in place today.

The Ohlone Native American Tribe encompassed much the inland valleys, relying on hunting and gathering. The Ohlone had permanent villages and seasonal camps, but their culture was dramatically changed by Spanish influence. The Monterey County General Plan EIR categorized areas of archaeological sensitivity. Areas that surround river courses and other large drainages are considered sensitive, since human occupation commonly occurred along water sources. Several burial sites have been uncovered on the terraces of the Salinas River, showing the importance of streams and rivers in human occupation.

Prehistoric archaeological sites within the Coast Corridor study area, within Monterey County, include mostly lithic scatters. “Lithic scatter” describes the surface scatter of cultural artifacts and leftover debris after shaping raw stone into usable tools. Lithic scatters are commonly found on most archaeological sites. According to the Monterey County General Plan EIR, areas between Salinas and San Lucas within the study area have generally low sensitivity for archaeological resource occurrence in Monterey County as shown on **Figure 3.10-1**. Areas south of San Lucas, adjacent to the Salinas River and US 101 have varying degrees of moderate to high sensitivity.

Early settlements in San Luis Obispo County included both large villages and smaller camps. Artifacts found from early settlements include shell beads and exotic trade items, alluding to increased cultural expansion and complexity. Between 1,000 and 1,800 A.D., recovered evidence supports possibilities of larger populations settling near the coast to facilitate ocean access. Marine fishing and trading were the main economic pursuits. Typical villages included such features as sweathouses, sacred council areas, dance areas, and cemeteries. Land animals were hunted with bow and arrow as a main food source. Acorns were another valuable food source.

Because acorns were easily stored, they are believed to have reduced the need for hunting and fishing, and thus played a role in increasing sedentism and social complexity.

The Chumash, a Native American Tribe, occupied coastal and inland areas when the Mission Period began in 1769. The Chumash society was organized around lineages and distinct social stratification. Chumash technology highlights the exploitation of marine resources, as found from toolkits with fishhooks, angled bone hooks, nets, traps, harpoons, and other items.

The Salinan Tribe inhabited the northern portion of the county and followed a hunting and gathering lifestyle ~~as well~~, based on fishing. Eventually European contact with the Chumash and the Salinan people resulted in religious conversion and population increase. Spanish colonization also strongly influenced agricultural development in San Luis Obispo County.

Prehistoric archaeological sites within the San Luis Obispo County portion of the Coast Corridor study area include mostly lithic scatters, stone artifacts, and burial sites. A temporary village and the remains of Estrada Adobe have also been recorded within the study area.

Historic archaeological sites within the San Luis Obispo County portion of the Coast Corridor study area include the Mission San Miguel Arcangel. The Mission includes building remains, original wall paintings and decorations completed by Native Americans, and porcelain artifacts. The Mission is also listed as a California Historical Landmark. Additionally, the Rios-Caledonia Adobe is located near the Mission San Miguel Arcangel. This building reflects California's Mexican-era architecture and is listed as a NRHP and is a California Historical Landmark.

Historical Resources

More than 200 Federal, State, and County listed historic sites or eligible historic resources exist within Monterey County. Major regional county historic resources include Mission Nuestra Señora de la Soledad and the Old Mission School near Soledad, Richardson Adobe near Soledad, the Site of the Battle of Natividad near Salinas, the Boronda Adobe in Boronda, the Glass House in Pajaro, and Mission San Antonio de Padua near Jolon.

Historic structures existing within the Coast Corridor's Monterey County study area include portions of the Southern Pacific Railroad near King City, and the Bradley Road Bridge over the Salinas River, the latter previously determined eligible for the

NRHP.[4] Several structures associated with the Holly Sugar Beet railroad freight site and portions of US 101 were previously recorded and determined to not be eligible for NHRP listing. Several culverts were also previously recorded, but have not been evaluated as potential historic resources. The El Camino Real trail is also a historic resource that roughly traces parallel to US 101 and is located within portions of the study area. This trail is a historic roadway that connected a series of established Spanish and Mexican outposts. As a result, a series of missions were built in the footpath of this roadway.[5] In Monterey County, the study area has about 5 potentially eligible historic residential, commercial, and industrial properties, as shown in **Table 3.10-2**.

Existing historic structures within the San Luis Obispo County portion of the study area include several historic-era railroad bridges ~~as well Union Pacific~~ UPRR and Southern Pacific ~~Railroad~~ bridges. A bridge/culvert on Cuesta Forest Road and the Highway 41 overpass of the South Pacific Railroad were recorded, but not evaluated for eligibility. Additionally, several locally eligible historic cottage residences and carpenter gothic residences are also present within the study area. Similar to Monterey County, the El Camino Real trail is also a historic resource that roughly traces parallel to US 101 and the study area in San Luis Obispo County. **Table 3.10-2** ~~shows~~ lists potentially eligible historic residential, commercial, and industrial properties, as indicated by local standards, found within the Study Area.

Paleontological Resources

Paleontological resources in Monterey County are primarily from marine life forms that deposited from rising and falling sea levels. As a result, terrestrial fossils are less likely. Monterey County fossils are mainly microorganisms such as foraminifers or diatoms, assemblages of mollusks, and barnacles from the Cretaceous age (138 to 96 million years old) to the Pleistocene age (1.6 million to 11,000 years old). Out of 700 known fossil locations within Monterey County, 12 have been identified to have scientific value, with rare and unique characteristics.

The most prevalent underlying geologic unit within the Coast Corridor study area and within Monterey County is Quaternary Alluvium and marine deposits, which is considered to have low paleontological resources sensitivity. Although the exact location of these sites is not disclosed to avoid potential degradation, the general

[4] The Bradley bridge is also a section 4(f) resource and is discussed in Chapter 4.0, Section 4(f)/6(f) Evaluation.

[5] California Highways, 2014

locations in Monterey County are shown in the 2006 General Plan Update. The General Plan showed a negligible amount of such resources along the study area.

Similarly to Monterey County, paleontological resources in San Luis Obispo County are primarily made up of invertebrate fossils in marine rocks. Coastal Franciscan formation, a geologic unit within the southern portions of the study area, includes trace fossils (preserved tracks or other signs of animal activity), mollusks, and marine reptiles. These are typically found where bedrock is exposed from erosion on the surface, such as along cliffs along the coast. Scattered vertebrate remains have been identified within the county in deposits from the Pleistocene era. The

study area has low sensitivity for containing paleontological resources with the exception of a few areas with high paleontological sensitivity in the southernmost portions of the study area. ~~These areas are discussed in more detail below.~~

3.10.4 ENVIRONMENTAL CONSEQUENCES

3.10.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing operations and physical components, and assumes the ~~perpetuation~~ continuation of existing freight and passenger service. The only ~~proposed~~ physical component ~~improvement~~ would be the implementation of PTC along the corridor, which would possibly include new and/or modified signaling and communications equipment. Installation of this equipment would most likely occur within the railroad ROW, which generally does not include any historic resources and is an unlikely location for unrecorded archaeological resources given the disturbed nature of these ~~such~~ areas. To the extent PTC installation ~~may~~ requires any federal action or approval, further consultation under Section 106 may be necessary.

3.10.4.2 Build Alternative

Direct Impacts

Construction of one or more of the ~~proposed~~ physical components ~~improvements~~ comprising the Build Alternative could potentially affect archaeological, historic, and paleontological resources. The severity of the impact to these resources depends on the condition of the resource and its location with respect to the ~~proposed~~ physical component ~~improvement~~. For the purposes of this programmatic evaluation, **Table 3.10-2** below summarizes the number of known archaeological sites, number of recorded historic structures, and paleontological sensitivity for the various areas comprising the study area.

As previously noted in **Subsection 3.10.2, Methods of Evaluation**, this evaluation does not make any new determinations of eligibility of any potential archaeological or historic resource. Where such determinations were previously made, this analysis discloses available information. As one or more components ~~of the Build Alternative~~ move forward to further design and implementation, component-specific evaluation for cultural resources effects will be ~~required and~~ conducted. Additional evaluation ~~would~~ will include further identification and analysis of resources present, their condition and eligibility, and the potential direct and indirect effects of ~~proposed~~ physical components ~~improvements~~ to adversely affect the ~~resources' eligibility status~~ resource.

Archaeological Resources

In Monterey County, as indicated in **Table 3.10-2**, four archaeological sites were recorded, within existing alignment section #6, but the eligibility status has not been evaluated or determined. Cultural resources at these four archaeological sites ~~entail~~ are the mostly highly disturbed prehistoric lithic scatter along the Salinas River floodplain. Lithic scatters in these areas include pieces of eroded cryptocrystalline debitage,[6] core tools, chert flakes, and one fragment of burned bone. ~~Proposed improvements under~~ The Build Alternative components in this area include upgrades to the existing tracks. Improvements to the existing alignment would occur within the railroad ROW and would be limited to already disturbed areas. Therefore, the Build Alternative would be unlikely to affect recorded archaeological sites within section #6 of the existing alignment in Monterey County.

Three archaeological sites were recorded within the Getty/Bradley curve realignment areas. ~~but the eligibility status has not been evaluated or determined.~~ These recorded sites are also prehistoric lithic scatters and chert flakes along the Salinas River. Proposed curve realignments would have a larger potential impact because the footprint of the required work would require conversion of land outside the existing railroad ROW. Therefore, construction of this curve realignment would have a high potential to disturb and/or uncover ~~known/unknown~~ archaeological sites.

In San Luis Obispo County, archaeological sites were recorded in various locations within the existing alignment and in ~~proposed~~ physical improvement areas. There are a total of 12 archaeological sites located within existing alignments section #7,

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[6] Cryptocrystalline is a type of silicate that likely contains lithic material and cultural debitage (debris from quarrying and tool making).

section #8, section #9, and section #10 in San Luis Obispo County. The cultural resources found at these sites include mostly lithic scatters and chipped stone debris, similar to archaeological sites recorded in Monterey County. An isolated burial site was recorded as well as a temporary village (recorded three times between 1971 and 1999). Both of these sites were recorded, but eligibility for the NRHP and CRHR was not determined. In section #10 of the existing alignment, two concrete foundations were recorded and evaluated in 2006, but deemed not eligible for the NRHP and CRHR. Most notably, the Mission San Miguel Arcangel is located within the study area in the northern portions of San Luis Obispo County and is considered a California Historical Landmark, but eligibility for the NRHP and CRHR was not determined. The Rios-Caledonia Adobe is located near the Mission San Miguel Arcangel and is listed ~~as a~~ on the NRHP and is also a California Historical Landmark. No physical components ~~improvements~~ outside of the railroad ROW would occur in these areas ~~as it~~ because the Build Alternative only entails system-wide components ~~improvements~~ ~~related to~~ including track tie and ballast upgrades. As a result, these archaeological resources would not likely be affected. However, any ~~proposed~~ physical component ~~improvement~~ has potential to uncover unknown cultural resources. Therefore, ~~if any of the proposed improvements are carried forward,~~ appropriate measures consistent with Section 106 may be required to avoid, minimize, or mitigate potential adverse effects to such resources.

An archaeological site was recorded within the impact area of both the new Wellsona siding and the Templeton siding extension. The Wellsona siding site was recorded as a lithic scatter and the Templeton siding was recorded as bedrock mortar.[7] These sites were recorded but their eligibility was not determined. Both of these proposed sidings ~~improvements~~ would occur within the existing railroad ROW and would be limited to already disturbed areas. Therefore, the Build Alternative would not likely affect recorded archaeological sites within these sidings' permanent and temporary impact areas. ~~However,~~ In addition, any ~~proposed~~ physical component ~~improvement~~ has potential to uncover unknown cultural resources.~~, as discussed above.~~

Two archaeological sites were recorded, but not evaluated within the Henry/Santa Margarita curve realignment permanent/temporary impact area. Both of these sites include lithic scatters. Four sites were recorded within the proposed Templeton/Henry curve realignment permanent/temporary impact area. Only one of the four sites is in the permanent impact area for the Templeton/Henry curve

[7] Bedrock mortars are rock outcrops that were used for food grinding.

realignment and includes the remains of the Estrada Adobe in Atascadero, which is monitored by the Atascadero Land Preservation Society (ALPS).[8] ~~In 1845, Governor Pio Pico gave Pedro Estrada 40,000 acres through a land grant, which is now modern day Atascadero. The Estrada Adobe was Pedro Estrada's home and has local significance.~~[9] The other sites located within the temporary impact area ~~entail~~ include lithic scatters. Proposed curve realignments would require conversion of land outside the existing railroad ROW and have elevated potential to disturb known and/or uncover unknown archaeological sites. If one or both of these curve realignments are carried forward for construction, ~~contingent on project design,~~ subsequent analysis would include a formal evaluation of impacts.

Historical Resources

There are several historic structures from the more recent built environment that exist within the existing Coast Corridor alignment and within the established temporary and permanent impact areas for the proposed physical components ~~improvements~~. These historical sites include buildings, bridges, and other structures of local significance. Most notably is the Bradley Bridge over the Salinas River, which is the only historical resource within the entire Coast Corridor study area that was previously determined eligible for the NRHP.[10] ~~That said~~ The Bradley Bridge is located within existing alignment section #6 and physical components ~~improvements~~ on the bridge would consist of overall track upgrades, which are proposed for the entirety of the Salinas to San Luis Obispo rail corridor. Proposed corridor-wide track upgrades include replacement of existing rail with continuous welded rail (CWR), track structure realignment, track resurfacing, tie replacement, replacing or upgrading ballasting, rehabilitation of existing sidings, and replacement of existing turnouts. These components ~~improvements~~ would be highly unlikely to alter the bridge's eligibility insofar as the components ~~improvements~~ would be

[8] Allen, 2013

[9] ~~Atascadero Chamber of Commerce, 2014~~

[10] Mission San Miguel Arcangel, a National Historic Landmark and resource listed on the National Register since 1971, is outside the Coast Corridor study area. The existing railroad alignment is approximately 100 feet east of the Mission, across Mission Street. Through this portion of the Coast Corridor, corridor-wide track upgrades and are contemplated for the Build Alternative; the Preferred Alternative also incorporates island CTC. These upgrades would not have the potential to substantially alter the visual character of the railroad and in turn, negligible potential to indirectly affect the eligibility of the Mission as an historic architectural resource. Accordingly, the Mission was excluded from the architectural APE at this program level of analysis.

consistent with the bridge's use to serve an existing railroad. If track upgrades are selected for this portion of the corridor, an appropriate level of review will be needed to formally determine the potential for ~~such improvements~~ the Build Alternative components to affect the bridge's previously established eligibility.

Additionally, a portion of the Southern Pacific Railroad was identified as a potentially historic resource within Existing Alignment #3 of the Build Alternative, but was not evaluated. Physical components in this portion of the track would consist of overall track upgrades. These components would be unlikely to alter potential historical values or eligibility as the components would be consistent with the existing railroad use.

There are nine potentially historic structures of local importance built between 1920 and 1940 located within the permanent/temporary impact area of the proposed Soledad Passenger Station and one structure within the permanent/temporary impact area of the proposed King City Passenger Station. Both Soledad and King City have developed conceptual plans for proposed station sites in their respective downtowns (see the *Soledad Downtown Specific Plan* (2012) and *King City First Street Corridor Master Plan* (2013)). As described in **Chapter 2.0, Alternatives**, since publication of the Draft Program EIS/EIR the City of King has adopted draft revised plans for the Multi-Modal Transportation Center – Conceptual Design ((MMTC) (2014). These updates are described and analyzed in **Section 3.10.4.2** under the Preferred Alternative.

The structure near the proposed King City Station is located on Pearl Street and does not appear to be within the Build Alternative's station footprint or within the city's historic corridor.[11] All of the structures near the Soledad Station have commercial purposes on Front Street and are located across the street from the proposed station. They would not likely be affected or acquired by the new station. Cesar Chavez Park is located on Front Street, between Main Street and Soledad Street, potentially within the proposed station's footprint. If the King City and/or Soledad stations are carried forward, subsequent project-level analysis of the proposed station footprint may be required to determine if the station features would affect any of the relevant historic properties. At that time, appropriate avoidance, minimization, and mitigation measures may be required to address potential adverse effects to such resources, as discussed in **Subsection, 3.10.6, Subsequent Analysis.**

[11] City of King, 2011, p. 7

In Monterey County, there are 12 potentially historic structures of local importance from the more recent built environment that exist within the existing Coast Corridor alignment and within the established temporary and permanent impact areas for the proposed Harlem/Metz, MP 165, MP 172, and Getty/Bradley curve realignments. Curve realignments would require work outside the railroad ROW and would have more potential to disturb existing structures than other ~~proposed~~ physical components ~~improvements~~ limited to the railroad ROW. If any of the curve realignments are carried forward, detailed design work will be necessary to identify final footprint areas ~~Such work would help~~ to determine if the footprints overlap with one or more historic properties. ~~As appropriate, subsequent project level analysis of the proposed Harlem/Metz, MP 165, MP 172, and Getty/Bradley curve realignments may be required to determine if one or more of them would affect any of the relevant historic properties.~~

In San Luis Obispo County, several historic-era bridges and residences exist within the temporary and permanent impact areas of the existing Coast Corridor alignment sections #8, section #9, and section #10. Physical components ~~improvements~~ to the existing alignment would occur within the railroad ROW and would be limited to already disturbed areas. Therefore, the Build Alternative would not affect recorded historical sites within the existing alignment in San Luis Obispo County.

In the temporary impact area for the second mainline, two historic resources have been recorded without eligibility determinations: the UPRR Bridge and a bridge/culvert on Cuesta Forest Road. The proposed second mainline would occur within the existing railroad ROW and would be limited to already disturbed areas. Therefore, the Build Alternative would not affect recorded historical sites within the impact areas.

In San Luis Obispo County, there are 8 potentially historic structures of local importance from the more recent built environment ~~that exist~~ located within the existing Coast Corridor alignment and within the established temporary and permanent impact areas for the proposed Henry/Santa Margarita, Wellsona/Paso Robles, and McKay/Wellsona curve realignments. Although eligibility for the NRHP or CRHR has not been determined for these resources, the resources may be potentially historic owing to their age or their cultural importance on a local level. Curve realignments would require work outside the railroad ROW and have more potential to disturb existing structures than other ~~proposed~~ physical components ~~improvements~~ located within the railroad ROW. Subsequent project-level analysis of the proposed curve realignment footprints will be required to determine an impact to these historic buildings and parcels. If any of the curve realignments are carried forward, detailed design work will be necessary to identify final footprint areas. Design ~~such~~ work will help determine if the footprints overlap with one or more historic properties. ~~As appropriate, subsequent review of the proposed Henry/Santa Margarita, Wellsona/Paso Robles, and McKay/Wellsona curve realignments may be required to determine if one or more of them would affect any of the potentially eligible historic properties. As further discussed in **Section 3.10.3**, future project-level environmental review would further assess these resources.~~

Paleontological Resources

In Monterey County and in San Luis Obispo County, most of the existing rail alignment ~~and proposed improvements are~~ is underlain with quaternary alluvium and marine deposits from the Holocene epoch. This geologic unit is considered to have low sensitivity to encounter paleontological resources because it is young in geologic age ~~primarily made up of loose sand and silt material~~. The only portions of the study area with high paleontological sensitivity are located within the existing alignment #10 and the proposed second main track north of the Cuesta Grade.

Work required to upgrade existing portions of the Coast Corridor would generally not require grading or excavations that would impact potential paleontological resources because upgrades would be embedded into the existing tracks. However, proposed curve realignments, siding extensions/new sidings, and the second mainline would require grading ~~but primarily~~ at surficial levels. Typically, projects have an increased potential to affect paleontological resources when they involve substantial excavation work and/or tunneling. As none of the ~~proposed~~ physical components ~~improvements~~ comprising the Build Alternative are anticipated to require ~~significant~~ substantial excavation or any tunneling, the potential for impacts to paleontological resources would be low.

Indirect Impacts

The ~~range of potential improvements associated with the elements~~ components of the Build Alternative could have potential indirect effects on cultural resources, particularly where ~~proposed~~ physical components ~~improvements~~ are located in proximity to historic resources. Indirect effects include those that could indirectly alter the context in which an existing historic resource is situated, potentially to such an extent that the resource's eligibility for the NRHP is compromised. ~~As a result of~~ The potential introduction of new visual elements, noise, and vibration upon existing cultural resources ~~would need to~~ will be further assessed in subsequent environmental review.

As discussed in **Section 3.6, Aesthetics and Visual Resources**, the majority of the study area would have low to medium visual impacts as a result of implementation of ~~proposed~~ physical components ~~improvements~~. Some of the ~~proposed~~ physical components ~~improvements~~ would include the visual presence of construction equipment, light and glare impacts from any nighttime construction work, and newly disturbed natural land cover that would recover to its original undisturbed form. ~~As elements of the Build Alternative are carried forward for further design, funding, and implementation,~~ The potential for the Build Alternative ~~resources~~ to indirectly affect or contrast substantially with the existing railroad/transportation use of the corridor is unlikely.

~~With regard to noise and vibration~~ To the extent any of these Build Alternative physical components ~~improvements~~ are ultimately carried forward for further design leading to construction, heavy equipment and vehicles could result in temporary increases in noise and vibration levels. These temporary construction impacts would be more pronounced at nighttime when overall ambient noise levels are lower. Once any of the ~~potential proposed~~ physical components ~~improvements~~ are operational, noise and vibration effects would occur primarily on approach and pass through urban areas. While these effects would likely be found negligible and ~~further found~~ not to diminish the integrity of location, setting, feeling, association, workmanship, design or materials for any historic property, further analysis will be needed to make conclusions for any specific locations along the corridor.

3.10.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the King City siding extension and passenger station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile “island” of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, potential impacts to cultural and paleontological resources for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded components are located, as summarized in **Table 3.10-2**. The discussions below therefore assess effects of modified or excluded components. The vast majority of the sites in **Table 3.10-2** were recorded but the resources were not evaluated for eligibility.

Archaeological Resources

Based on further review of the location of the King City siding and passenger station, no archaeological resources are located within proximity to these improvement areas. Therefore, the Preferred Alternative would be unlikely to affect known archaeological sites within these areas.

As noted for the Build Alternative, the four curve realignments have the potential to result in impacts to six archaeological sites. Because the Preferred Alternative excludes these curve realignments, potential cultural impacts would be avoided.

The Preferred Alternative would include the installation of a 27-mile "island" CTC between McKay and Santa Margarita (between MP 202.3 and MP 229.6). As summarized in **Table 3.10-2** below, archaeological resources have been identified between McKay and Santa Margarita. Although archaeological resources are located within the vicinity of the Coast Corridor alignment within these 27 miles of proposed CTC, implementation of CTC would be located within the existing railroad ROW and would be limited to already disturbed areas. As a result, implementation of CTC would be unlikely to affect recorded archaeological sites within this portion of the corridor.

Historical Resources

The Build Alternative includes one potentially historic structure located within the King City passenger station . The revised passenger station footprint under the Preferred Alternative would affect two additional potentially historic structures. Therefore, implementation of the passenger station as part of the Preferred Alternative would potentially affect up to three historic structures.

With regard to the two additional structures, while the structures appear to be older than 45 years in age, the actual year of their construction is not recorded in County or City records. The structures appear to be utilitarian storage buildings, with metal exteriors and are located within the railroad ROW. In its preliminary design work for the proposed station, the City of King did not identify these structures as potentially historic resources. While it is highly unlikely that these structures possess historic value, without a more formal evaluation, there is not enough evidence to conclusively determine in this Program EIS/EIR whether one or both may be eligible historic resources. Accordingly, it is unlikely that these structures are eligible historic resources. However, because the year these buildings were constructed cannot be readily verified based on available information, any future project-level environmental review of the proposed station would require a site-specific analysis to determine eligibility.

There are six potentially historic resources within the Build Alternative's King City siding extension. The revised siding extension included under the Preferred Alternative would only affect one potentially historic resource that was never evaluated. This resource is a portion of the Southern Pacific Railroad and is part of the Build Alternative under Existing Alignment 3, but would be within the King City siding extension under the Preferred Alternative. Therefore, this resource had already been accounted for in the total number of potential historic structures and disclosed as part track improvements under the Build Alternative. Similar to the Build Alternative, the proposed King City siding extension under the Preferred Alternative would include work within the ROW. Physical improvements would be unlikely to alter historical values or eligibility as the improvements would be consistent with existing railroad use. However, future project-level environmental review would be necessary to formally determine the potential to affect historic resources in this location.

As noted for the Build Alternative, the four curve realignments within San Luis Obispo County would have resulted in potential impacts to eight potentially historic resources. Since the Preferred Alternative excludes these curve realignments, potential cultural impacts associated with these curve realignments would be avoided.

As discussed above, the Preferred Alternative would include the installation of a 27-mile "island" CTC between McKay and Santa Margarita (between MP 202.3 and MP 229.6). Implementation of CTC would be located within the existing railroad ROW and thus would be limited to already disturbed areas. As a result, implementation of CTC within these 27 miles would be unlikely to affect recorded historical sites within this portion of the corridor.

Overall, implementation of the Preferred Alternative would avoid eight potentially historic resources in comparison to the Build Alternative. Although eligibility for the NRHP or CRHR has not been determined for these resources, they may be eligible because of their age or cultural importance on a local level. As noted in the **Section 3.10.3** below, future project-level plans and environmental review will require a more detailed analysis of potential cultural resources which could include formal evaluation under federal and/or state requirements.

Paleontological Resources

Most of the underlying soil within Monterey County is quaternary alluvium and marine deposits from the Holocene epoch. This geologic unit is considered to have low sensitivity to encounter paleontological resources because it is young in geologic age. The revised King City siding extension and passenger station are underlain by the same types of deposits and each would have low paleontological sensitivity.

Additionally, the installation of a 27-mile “island” CTC between McKay and Santa Margarita (between MP 202.3 and MP 229.6). Implementation of CTC would be located within the existing railroad ROW within an area with generally low paleontological sensitivity. As a result, implementation of CTC within these 27 miles would be unlikely to affect paleontological resources within this portion of the corridor.

Table 3.10-2 Summary of Potential Impacts to Cultural and Paleontological Resources

Proposed Component	No Build Alternative			Build Alternative			Preferred Alternative		
	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity
Salinas Powered Switch		N/A		0	0	Low	0	0	Low
Upgrades to Existing Alignment Section #1	0	0	Low	0	0	Low	0	0	Low
Spence Siding Extension		N/A		0	0	Low	0	0	Low
Upgrades to Existing Alignment Section #2	0	1	Low	0	1	Low	0	1	Low
Gonzales Powered Switch		N/A		0	0	Low	0	0	Low
Soledad Powered Switch		N/A		0	0	Low	0	0	Low
Soledad New Passenger Station		N/A		0	9	Low	0	9	Low
Harlem/Metz Curve Realignments		N/A		0	6	Low	0	6	Low
Chalone Creek New Siding		N/A		0	0	Low	0	0	Low
Upgrades to Existing Alignment Section #3	0	2	Low	0	2	Low	0	1	Low

Proposed Component	No Build Alternative			Build Alternative			Preferred Alternative		
	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity
Coburn Curve Realignments		N/A		0	0	Low	0	0	Low
King City Siding Extension		N/A		0	6	Low	0	1	Low
King City New Passenger Station		N/A		0	1	Low	0	3	Low
King City Powered Switch		N/A		0	0	Low	0	0	Low
Upgrades to Existing Alignment Section #4	0	0	Low	0	0	Low	0	0	Low
MP 165 Curve Realignment		N/A		0	3	Low	0	3	Low
San Lucas New Siding		N/A		0	0	Low	0	0	Low
Upgrades to Existing Alignment Section #5	0	2	Low	0	2	Low	0	2	Low
MP 172 Track Realignment		N/A		0	2	Low	0	2	Low
San Ardo Powered Switch		N/A		0	0	Low	0	0	Low
Getty/Bradley Curve Realignments		N/A		3	1	Low	3	1	Low

Proposed Component	No Build Alternative			Build Alternative			Preferred Alternative		
	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity
Bradley Siding Extension		N/A		0	0	Low	0	0	Low
Bradley Powered Switch		N/A		0	0	Low	0	0	Low
Upgrades to Existing Alignment Section #6	4	6	Low	4	6	Low	4	6	Low
Upgrades to Existing Alignment Section #7	1	1	Low	1	1	Low	1	1	Low
McKay/ Wellsona Curve Realignments		N/A		0	2	Low	None. This component is not part of the Preferred Alternative.		
McKay East Powered Switches		N/A		0	0	Low	0	0	Low
Wellsona New Siding		N/A		1	0	Low	1	0	Low
Upgrades to Existing Alignment Section #8	1	4	Low	1	4	Low	1	4	Low
Wellsona/ Paso Robles Curve Realignments		N/A		0	3	Low	None. This component is not part of the Preferred Alternative.		
Templeton Siding		N/A		1	0	Low	1	0	Low
Templeton/ Henry Curve Realignments		N/A		4	0	Low	None. This component is not part of the Preferred Alternative.		

Proposed Component	No Build Alternative			Build Alternative			Preferred Alternative		
	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity	Archaeo Sites	Historic Architectural Resources	Paleo Sensitivity
Upgrades to Existing Alignment Section #9	8	3	Low	8	3	Low	8	3	Low
Henry/Santa Margarita Curve Realignment		N/A		2	3	Low	None. This component is not part of the Preferred Alternative.		
Santa Margarita Powered Switch		N/A		0	0	Low	0	0	Low
Cuesta Second Main Track		N/A		0	3	High	0	3	High
Upgrades to Existing Alignment Section #10	2	1	High	2	1	High	2	1	High

Source: ICF, 2013 (Appendix D of the Draft Program EIS/EIR).

[a] The table does not show any traditional cultural properties because none have been identified to date by the NAHC.

[b] Archaeological sites include those for which eligibility has not yet been determined as well as one resource for which eligibility was previously determined.

[c] Historic architectural resources listed here include those for which eligibility has not yet been determined as well as nine resources for which eligibility was previously determined.

3.10.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

~~General mitigation strategies identified in the Draft Program EIS/EIR for the Build Alternative would be entirely applicable to the Preferred Alternative~~ The measures listed below are applicable to both the Build and Preferred Alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project improvement will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review. ~~Such measures provide guidance as to additional analysis, evaluation and development of appropriate site specific mitigation prior to implementing elements of the Build Alternative or Preferred Alternative.~~

- **MIN-CUL-1. Recordation**: The lead agency(s) ~~should~~ would ensure that cultural resources adversely affected by the Build Alternative are recorded and documented in a similar manner to a Historic American Building Survey (HABS) or Historic American Engineering Record (HAER) to be coordinated with the SHPO.
- **MIN-CUL-2. Design Guidelines**: The lead agency ~~should~~ would ensure that design guidelines are developed for appropriate and compatible construction with regard to aesthetics. Design guidelines would meet HABS and HAER standards and would be reviewed by SHPO and other agencies.
- **MIN-CUL-3. Interpretive/Educational Materials**: The lead agency ~~should~~ may prepare interpretive and/or educational materials regarding affected historic properties or resources. The focus of this mitigation would be the historic themes ~~related to~~ of this resource.
- **A-CUL-4. Relocation**: Historic properties or resources that would be demolished because of the project should be relocated and rehabilitated. The lead agency ~~should~~ would prepare a removal plan, including site plans for the new locations and placing them on new foundations.
- **MIN-CUL-5. Monitoring**: Project construction documents and new construction ~~should~~ would be monitored to ensure they confirm to the design guidelines. A professional ~~should~~ would monitor construction to identify conditions that would conflict with the mitigation measures.

- **MIN-CUL-6. Minor Repairs and Reconstruction:** The lead agency ~~should~~ would ensure that inadvertent damage to historic properties or resources would be repaired in accordance Secretary of the Interior's Standards for Treatment of Historic Properties.
- **MIN-CUL-7. Salvage:** The lead agency ~~should~~ would ensure that selected decorative or architectural elements of any adversely affected historic properties or resources should be reviewed for feasibility of salvage to mitigate loss or destruction. Where possible, these elements ~~should~~ would be retained and reused in construction. Where not possible, selected salvaged elements ~~should~~ would be made available for educational purposes.
- **MIN-CUL-8. Paleontological Resources**: Mitigation measures for paleontological resources ~~should~~ would be identified prior to implementing specific elements of the Build or Preferred Alternative, such as education of workers, recovery of fossils found during reconnaissance, monitoring construction. Furthermore, mitigation strategies ~~should~~ would include establishing protocols for recovering fossils during construction for identification, dating, interpreting, and preserving at appropriate facilities.

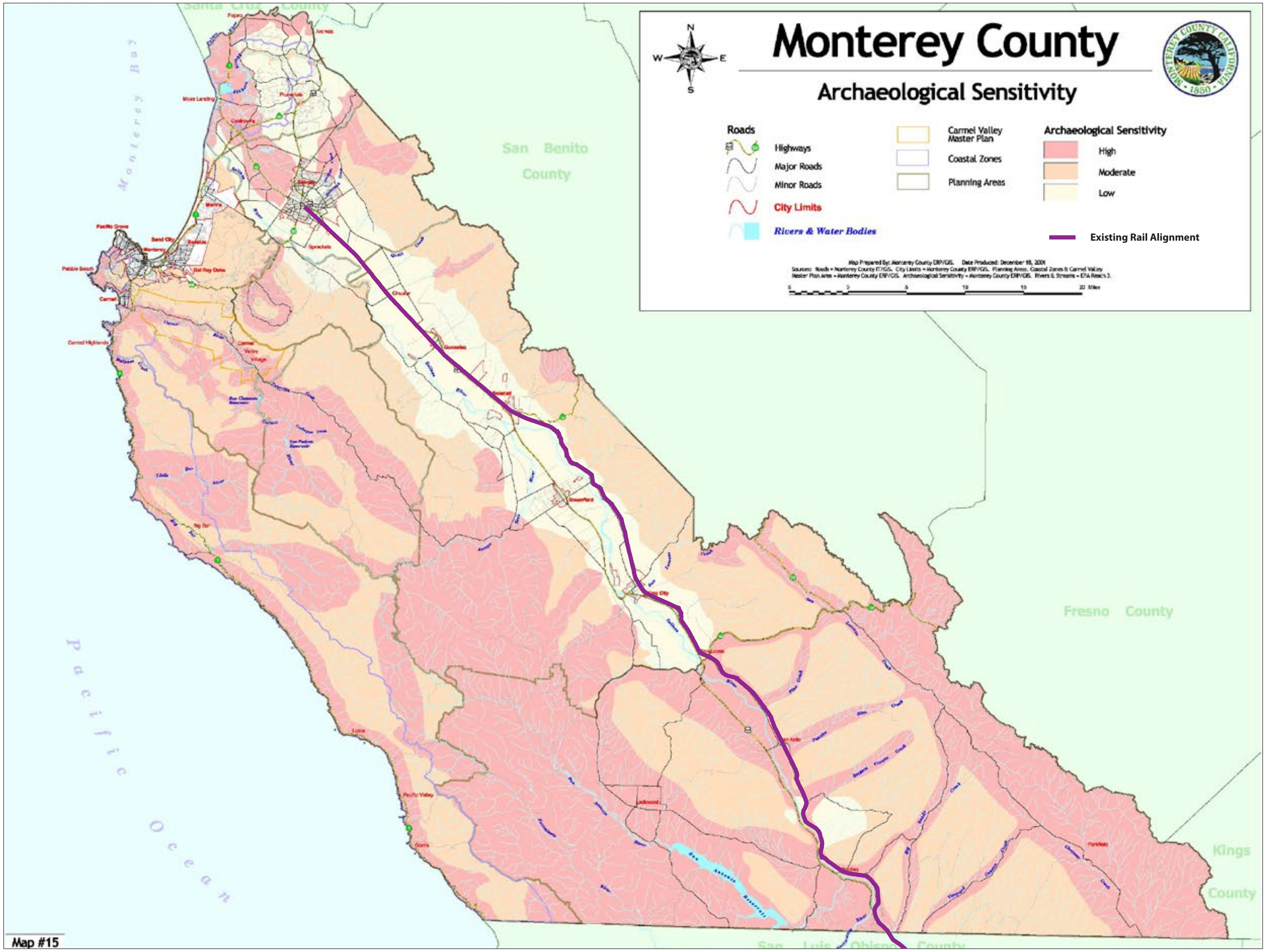
3.10.6 SUBSEQUENT ANALYSIS

Where resources exist in the immediate area of the ~~proposed~~ project components, additional evaluation of the potential effects to cultural resources ~~would~~ will be conducted prior to implementing specific components of the ~~Build Alternative~~ action alternatives. Additional evaluation will include further identification and analysis of resources present, their condition and eligibility, and the potential direct and indirect effects of the ~~proposed improvements~~ components to adversely affect the resources' eligibility status. All identified archaeological and historical resources will be evaluated using NRHP and CRHR eligibility criteria.

Further evaluation of paleontological resources will include field reconnaissance to identify any exposed resources and determine sensitivity.

~~Further consultation with NAHC and Native American groups would be necessary with a more precise study area to determine potentially sensitive resources or territories within the study area.~~

Project level review may trigger further consultation with the NAHC and Native American groups consistent with Section 106 of the NHRP and AB 52.



Monterey County Archaeological Sensitivity

Figure 3.10-1

Source: Monterey County, 2004

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3.11 GEOLOGY, SOILS, AND MINERALS

~~This section describes the existing geologic setting and soil conditions in the study area as well as any potential impacts that would occur with either the No Build or Build Alternative~~ This section evaluates existing fault lines, seismic hazards, landslide susceptibility, and liquefaction susceptibility, and discloses locations of oil and gas fields, mineral resource sites, and bedrock conditions that are relevant for any potential excavation activities. This section also describes the potential geologic and seismic impacts associated with the Preferred Alternative in comparison with the No Build and Build Alternatives. ~~The analysis also discloses locations of oil and gas fields, mineral resource sites, and bedrock conditions that are relevant for any potential excavation activities.~~

Chapter 5.0, Comments and Coordination, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. The City of King provided two comments on the geology section (see comments A-3.52 through A-3.53). These comments were focused on the composition of the Build Alternative. Comment I-12.1 is about the geologic conditions on the south side of the Cuesta Grade. The comment is consistent with conclusions in the Program EIS/EIR (**Table 3.11-2**) that this area (Existing Alignment Section #10) has a high to very high landslide potential. This information is reflected in **Table 3.11-3** of this Final Program EIS/EIR.

3.11.1 REGULATORY REQUIREMENTS

There are no federal statutes or regulatory provisions related to geology and soils considerations on non-federal lands. However, a number of state and local regulations apply to geologic hazards and engineering best practices.

3.11.1.1 State

Alquist-Priolo Earthquake Zoning Act (Public Resources Code § 2621 et seq.)

The Alquist-Priolo Earthquake Zoning Act regulates development and construction in designated corridors along active faults (earthquake fault zones) where there is elevated risk of surface fault rupture. Earthquake fault zone maps are prepared by the State Geologist to indicate areas with potential surface fault rupture hazards. Before a project can be permitted or developed, cities and counties must conduct a site-specific geologic investigation to determine if the project would cross an active fault. The Act prohibits the location of most types of structures for human occupancy across the active traces of faults in earthquake fault zones.

Seismic Hazards Mapping Act (Public Resources Code § 2690-2699.6)

The Seismic Hazard Mapping Act was adopted in 1990 following the Loma Prieta earthquake to reduce threats to public health and safety and to minimize property damage caused by earthquakes. The act directed the California Department of Conservation to identify and map areas prone to the earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. The act further required most new development projects for human occupancy with designated zones to undergo site-specific geotechnical investigations to identify potential seismic hazards and formulate/implement mitigation measures.

Surface Mining and Reclamation Act (Public Resources Code § 2710 et seq.)

The Surface Mining and Reclamation Act established a program to regulate surface mining activities to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. The law sets uniform requirements for areas that are known to contain mineral deposits important to meet the future needs of the area.

3.11.1.2 Local

Monterey County General Plan

The Monterey County General Plan Safety Element contains policies for seismic and geologic hazards. The overall goal of these policies is to minimize the potential for loss of life and property resulting from geologic and seismic hazards. The policies include enforcement of state policies, site-specific geologic studies ~~as it relates to~~ for new development, land use designations, and required involvement of a California licensed civil engineer or landscape architect, when necessary.

San Luis Obispo County General Plan

The San Luis Obispo County General Plan Safety Element contains policies for seismic and geologic hazards. The overall goal of these policies is to minimize the potential for loss of life and property resulting from geologic and seismic hazards. The General Plan includes policies, standards, and a corresponding implementation program that relates to fault rupture hazards, groundshaking, liquefaction and seismic settlement, slope instability and landslides, and coastal bluff erosion.

3.11.2 METHODS OF EVALUATION

To assess potential impacts related to geology, soils, and minerals, aerial mapping was used to obtain information for the existing Coast Corridor rail alignment and the ~~proposed~~ physical component ~~improvement~~ areas. ~~Proposed~~ Physical components ~~improvements~~ were mostly evaluated as having high, medium, or low potential geologic impacts based on the number of geologic constraints identified.

Active faults, ground shaking, liquefaction, slope stability, and soil type are evaluated in the analysis. The data used for the aerial mapping incorporated the permanent and temporary footprints for each ~~proposed~~ physical component ~~improvement~~ and the existing alignment to determine the findings. **Table 3.11-1** summarizes potential geological and soils-related effects. **Table 3.11-2** and **Table 3.11-3** summarizes specific geologic and soils related issues for each of the proposed physical components ~~improvements~~**.** The permanent and temporary footprint areas are defined as follows:

- Impact Type Definitions:
  - Permanent: Areas where affected resources would not be restored back to their original conditions (i.e., new track locations).
  - Temporary: Areas that would be disturbed during construction and then returned to their original conditions post construction (i.e., staging areas and ingress/egress).
- Track/Signal Upgrades:
  - Existing railroad ROW (upgrades would be constructed via existing tracks – No Impacts are assumed)
- Sidings:
  - Permanent = Existing railroad ROW
  - Temporary = 50 feet on either side of existing ROW
- Curve Realignments:
  - Permanent =100 foot wide corridor
  - Temporary = 200 feet on either side of 100 foot corridor for a total width of 500 feet
- Second Mainline:
  - Permanent = Existing railroad ROW
  - Temporary = 100ft on either side of existing railroad ROW

- Stations
  - Soledad Station: 1.9 acres – permanent impact area is based on conceptual station plans from the *Soledad Downtown Specific Plan* (2012).
  - King City Station: 2.4 acres – permanent impact area is based on the conceptual station plans from the ~~King City First Street Corridor Master Plan (2013)~~ *Multi-Modal Transportation Center – Conceptual Design* ((MMTC) 2014).

Faults

The permanent and temporary impact footprints were measured to identify any Alquist-Priolo and Quaternary faults that cross the existing alignment and the areas with ~~proposed~~ physical components ~~improvements~~. The data was measured in the amount of feet of the ~~proposed~~ physical components ~~improvements~~ that would be within a fault zone; the results are expressed as a percentage within **Table 3.11-2**.

Ground Shaking

The permanent and temporary impact footprints were measured to show the level of ground motion that may affect the areas with ~~proposed~~ physical components ~~improvements~~. The data was categorized as low, medium, and high horizontal ground accelerations using California potential shaking ranges. Low is classified as 0.0 – 0.83g, medium is 0.83 – 1.66g, and high is 1.66 – 2.50g.

Liquefaction

The permanent and temporary footprints of ~~proposed~~ physical components ~~improvements~~ were measured to show the relative susceptibility for liquefaction (accounting for the age and type of soil/sediment, relative density of the mater, and the depth of the water table). The data was ranked to show whether the area would be very low, low, moderate, high, and very high susceptibility to liquefaction.

Slope Stability

The permanent and temporary footprints of physical components ~~improvements~~ were measured to show areas that may be susceptible to landsliding. The data was ranked to show whether the area would be very low, low, moderate, high, and very high susceptibility to liquefaction.

Shrink-Swell Potential

The permanent and temporary footprints of ~~proposed~~ physical components ~~improvements~~ were measured to show areas of soils that would be considered expansive by the Uniform Building Code (1994). The data was ranked as low, moderate, or high susceptibility to shrink-swell.

Corrosive Soils

The permanent and temporary footprints of ~~proposed~~ physical components ~~improvements~~ were measured to show areas of soils that would be considered corrosive to uncoated steel and concrete. The data was ranked as low, moderate, or high susceptibility to corrosion.

Soil Erosion

The permanent and temporary footprints of the ~~proposed~~ physical components ~~improvements~~ were reviewed in light of existing slope and vegetation coverage to determine whether construction activities would have high, medium, or little/low potential to result in soil erosion.

Mineral Resources

The presence and number of important mineral resources, such as oil/gas fields and geothermal wells are evaluated in the analysis. The aerial mapping data incorporated the permanent and temporary footprints for each ~~proposed~~ physical component ~~improvement~~ and the existing alignment relative to known oil and gas fields. ~~The number of such fields crossed by the proposed improvements is noted.~~

3.11.3 AFFECTED ENVIRONMENT

3.11.3.1 Geologic Setting

California's central coast has a dynamic and varied landscape made up of coastal mountain ranges, gently sloping hills, and valley flats. Over time, tectonic plate activity and instances of high-pressure and heat (metamorphism) changed the composition and structure of underlying materials. As a result, Monterey and San Luis Obispo Counties are geologically complex and seismically active.

The Coast Corridor is situated in the Coastal Ranges Geomorphic Province with the Pacific Ocean to the west and the Great Valley Geomorphic Province to the east, with the distant Sierra Nevada Mountain Range Geomorphic Province farther east.[1] The California coastal mountain ranges were formed by vertical uplift as the Pacific tectonic plate and the North American tectonic plate converged and compressed. Over tens of millions of years, these mountain ranges eroded and deposited nutrient-rich soil on the California central valley flats. The earth's climate changed over time, shifting between glacial maximums and interglacial periods, and resulted in sea level fluctuations. When the seas advanced, marine layers were deposited and formed the rich soils found in the Salinas Valley, which continue today to lend themselves to intensive agricultural uses.

In the northern portion of the study area within Monterey County, most of the underlying geologic units are quaternary alluvium and marine deposits from the Pliocene to Holocene epoch, between the present time and 1.6 million years ago (mya). The quaternary alluvium deposits are generally young and made up of unconsolidated sand, silt, and clay-bearing material. [2]

San Luis Obispo County is primarily underlain with quaternary alluvium and marine deposits and Franciscan Complex. The underlying Franciscan Complex formed when subsurface soils underwent high-pressure and heat as the Pacific and North American plates interacted. These geological deposits are much older than quaternary alluvium; they were formed between the Jurassic to Cretaceous epochs (between 65 and 200 mya).

3.11.3.2 Seismic Hazards

Faults

Tectonic plate activity in Central California has resulted in a variety of active fault zones. A fault is a fracture on the earth's surface where two blocks of the earth's crust slide past each other. In most of California, large faults form in response to stress caused by relative displacement between the North American and Pacific tectonic plates. Over time, the displacement stresses build up enough strain that the two blocks slip past each other to alleviate the tension, causing an earthquake. Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake.

[1] California Geological Survey, 2006

[2] County of Monterey, 2006, pp. 4.4-1-2, 25

Several faults are located within the Coast Corridor rail alignment, as shown in **Figure 3.11-1** and **Figure 3.11-2**.[3]

The California Geological Survey and the United States Geological Survey (USGS) classify *active* faults if they have ruptured in the last 11,000 years (or within the Holocene epoch). All other faults are considered *inactive*.[4]

The Rinconada quaternary fault is the most prevalent active fault within the Coast Corridor alignment. The Rinconada fault zone is a strike-slip fault that is part of the San Andreas Fault system and extends west of King City southeast for approximately 74 miles to Santa Margarita.[5] The Rinconada fault is parallel to the Coast Corridor throughout most of Monterey County. Near Paso Robles, the existing rail alignment travels turns towards the southwest direction and traverses the fault line through Templeton, Atascadero, and Santa Margarita. According to the Monterey County General Plan EIR, the Rinconada fault has a low-rated slip potential and is not expected to produce large earthquakes. No major earthquake has occurred along this fault within the past 100 years.

Small portions of the Cambria and Oceanic faults traverse the existing rail alignment near the City of San Luis Obispo. The Cambria fault trends northwest and is approximately 39 miles long. The Oceanic Fault Zone trends north-northwest for 62 miles.[6]

Ground Shaking

Ground or seismic shaking is the motion of the earth's surface resulting from an earthquake generated by a sudden slip at a fault line. An earthquake with moderate to high magnitude can generate considerable ground shaking. The degree of shaking is dependent on the magnitude of the earthquake, distance to the epicenter, duration of strong ground motion, and local geologic conditions (soil type, topography, etc). The most common damage from ground shaking is structural damage to buildings.

Both Monterey County and San Luis Obispo Counties are located in a seismically active region subject to earthquakes and potentially strong ground shaking from nearby faults and generally unconsolidated alluvial areas. The most recent large

[3] This graphic depicts only terrestrial portions of the illustrated fault lines within Monterey County.
[4] County of Monterey, 2006, p. 4.4-.
[5] Rosenberg and Bryant, 2003
[6] County of San Luis Obispo, 1999,pp. 57-60

earthquake in the region was the 2003 San Simeon earthquake, which registered a magnitude of 6.5. This event resulted in two fatalities from a building collapse in downtown Paso Robles. The 1989 Loma Prieta earthquake resulted in moderate to light ground shaking in the northern Salinas Valley. Although most of Monterey and San Luis Obispo Counties are subject to strong ground shaking, the vast majority of the existing Coast Corridor alignment and proposed components ~~improvements~~ have a low potential for ground shaking, as further discussed below. One portion of Section #1 of the existing alignment within Monterey County, south of Salinas, has moderate ground shaking potential.

Liquefaction

Liquefaction is the process in which water-saturated sediment temporarily loses strength and acts as a fluid. During liquefaction, the soil undergoes temporary loss of strength causing the soil to behave as a fluid for short periods of time. To be susceptible to liquefaction, a soil is typically cohesionless, with a grain size distribution of a specified range (generally sand and silt), loose to medium dense, below the groundwater table, and subjected to a sufficient magnitude and duration of ground shaking. Liquefaction-related damage could include loss of support beneath foundations and other rail components ~~improvements~~. **Figure 3.11-3** and **Figure 3.11-4** ~~summarizes~~ show the areas of liquefaction potential of the Coast Corridor.

According to the Monterey County General Plan EIR, ground shaking that causes liquefaction is most prevalent in alluvial basins in Monterey County. The portions of Coast Corridor within Monterey County are most subject to liquefaction near the Salinas River and floodplain.

In San Luis Obispo County, areas that are underlain by young, poorly consolidated, saturated granular alluvial sediments are most susceptible to liquefaction. Areas adjacent to rivers and creeks are also considered vulnerable. Liquefaction potential along the Coast Corridor ranges from very low to very high, but most of the existing alignment and proposed components ~~improvements~~ have moderate potential.

Slope Stability

Slope failure can occur as either rapid movement of large masses of soil (landslide) or slow, continuous (creep). The primary factors influencing the stability of a slope are the nature of the underlying soil or bedrock, the geometry of the slope (height and steepness), rainfall, and the presence of previous landslide deposits. Landslides typically occur in areas of steep slopes where underlying earth materials are relatively weak and particularly where high rainfall occurs and/or high groundwater levels are present. Water can act as a lubricant to decrease resisting forces. Ground shaking due to earthquakes can also cause landslides. The Coast Corridor alignment is located along largely flat areas where landslide hazard risk is generally low, with the exception of several high-risk area as discussed below.

3.11.3.3 Soils

Shrink-Swell Potential

Expansive soils can undergo significant volume change (shrink or swell) due to variations in moisture content. Earth materials susceptible to these volumetric changes include soils and rock formations containing clays. Changes in soil moisture content can result for rainfall, irrigation, utility leakage, surface drainage, perched groundwater, drought, or other factors.

During shrink-swell cycles, the volume of the soil changes and can cause damage to infrastructure. Expansive soils vary in severity along the existing Coast Corridor alignment and where there are proposed physical components ~~improvements~~. In Monterey County, expansive soils are most severe in the northern portions of the existing alignment. Most of the proposed physical components ~~improvements~~ have low or moderate amounts of expansive soil.

In San Luis Obispo County, the shrink-swell potential for soils is much lower than in Monterey County. Along the existing Coast Corridor alignment, the presence of expansive soils is mostly moderate to low.

Corrosive Soils

A corrosive substance is one that will destroy or irreversibly damage another surface or substance with which it comes into contact. Corrosive soils are a potential hazard to concrete and metal foundations, utilities, and other buried or ground-level improvements.

Soil Erosion

Soil erosion is a natural process that can be caused by wind, water, waves, or corrosion. Erosion can lead to soil loss, degraded water quality, and other effects.

In agricultural areas of the Salinas Valley, erosion is common when flooding is prevalent. As a result, sediment is picked up and deposited in another location.

Wind is another common source of erosion in the Salinas Valley, especially in areas with sandy deposits.[7] Most of the existing Coast Corridor alignment has soil prone to moderate erosion.

3.11.3.4 Mineral Resources

Geological resources in California include oil and gas fields, geothermal fields, and a wide range of mineral resources. ~~Given the value of these resources, CEQA requires consideration of whether a project would eliminate or otherwise reduce access to such resources.~~ According to the Monterey County General Plan EIR, there are oil wells scattered throughout Monterey County, but the vast majority are clustered in the San Ardo oil and gas field, the sixth largest oil field in the State of California. The existing Coast Corridor rail alignment passes through a portion of the San Ardo field.

3.11.4 ENVIRONMENTAL CONSEQUENCES

3.11.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing operations and physical components, and assumes the perpetuation of existing freight and passenger service. The only physical component ~~improvement~~ would be the implementation of PTC along the corridor, including modification to signaling and communications equipment. These PTC related changes are not expected to result in heightened risk associated with geology or soils-related effects. As such, existing passenger and freight operations (along with potential additional freight operations) would continue to be susceptible to the existing geologic hazards present within the study area.

3.11.4.2 Build Alternative

The Build Alternative would construct physical components ~~improvements~~ in areas with high geological impact potential. **Table 3.11-1** summarizes potential geological and soils-related effects. **Table 3.11-2** summarizes specific geologic and soils issues for each of the ~~proposed physical improvements~~ components of the Build Alternative.

[7] County of Monterey, 2006,pp. 4.4-21-23

Table 3.11-1 Types of Potential Impacts from Geologic and Soil Conditions

Geologic Condition	Potential Impact
Ground Shaking/Liquefaction	Ground shaking and liquefaction effects from an earthquake could pose safety hazards to workers and public from possible derailment, collapse of infrastructure, or damage to facilities.
Active Fault Crossing	Active fault crossings could pose potential risk to workers and public due to interruption of service or derailment due to surface rupture along faults.
Slope Stability	Landslide potential could pose potential risk to workers and public due to failure of natural and/or construction cut slopes or retention structures.
Soil Conditions	Expansive soil, corrosive soil, and soil erosion could damage infrastructure and cause premature deterioration of underground structures.
Oil & Gas Fields	Potential migration of oil & gas fields could release toxic gases into subsurface materials.
Mineral Resources	Potential project costs and delays due to potential impacts on existing mineral resource areas and facilities, including remediation.

Source: Circlepoint, 2014.

Table 3.11-2 Summary of Potential Geologic and Soil Impacts - Build Alternative

Build Alternative Component	Active Fault Crossing (% of length)	Ground Shaking Potential (H/M/L)	Liquefaction Potential (H/M/L)	Landslide Potential/ Slope Stability (H/M/L)	Soil Shrink-Swell Potential (H/M/L)	Soil Corrosivity Potential (H/M/L) Steel	Soil Corrosivity Potential (H/M/L) Concrete	Soil Erosion Hazard Potential (H/M/L)	Oil & Gas Fields (# crossed)
Salinas Powered Switch	0%	Low	High	Low	Moderate	High	Low	Low	0
Upgrades to Existing Alignment Section #1	0%	Low/ Moderate	High	Low	High (56%) Moderate (12%) Low (32%)	High	Low	Very Low	0
Spence Siding Extension	0%	Low	Moderate	Low	Moderate/ High	High	Low	Low	0
Upgrades to Existing Alignment Section #2	0%	Low	Moderate	Moderate	High (28%) Moderate (28%) Low (37%) N/A (5%)	High	Low/ Moderate	High (8%) Moderate (2%) Low (90%)	0
Gonzales Powered Switch	0%	Low	Moderate	Moderate	Moderate	High	Low	Low	0

Build Alternative Component	Active Fault Crossing (% of length)	Ground Shaking Potential (H/M/L)	Liquefaction Potential (H/M/L)	Landslide Potential/ Slope Stability (H/M/L)	Soil Shrink-Swell Potential (H/M/L)	Soil Corrosivity Potential (H/M/L)		Soil Erosion Hazard Potential (H/M/L)	Oil & Gas Fields (# crossed)
						Steel	Concrete		
Soledad Powered Switch	0%	Low	Moderate	Low	High	High	Low	Low	0
Soledad New Passenger Station	0%	Low	Moderate	Low	High	High	Low	Low	0
Harlem/Metz Curve Realignments	0%	Low	High	Moderate	Low	High	Low	Low/ Moderate	0
Chalone Creek New Siding	0%	Low	High	Moderate	Low/ Moderate	High	Low	Low	0
Upgrades to Existing Alignment Section #3	0%	Low	High	Moderate	High (36%) Moderate (22%) Low (32%) N/A (11%)	High	Low	High (11%) Moderate (23%) Low (66%)	0
Coburn Curve Realignments	0%	Low	High	Moderate	Moderate/ High	High	Low	Low	0
King City Siding Extension	0%	Low	Moderate	Low	Moderate	High	Low	Low	0

Build Alternative Component	Active Fault Crossing (% of length)	Ground Shaking Potential (H/M/L)	Liquefaction Potential (H/M/L)	Landslide Potential/ Slope Stability (H/M/L)	Soil Shrink-Swell Potential (H/M/L)	Soil Corrosivity Potential (H/M/L)		Soil Erosion Hazard Potential (H/M/L)	Oil & Gas Fields (# crossed)
						Steel	Concrete		
King City New Passenger Station	0%	Low	Moderate	Low	Moderate	High	Low	Low	0
King City Powered Switch	0%	Low	Moderate	Low	Moderate	High	Low	Low	0
Upgrades to Existing Alignment Section #4	0%	Low	Moderate	Low	Moderate (44%) Low (31%) N/A (26%)	High	Low	High (26%) Moderate (4%) Low (71%)	0
MP 165 Curve Realignment	0%	Low	Moderate	Low	High	High	Low/ Moderate	Low/ Moderate	0
San Lucas New Siding	0%	Low	Moderate	Low	Low/High	High	Moderate	Low/ Moderate	0

Build Alternative Component	Active Fault Crossing (% of length)	Ground Shaking Potential (H/M/L)	Liquefaction Potential (H/M/L)	Landslide Potential/ Slope Stability (H/M/L)	Soil Shrink-Swell Potential (H/M/L)	Soil Corrosivity Potential (H/M/L)		Soil Erosion Hazard Potential (H/M/L)	Oil & Gas Fields (# crossed)
						Steel	Concrete		
Upgrades to Existing Alignment Section #5	0%	Low	High	High	High (13%) Moderate (51%) Low (32%) N/A (4%)	High	Low	Very High (6%) High (11%) Moderate (5%) Low (78%)	2
MP 172 Track Realignment	0%	Low	Moderate	Low	Moderate	High	Low/ Moderate	Low/ Moderate	0
San Ardo Powered Switch	0%	Low	Moderate	Low	Moderate	High	Low	Low	0
Getty/Bradley Curve Realignments	0%	Low	Moderate	High	Low/ Moderate	High	Low	Low/ Moderate	0
Bradley Siding Extension	0%	Low	High	Moderate	High	High	Low/ Moderate	Low	0
Bradley Powered Switch	0%	Low	High	Moderate	High	High	Low/ Moderate	Low	0

Build Alternative Component	Active Fault Crossing (% of length)	Ground Shaking Potential (H/M/L)	Liquefaction Potential (H/M/L)	Landslide Potential/ Slope Stability (H/M/L)	Soil Shrink-Swell Potential (H/M/L)	Soil Corrosivity Potential (H/M/L) Steel	Soil Corrosivity Potential (H/M/L) Concrete	Soil Erosion Hazard Potential (H/M/L)	Oil & Gas Fields (# crossed)
Upgrades to Existing Alignment Section #6	0%	Low	High	Low	High (14%) Low (96%)	High	Low	Low	0
Upgrades to Existing Alignment Section #7	0%	Low	Moderate (95%) Very High (5%)	Low	Low	Moderate	Low	Low	0
McKay/ Wellsona Curve Realignments	0%	Low	Moderate/Very High	Low	Low	Moderate	Low/ Moderate	Low/ Moderate	0
McKay East Powered Switches	0%	Low	Moderate	Low	Low	Moderate	Low	Low	0
Wellsona New Siding	0%	Low	Moderate/ Very High	Low	Low	Moderate	Low	Low/ Moderate	0
Upgrades to Existing Alignment Section #8	0.21%	Low	Very Low (47%) Moderate (23%) Very High (30%)	Low	Moderate (41%) Low (59%)	Moderate /High	Low/ Moderate	Low/ Moderate	0

Build Alternative Component	Active Fault Crossing (% of length)	Ground Shaking Potential (H/M/L)	Liquefaction Potential (H/M/L)	Landslide Potential/ Slope Stability (H/M/L)	Soil Shrink-Swell Potential (H/M/L)	Soil Corrosivity Potential (H/M/L) Steel	Soil Corrosivity Potential (H/M/L) Concrete	Soil Erosion Hazard Potential (H/M/L)	Oil & Gas Fields (# crossed)
Wellsona/ Paso Robles Curve Realignments	0%	Low	Moderate	Low	Low	Moderate / High	Low/ Moderate	Low	0
Templeton Siding Extension	2.02%	Low	Moderate/ High	Low	Low/ Moderate	Moderate / High	Low	Low	0
Templeton/ Henry Curve Realignments	0%	Low	Moderate	Low	Low	Moderate	Low/ Moderate	Moderate	1
Upgrades to Existing Alignment Section #9	0.84%	Low	Very Low (27%) Moderate (72%) Very High (1%)	Low (68%) Moderate (16%) High (16%)	High (6%) Moderate (38%) Low (56%)	Moderate	Low	Low	0
Henry/Santa Margarita Curve Realignment	18.31%	Low	Very Low/ Moderate	Low	Low/ Moderate	Moderate	Low/ Moderate	Low	0
Santa Margarita Powered Switch	0%	Low	Moderate	Low	Low	Moderate	Low/ Moderate	Low	0

Build Alternative Component	Active Fault Crossing (% of length)	Ground Shaking Potential (H/M/L)	Liquefaction Potential (H/M/L)	Landslide Potential/ Slope Stability (H/M/L)	Soil Shrink-Swell Potential (H/M/L)	Soil Corrosivity Potential (H/M/L)		Soil Erosion Hazard Potential (H/M/L)	Oil & Gas Fields (# crossed)
						Steel	Concrete		
Cuesta Second Main Track	0%	Low	Very Low/ Moderate	Low/High	Low/ Moderate	Moderate / High	Moderate/ High	Moderate/ High	0
Upgrades to Existing Alignment Section #10	0.58%	Low	Very Low (83%) Moderate (17%)	Low (15%) High (80%) Very High (4%)	High (30%) Moderate (62%) Low (8%)	High	Low/ Moderate	Low/ Moderate	0

Source: ICF, 2013

Seismic Hazards

As shown in **Table 3.11-2,** geologic conditions in the study area generally present low to moderate constraints on development. Overall, the study area has a low potential for ground shaking because few active faults cross the existing and proposed alignment areas; however, about 18 percent of the proposed Henry/Santa Margarita curve realignment area would traverse the Rinconada Fault. The Rinconada fault has a low-rated slip potential and is not expected to produce large earthquakes ~~as discussed in **Subsection 3.11.3**~~. Nonetheless, this Build Alternative component would require special designs to minimize potential damage to the tracks and other infrastructure from surface fault rupture.

Liquefaction potential is generally moderate to high for most of the study area. The Coburn curve realignment, Harlem/Metz curve realignment, Bradley siding extension, and the new siding at Chalone Creek are most notable in Monterey County for high susceptibility to liquefaction ~~potential~~. Similarly, the proposed McKay/Wellsona curve realignment, Templeton siding extension, and new siding at Wellsona are proposed to be located in areas of high ~~potential~~ susceptibility to liquefaction in San Luis Obispo County.

Portions of the existing alignment and ~~proposed~~ physical components ~~improvements~~ within Monterey County would mostly be located in areas with low potential for landslides because the topography is generally flat, as shown in **Figure 3.11-5**. However, several portions of the alignment extend ~~run~~ immediately adjacent to or near relatively steep slopes. These areas include the Harlem/Metz and Coburn curve realignments, Chalone Creek new siding, and upgrades to existing alignment #3. These Build Alternative components would have moderate potential to be impacted by ~~for~~ landslides. Farther south, the Getty/Bradley curve realignments and the Bradley siding extension would be located in areas that have moderate to high potential for landslides. In San Luis Obispo County, the existing railroad alignment is within an area of generally low landslide potential.

~~Overall,~~ The physical ~~proposed~~ components ~~improvements~~ with the most noteworthy geologic risks are the Getty/Bradley curve realignments, Harlem Metz curve realignments, Bradley siding extension, and the new siding at Chalone Creek, which would ~~face~~ be located in areas of moderate to high risks for both liquefaction and landslide potential.

Soils

As shown in **Table 3.11-2,** soil conditions in the study area generally present moderate constraints on development. Most of the ~~proposed improvements~~ Build Alternative components located within Monterey County would be within areas that have moderate to high shrink-swell potential, particularly the Spence siding extension, Coburn curve realignment, MP 165 curve realignment, Bradley siding, San Lucas siding, and the proposed Soledad station ~~have several acres of high potential shrink-swell soil potential~~. In San Luis Obispo County, ~~shrink-swell soil potential in improvement areas and existing areas is generally low to moderate~~ the Build Alternative components would be located in areas with low to moderate shrink-swell soil potential.

Most of the soils in areas of the ~~proposed~~ physical components ~~improvements~~ located in Monterey County are highly corrosive to steel and low to concrete with low potential for soil erosion. Most of the soils in San Luis Obispo County are moderately corrosive to steel and concrete with low to moderate soil erosion potential.

Mineral Resources

The proposed Templeton/Henry curve realignment would ~~cross~~ extend through one oil and gas field that is no longer in use. There are no geothermal wells within any of the ~~proposed~~ physical component ~~improvement~~ areas.

3.11.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative includes revised plans for the City of King siding extension and passenger station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile “island” of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects from geology, soils, and minerals for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded components are located. The discussions below assess geologic, soil, and mineral effects of modified or excluded components.

Seismic Hazards

Under the Preferred Alternative, overall potential seismic hazards are similar to those described in the Build Alternative. However, about 18 percent of the Henry/Santa Margarita curve realignment area would have traversed the Rinconada Fault. Because the Preferred Alternative excludes this curve realignment the impacts associated with surface fault rupture would not occur.

High liquefaction potential was identified near the McKay/Wellsona curve realignment. Because the Preferred Alternative excludes this curve realignment it would have reduced risk for impacts from liquefaction.

Modifications to the footprints of the City of King siding extension and passenger station would not substantially alter the potential seismic hazards identified for the Build Alternatives because the new footprints would be located in regions with similar geologic conditions. The addition of the 27 miles of island CTC between McKay and Santa Margarita would be placed within the existing railroad ROW between sections 6 through 9 of the alignment (refer to **Table 3.11-3**). Moderate to high liquefaction potential and moderate soil shrink-swell potential exists throughout this portion of the corridor. However, given that CTC is a signaling system, it would be placed on the ground adjacent to the existing railroad and would not entail any substantially increased risk to persons or property.

As summarized in **Table 3.11-3**, the Preferred Alternative would not result in any new substantial seismic adverse effects.

Mineral Resources

Under the Preferred Alternative, effects to mineral resources would be similar to those described for the Build Alternative. In the Build Alternative, the proposed Templeton/Henry curve realignment would cross over one oil and gas field that is no longer in use. Since the Preferred Alternative excludes this curve realignment, potential impacts of crossing the oil and gas field would be reduced. No new substantial effects to mineral resources would occur under the Preferred Alternative (refer to **Table 3.11-3** below).

Table 3.11-3 Summary of Potential Geologic and Soil Impacts - Preferred Alternative

Preferred Alternative Component	Active Fault Crossing (% of length)	Ground Shaking Potential (H/M/L)	Liquefaction Potential (H/M/L)	Landslide Potential/ Slope Stability (H/M/L)	Soil Shrink-Swell Potential (H/M/L)	Soil Corrosivity Potential (H/M/L)		Soil Erosion Hazard Potential (H/M/L)	Oil & Gas Fields (# crossed)
						Steel	Concrete		
King City Siding Extension	0%	Low	Moderate	Low	Moderate/High	High	Low	Low	0
King City New Passenger Station	0%	Low	Moderate	Low	Moderate	High	Low	Low	0
McKay/ Wellsona Curve Realignments	None. This component is not part of the Preferred Alternative.								
Wellsona/ Paso Robles Curve Realignments	None. This component is not part of the Preferred Alternative.								
Templeton/ Henry Curve Realignments	None. This component is not part of the Preferred Alternative.								
Henry/Santa Margarita Curve Realignment	None. This component is not part of the Preferred Alternative.								

Note: All other proposed physical components are the same between the Build and Preferred Alternatives and the impacts would be the same and are therefore not repeated in this table.
Source: ICF, 2015

3.11.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

The physical ~~individual~~ components ~~improvements~~ ~~comprising the Build Alternative~~ will be designed to minimize impacts related to geology and soils along the Corridor. ~~The following strategies~~ The measures listed below are applicable to the Build and Preferred Alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

3.11.5.1 Ground Shaking

Ground shaking hazards cannot be mitigated completely ~~and thus can be unpredictable~~. The following minimization strategies should be implemented to reduce potential adverse effects from ground shaking in areas where substantial risk is present:

MIN-GEO-1. Infrastructure would be designed to withstand strong ground motion. Designs typically include additional ductility in the structure. The design needed to reduce ground shaking would be determined upon for structures during subsequent stages of development, when detailed design plans are created.

MIN-GEO-2. Liquefaction potential would be reduced through site-specific methods such as soil densification or structural design.

3.11.5.2 Fault Crossings

MIN-GEO-3. Techniques to monitor track alignment as routine maintenance and the installation of ground motion warning systems would be used to reduce the effects of fault crossings.

3.11.5.3 Slope Stability/Landslides

A-GEO-4. Geotechnical studies during subsequent site-specific evaluation would assist in determining the potential for failure of natural and constructed slopes and identifying temporary and permanent slope reinforcement and protection measures where appropriate.

3.11.5.4 Soil Hazards

A-GEO-5. ~~As one or more components of the Build Alternative are selected for further design~~ A site-specific subsurface evaluation would be performed by a qualified geologist to evaluate the extent of soils susceptible to shrink-swell present ~~along the alignment~~ in the area of the physical component. Where expansive soil conditions are found and would be detrimental to ~~proposed~~ physical components ~~improvements~~, measures recommended by the geologist would be implemented in project design.

MIN-GEO-6. A subsurface evaluation would be performed prior to design and construction to evaluate the potential for corrosive soil and identify recommendations to minimize or avoid any potential effects related to the presence of such soils (including but not limited to corrosion of rails or ties).

3.11.5.5 Hazards Related to Oil and Gas Fields

Hazards from potential migration of hazardous gases due to the presence of oil fields, gas fields, or other subsurface sources will be avoided by following strict federal and state Occupational Safety & Health Administration (OSHA/CalOSHA) regulatory requirements for excavations, and consultation with the California Department of Conservation (Division of Oil and Gas) ~~and California Department of Toxic and Substances Control regarding~~ DTSC for known areas of concern. Mitigation strategies would include:

A-GEO-7. The use of safe and explosion-proof equipment during construction and testing for gases regularly.

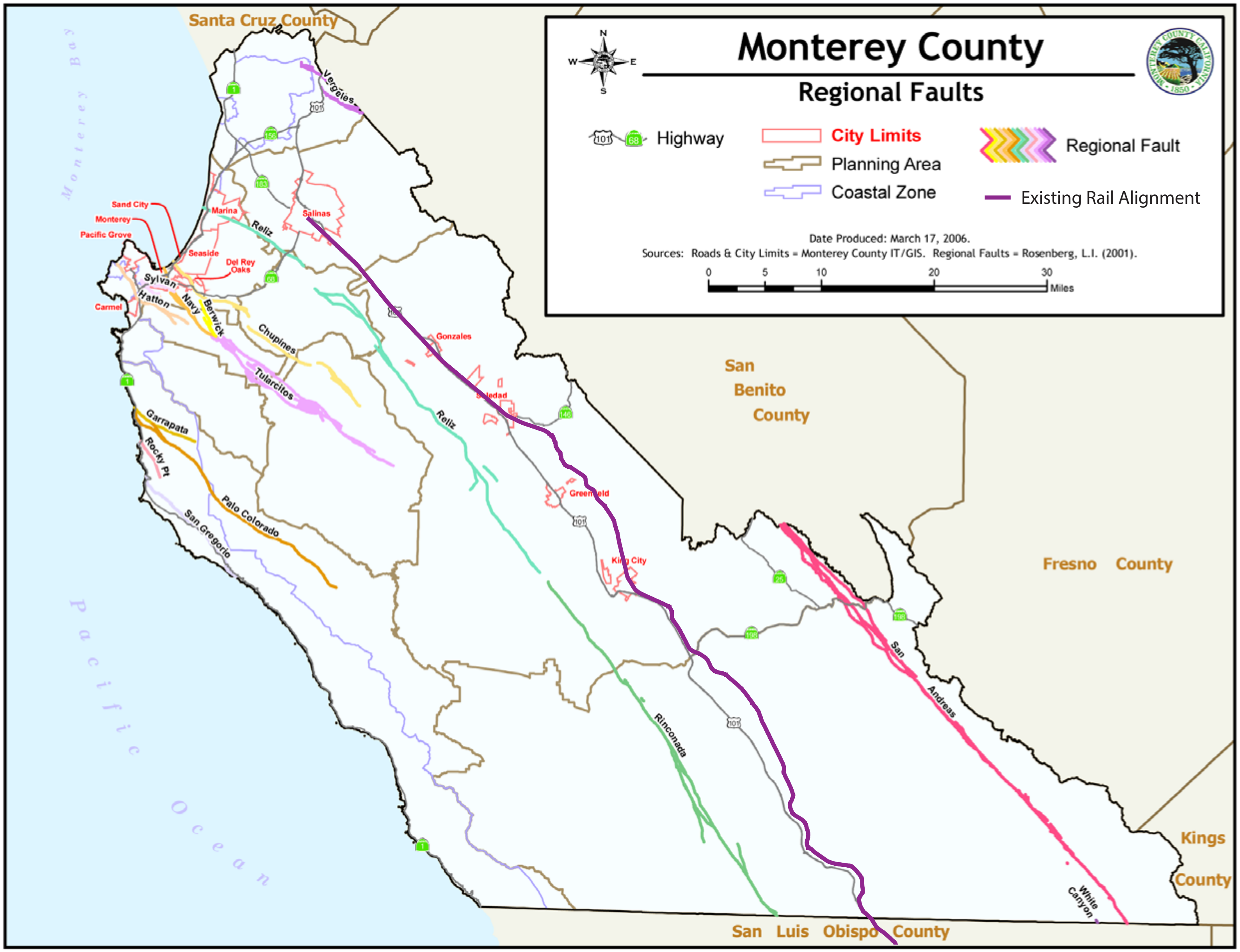
A-GEO-8. Active monitoring systems and alarms would be required in underground construction areas and facilities where subsurface gases are present.

3.11.5.6 Mineral Resources

A-GEO-9. Important mineral sites will be identified as early as possible during detailed project-level reviews and avoided where possible.

3.11.6 SUBSEQUENT ANALYSIS

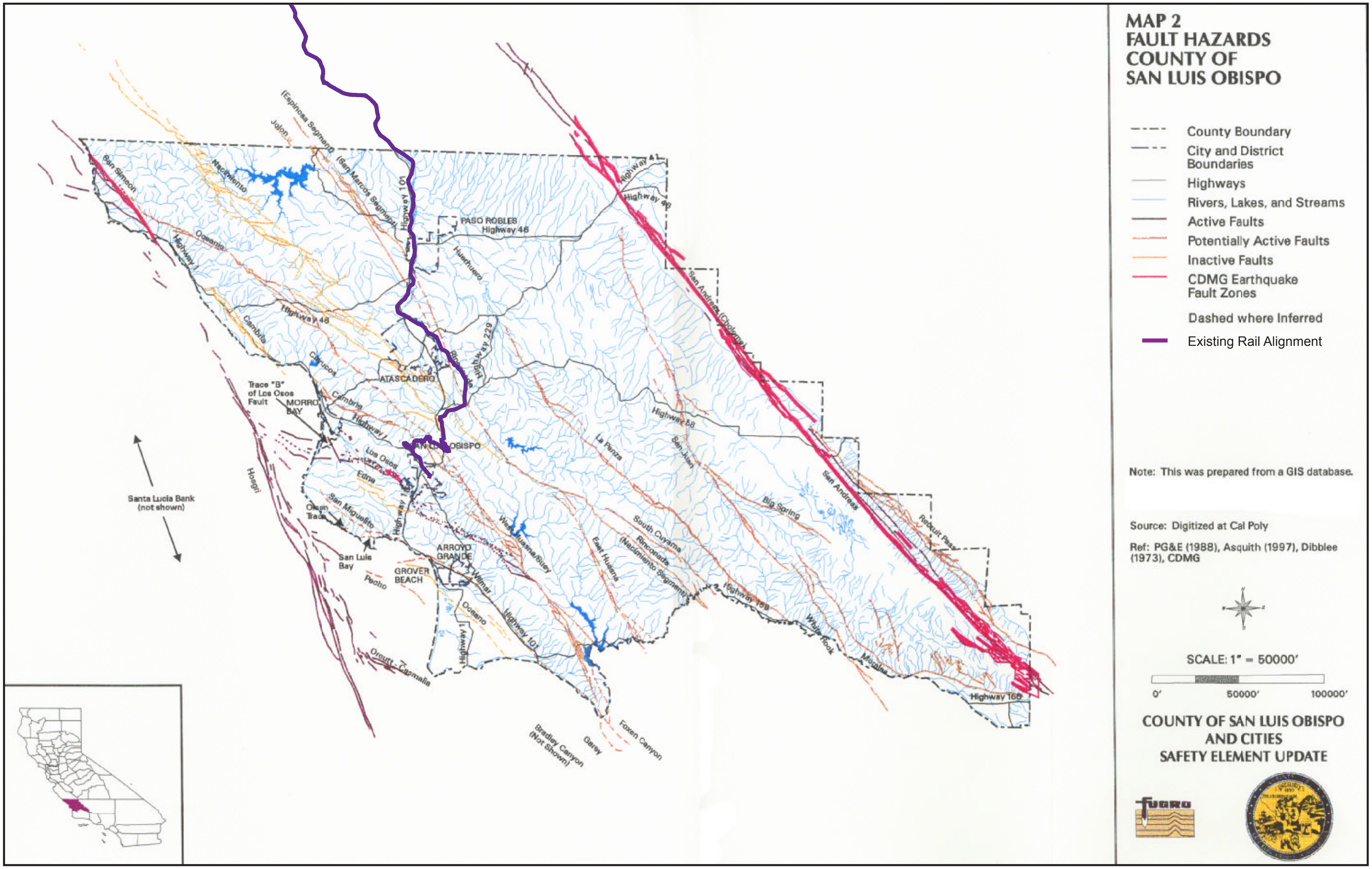
Prior to implementing ~~specific elements of the Build Alternative~~ individual components, component-specific geology, soils and minerals evaluations will be conducted. These evaluations will be used to determine if additional mitigations strategies from those discussed above ~~in **Subsection 3.11.5**~~ are applicable.



Active Fault Zones in Monterey County

Figure **3.11-1**

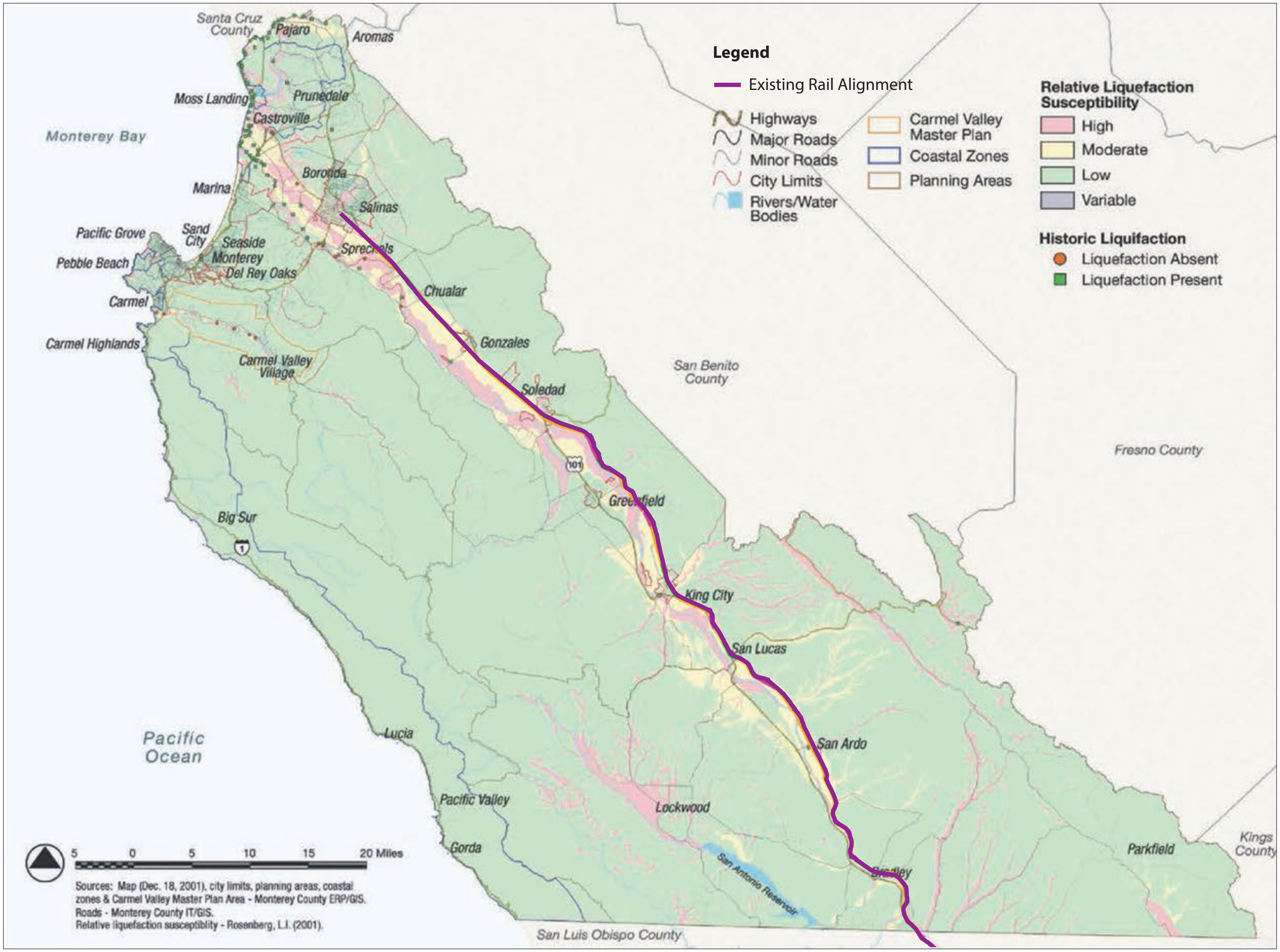
Source: Monterey County, 2004



Active Fault Zones in San Luis Obispo County

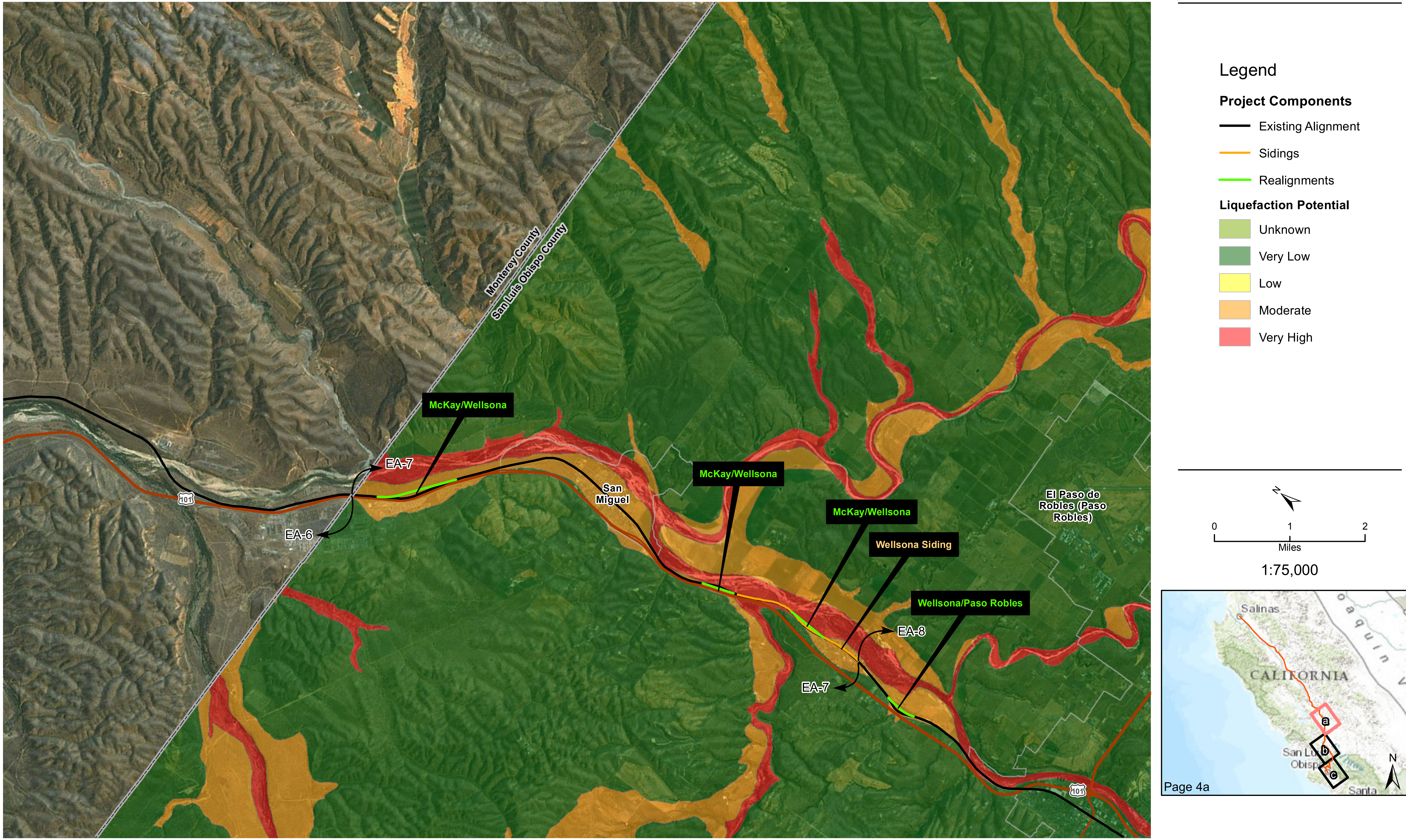
Figure **3.11-2**

Source: USGS, 2013



Monterey County Liquefaction Potential Figure **3.11-3**

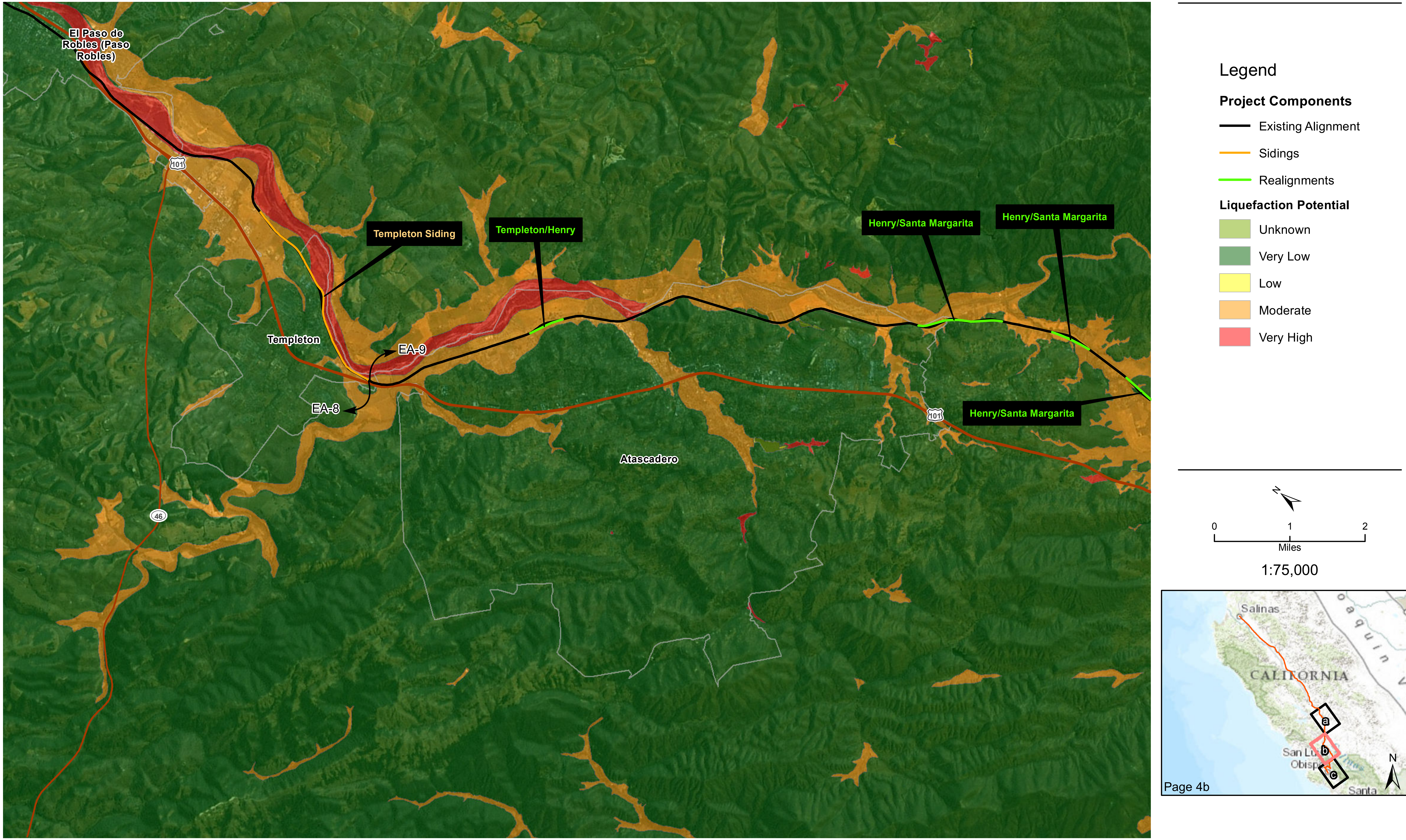
Source: Monterey County, 2004



San Luis Obispo Liquefaction Potential

Figure 3.11-4a

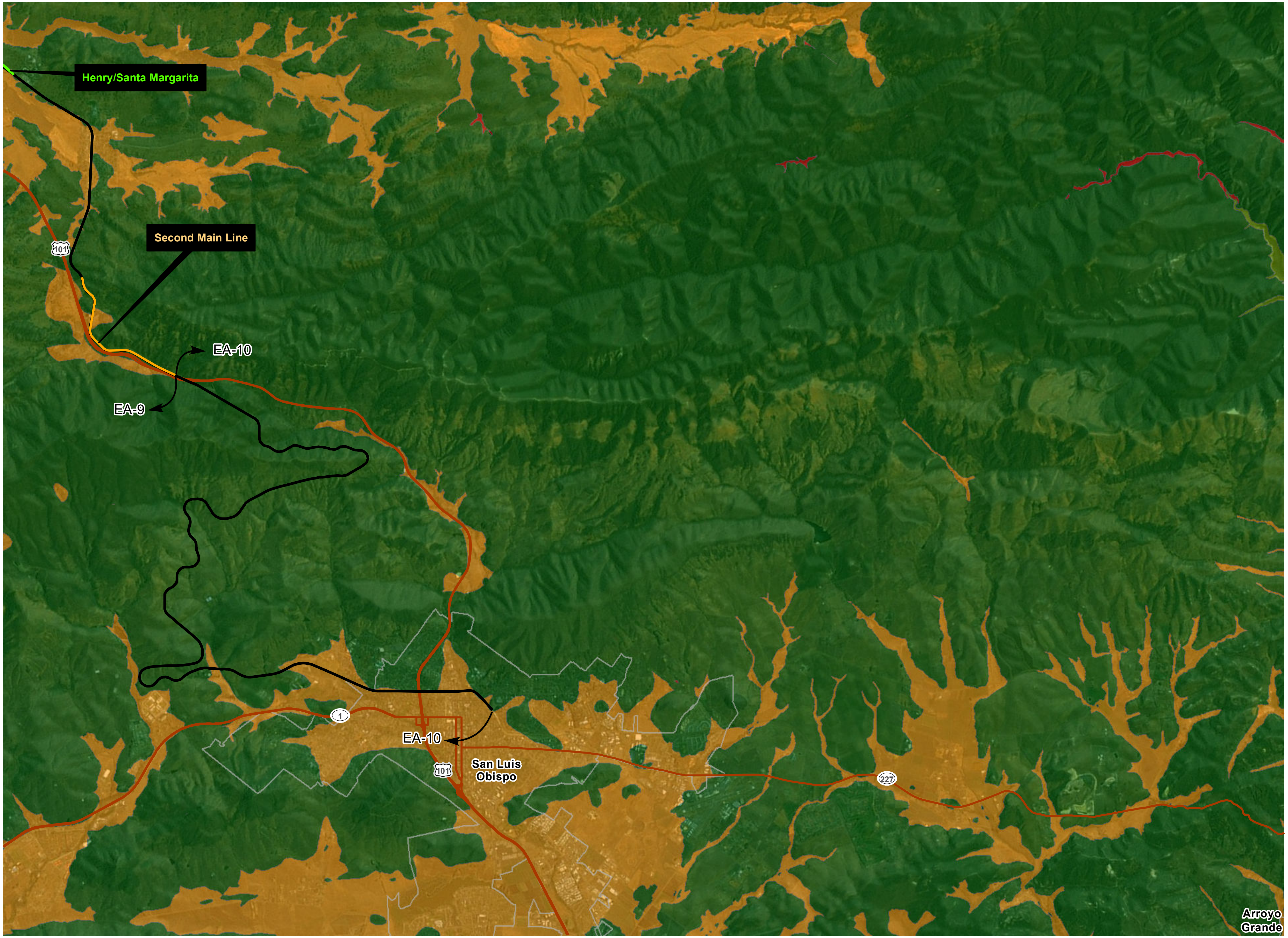
Source: ICF International, 2013



San Luis Obispo Liquefaction Potential

Figure 3.11-4b

Source: ICF International, 2013



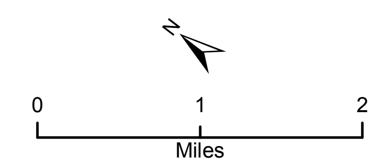
Legend

Project Components

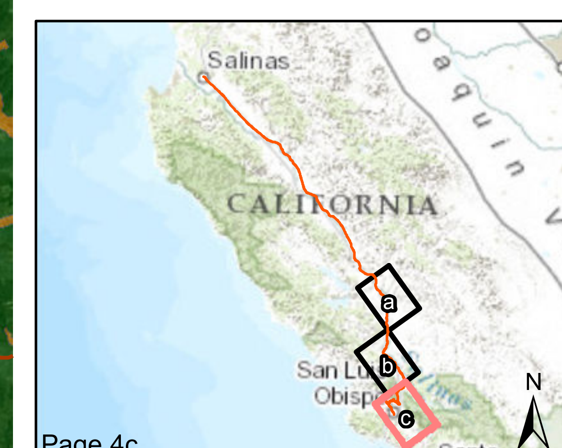
- Existing Alignment
- Sidings
- Realignments

Liquefaction Potential

- Unknown
- Very Low
- Low
- Moderate
- Very High



1:75,000



San Luis Obispo Liquefaction Potential

Figure 3.11-4c

Source: ICF International, 2013

Figure 3.11-5

Monterey County Landslide Potential

Source: Monterey County, 2004

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3.12 HYDROLOGY AND WATER RESOURCES

This section addresses the potential hydrologic and water resource impacts of the No Build and ~~Build Alternatives~~ action alternatives. Water resources analyzed include floodplains, surface waters, and groundwater.

Chapter 5.0, Comments and Coordination, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. The City of King provided several comments regarding project elements that have been incorporated into the Preferred Alternative (see comments A-3.54 through A-3.58, A-3.77 and A-3.78). **Section 3.12.2** below provides analysis of the Preferred Alternative. Individual comments I-7.2, I-7.3, and I-18.2 are also related to hydrologic conditions and water resources related to features of the Build Alternative but do not require changes to the analysis or findings.

3.12.1 REGULATORY REQUIREMENTS

3.12.1.1 Federal

Clean Water Act

The Clean Water Act (CWA) was enacted by Congress in 1972 and subsequently amended several times. It is the primary federal law regulating water quality in the United States, and has formed the basis for several state and local laws throughout the country. The key objective of the CWA is to protect water quality by regulating pollution in the nation's rivers, stream, lakes, and coastal waters. The CWA prescribed the basic federal laws for regulating discharges of pollutants as well as set minimum water quality standards for all "waters of the United States." The CWA makes the discharge of pollutants into waters of the United States unlawful without a proper permit.

Several additional mechanisms are employed to control domestic, industrial, and agricultural pollution under the CWA. At the federal level, the CWA is administered by the EPA. In California, the CWA is administered and enforced by the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs). The State of California has developed a number of water quality laws, rules, and regulations, in part to assist in the implementation of the CWA and related federally mandated water quality requirements. In many cases, the federal requirements set minimum standards and policies; the laws, rules, and regulations adopted by the state and regional boards often exceed the federal requirements.

Important sections of the CWA include:

- Section 303 and 304: Require states to promulgate water quality standards, criteria, and guidelines. Section 303(d) specifically regulates impaired water bodies and requires each state to identify waters that will fail to achieve water quality standards even after maintaining effluent standards, and to enact improvement plans. Each state must develop load-based (rather than concentration based) limits called total maximum daily loads (TMDL) for each water body and pollutant for which water quality is considered impaired. It is up to the state to prioritize development of TMDLs based on the severity of the pollution and the beneficial uses of the water body.
- Section 401: Requires a federal permit to conduct any activity that may result in a discharge to waters of the US. The applicant must obtain certification from the state that the discharge will comply with other provisions of the act.
- Section 402: Establishes the NPDES, a permitting system for point source discharges (except for dredge or fill material) of any pollutant into waters of the United States, as authorized by the CWA. RWQCBs administer this permitting program in California. The entirety of the Coast Corridor under review here (Salinas to San Luis Obispo) is within the Central Coast RWQCB based in San Luis Obispo. Section 402(p) requires NPDES permits for discharges of storm water from industrial/construction and municipal sources into storm sewer systems. The permit ensures the receiving waters will meet water quality standards.
- Section 404: Establishes a permit program for the discharge of dredge and fill materials into waters of the United States. This permit program is administered by USACE.

Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act prohibits the unauthorized obstruction or alteration of any navigable water of the United States. The construction of any structure in or over any navigable water of the United States, the excavation from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters is unlawful unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army. The instrument of authorization is designated a Section 10 permit.

Flood Disaster Protection Act

The Flood Disaster Protection Act of 1973 requires flood insurance for the protection of property located in Special Flood Hazard Areas (SHFAs). Flood-prone areas are identified and flood insurance is provided to residents and businesses in those areas.

Executive Order 11988

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. The Executive Order requires federal agencies to avoid short- and long-term impacts resulting from the modification and development of floodplains to the maximum extent feasible.

3.12.1.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. The law gives responsibility to the SWRCB and the RWQCBs to establish the water quality standards (objectives and beneficial uses) required by the CWA. Additionally, the SWRCB and RWQCBs regulate discharges to ensure compliance with water quality standards. In California, Regional Boards designate the beneficial uses for all water body segments in their jurisdictions, and then set criteria necessary to protect these uses.

California Fish and Game Code, Section 1602

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream, which CDFW typically considers to include riparian vegetation. Any proposed activity in a natural stream channel that would adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SAA) with CDFW prior to commencing work in the stream. However, prior to authorizing such permits, CDFW typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

State Agency Drought Declarations

On August 14, 2014, the CPUC directed all state water utilities to achieve compliance with SWRCB conservation efforts. On March 17, 2015, the State Water Resources Control Board, noting continued drought conditions, adopted additional emergency measures to conserve state water resources.

3.12.1.3 Local

City of Salinas General Plan

The City of Salina General Plan sets forth policies intended to ensure a safe and adequate water supply for community uses and to encourage the conservation of water resources. Specific policies aim to maintain and restore natural watersheds to recharge the aquifers and ensure the viability of the ground water resources. Cooperation with the SWRCB and the RWQCB is encouraged to address poor water quality in the area. The General Plan also promotes regional efforts to protect and enhance water quality.

City of Soledad General Plan

The City of Soledad General Plan sets forth policies requiring projects to allocate land as necessary for the purpose of retaining flows and/or for the incorporation of mitigation measures for water quality and supply impacts related to runoff. Mitigation related to controlling pollutant loads in urban storm water runoff must be coordinated with responsible agencies, such as the RWQCB.

City of King (King City) General Plan

The City's General Plan includes goals and policies assuring groundwater resources are available to the city and that their quality is not degraded. Specific policies aim to preserve and protect all groundwater recharge areas from sources of pollution, and to regulate development in such areas to ensure that recharge capabilities are not significantly diminished.

City of El Paso de Robles (Paso Robles) General Plan

The City of El Paso de Robles General Plan contains goals and policies aiming to ensure the city has an adequate supply of water. Specifically, the development and implementation of innovative water provision and conservation programs is encouraged, particularly through non-traditional methods, such as storm drainage system design integrating Low-Impact Development features to reduce hydromodification from development and other improvements to recharge groundwater.

City of San Luis Obispo General Plan

The City of San Luis Obispo General Plan includes goals, policies, and programs related to water supply and demand, with a focus on ensuring a long-term, reliable water supply to meet both current and future water demand associated with development envisioned by the General Plan.

3.12.2 METHODS OF EVALUATION

The components of the ~~Build Alternative~~ action alternatives would have varying potential to result in environmental effects related to hydrology and water resources. The study area for hydrology and water resources is defined as the existing railroad ROW, the potential locations of the physical improvements, and conservative buffer areas around the ~~proposed~~ physical components ~~improvements~~. ~~Below, this section discusses how each component was evaluated and what study area was considered.~~

3.12.2.1 Impact Evaluation by Resource

Surface Waters

To determine potential impacts to hydrologic features, including streams, rivers, canals, by the ~~proposed physical improvements~~ project components, national hydrography data from the United States Geologic Survey (USGS) was used.

Permanent and temporary impacts were located by identifying where ~~proposed~~ physical components ~~improvements~~ would intersect known flowlines. From this, the size of the impact was computed in linear feet in the jurisdictional areas.

Groundwater

Impacts to groundwater resources were evaluated qualitatively by examining the potential for the physical components ~~improvements~~ to interfere with groundwater recharge or to deplete groundwater supplies. Groundwater resources serving communities along the alignment were identified, along with any potential impacts the physical components ~~improvements~~ may have. For this analysis, it is assumed that among all ~~proposed~~ physical components ~~improvements~~, only proposed new station areas would have any significant potential to impact groundwater resources due to the likely addition of impervious surface area. Other proposed components ~~improvements~~, such as new tracks, would not introduce substantial new impervious areas.

Floodplain

To determine the extent to which proposed physical improvements could be located within areas of subject to heightened flood risk (i.e., 100-year floodplains or other SFHAs), Federal Emergency Management Agency (FEMA) flood maps were consulted. The analysis computes acreages of proposed improvements within these areas subject to heightened risk of flood ~~such areas~~.

Impaired Bodies

Impacts to impaired bodies of water within the exiting alignment and resulting from the proposed physical components ~~improvements~~ were identified by using the US EPA 303(d) list. Any impacted surface waters were cross-checked with the 303(d) to determine if they are currently considered impaired. The linear feet of impaired water body were calculated for each of the physical improvements.

Erosion

Potential erosion impacts were evaluated by using GIS data and aerial mapping to identify proposed improvements that could occur in areas with steep slopes. Areas near steep slopes are more likely to experience erosion, particularly if proposed components ~~improvements~~ would require substantial grading in such areas.

3.12.3 AFFECTED ENVIRONMENT

3.12.3.1 Hydrological Resources in the Study Area

Surface Waters

Surface waters, including streams, lakes, rivers, ponds, and reservoirs, provide critical habitat for fish and wildlife, offer locations for groundwater recharge, and direct pathways connecting resources. They also help convey flood waters, facilitating and maintaining water supply. (See **Section 3.13, Biological Resources and Wetlands**, for a discussion of wetlands and native species habitats).

The major surface water resource within and immediately adjacent to the study area is the Salinas River. The Salinas River stretches approximately 184 miles north/northwest, from the Santa Lucia and La Panza Mountain Ranges in San Luis Obispo County, through the Salinas Valley, and finally terminating in Monterey Bay near Castroville. The river meanders amidst 230,000 acres through the Salinas Valley floor, fed by several tributaries along the way. The river flow averages approximately 282,000 acre-feet per year (AFY). Surface waters in the study area are shown in **Figure 3.12-1**.

Between Salinas and San Luis Obispo, the existing railroad crosses or is in close proximity to a number of other named streams, including the San Antonio River, Nacimiento River, Jack Creek, Santa Margarita Creek, Paso Robles Creek, Atascadero Creek, Chualar Creek, Stonewall Creek, Chalone Creek, Pancho Rico Creek, Sargent Creek, San Lorenzo Creek, Pine Creek, San Marcos Creek, Yerba Buena Creek, Paloma Creek, Graves Creek, Brizzolara Creek, Stenner Creek, and several unnamed creeks.

Groundwater

Rainfall, snowmelt, and other types of water infiltration may penetrate the ground surface moving downward through spaces between soil particles, eventually encountering an impermeable layer. At this impermeable layer water begins to build up, ultimately becoming an aquifer. A groundwater basin contains one large aquifer or several connected and interrelated aquifers. Groundwater basins are distinguished by natural or artificial divides, such as impermeable layers, in the water table. Precipitation as well as artificial infiltration can serve to recharge the groundwater basin. Groundwater recharge is most effective in areas where surface water is easily able to penetrate into the ground, such as along undeveloped river channels or beneath lakes.

Groundwater is an important resource to Monterey County. Overall, the groundwater is considered to be of good quality; however, localized groundwater quality issues exist, resulting from seawater intrusion in northern Monterey County (not an issue for the inland Salinas Valley) and nitrate contamination. Through Monterey County and parts of San Luis Obispo County, the Coast Corridor study area lies within the Salinas River Basin, extending a length of approximately 130 miles. The Salinas River Basin consists of one large hydrologic unit consisting of four subareas, each containing their own hydrogeological and recharge characteristics. Water can move freely between them as they are not separated by any horizontal flow barrier. Groundwater resources in the study area are shown in **Figure 3.12-2**.

Groundwater is the primary water resource in the Salinas Valley and supplies a variety of uses, including irrigation, as well as domestic, municipal, and industrial purposes. In the Salinas Valley, groundwater recharge occurs primarily through the Salinas River, Arroyo Seco River, and some infiltration from rainfall. Lake San

Antonio serves in part to collect water to recharge the San Antonio River, a tributary to the Salinas River. Some infiltration from small streams and inflow from bedrock areas adjoining the basin does occur, but to a much lesser extent.[1]

San Luis Obispo County obtains approximately 80 percent of its water supply from groundwater.[2] As of 2014, Paso Robles relied~~s~~ entirely on groundwater, drawn from a large aquifer known as the Paso Robles Basin and the Salinas River Underflow. However, in 2015, Paso Robles is scheduled to begin receiving surface water (4,000 AFY) from the Lake Nacimiento Water Project.[3]

The City of San Luis Obispo obtains water from Santa Margarita Lake, Whale Rock Reservoir, Nacimiento Reservoir, recycled water from the city's WRF, and groundwater. The city's groundwater basin is relatively small and recharges quickly after rainfall events. Currently, the city operates one potable and one non-potable well. Two of the city's largest producing wells were shut down after elevated nitrate levels were detected. The potable well produces approximately 11 acre-feet per minute (AFM), about 2 percent of the city's total water use. The non-potable well serves construction activities in the area, such as soil compaction and dust control. Two additional wells are operated by the Laguna Lake Golf Course that serve to help meet irrigation demands at the course. The remainder of the irrigation demand for the golf course is met by the WRF.[4]

Drought

A prolonged drought period has affected flows in local waterways. For most of 2014 and year 2015 to date, the United States Drought Monitor has noted "exceptional drought" conditions in San Luis Obispo County.[5]

Floodplains

Floodplains are flatlands adjacent to rivers, lakes, and oceans that are subject to flooding when the nearby water body overflows, resulting in a variety of geomorphic and hydrological processes. A total of 49 acres of SFHAs have been designated within the Coast Corridor study area, and are shown in **Figure 3.12-3**.

[1] County of Monterey, 2006, pp. 4.3-2-4.3-6

[2] County of San Luis Obispo, 2009, p. 3.7-1

[3] City of Paso Robles, 2014

[4] City of San Luis Obispo, , 2010, pp. 8.1-8.4

[5] United States Department of Agriculture, National Drought Mitigation Center, 2015.

Water Quality Issues

Impaired Bodies

Impaired water bodies are those that do not meet water quality standards after application of effluent limits under the CWA. Water bodies with impaired water quality in the vicinity of the Coast Corridor study area include Atascadero Creek, Chualar Creek, Salinas River, San Lorenzo Creek, and Stenner Creek.[6] These water bodies are considered impaired because they exceed the limits for fecal coliform, e. coli, low dissolved oxygen, boron, chloride, electrical conductivity, sodium, pH, chlordane, pesticides, total dissolved solids, toxaphene, nitrate, polychlorinated biphenyls (PCBs), enterococcus, diazinon, chlorpyrifos, dichlorodiphenyldichloroethane (DDD), and a number of other pollutants.

Erosion Potential

Erosion is the slow deterioration of land surface by flowing water, wind, waves, and corrosion, typically leading to soil loss and degraded water quality. Soil erosion can occur in areas near steep slopes, and during construction activities that involve grading and other earth moving activities. See **Section 3.11 Geology, Soils, and Minerals** for an in-depth discussion of soil erosion in Monterey and San Luis Obispo Counties.

Most of the Coast Corridor study area has low soil erosion potential; very few areas are identified as having moderate to severe erosion potential. The topography of the existing Coast Corridor study area is predominately flat; however, several portions of the alignment run adjacent to areas with steeper topography, where any ground disturbance would increase the potential for erosion and sedimentation.

3.12.4 ENVIRONMENTAL CONSEQUENCES

3.12.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing rail operations and physical components, and assumes the perpetuation of existing freight and passenger service between Salinas and San Luis Obispo. The only physical component ~~improvement~~ expected under the No Build Alternative would be the installation of PTC, which would provide increased safety for freight and passenger trains. PTC equipment would likely be installed within the existing railroad ROW or

[6] California EPA, 2013

would modify existing signaling equipment, and train operations would continue as at present ~~it currently does~~. As a result, no new impacts to hydrology and water resources would ~~not change under current operation and no new impacts would~~ be expected to occur.

3.12.4.2 Build Alternative

Surface Waters/Impaired Water Bodies

The Build Alternative could result in potential proximity impacts to surface waters through runoff during construction activities, operation-related pollution in areas immediately adjacent to surface waters, and potential surface water crossings. **Table 3.12-1** below shows potential impacts to surface waters resulting from ~~various elements~~ the components of the Build Alternative. Potential temporary and permanent surface water impacts are reported as linear feet, which represents areas in which Build Alternative components would come within close proximity to surface water resources. For example, construction activities occurring to upgrade existing alignment #1 would temporarily be in close proximity to 83 linear feet of surface waters. Once operational, these upgrades would be within the existing railroad ROW and would not be in close proximity to any water resources. As such, no permanent impacts are reported.

Table 3.12-1 Build Alternative: Potential Proximity Impacts to Surface Waters

Build Alternative Components	Surface Water Impacts (linear feet)	
	Temporary	**Permanent**
Salinas Powered Switch	0	0
Upgrades to Existing Alignment Section #1	83	0
Spence Siding Extension	130	83
Upgrades to Existing Alignment Section #2	2,411	0
Gonzales Powered Switch	0	0
Soledad Powered Switch	0	0
Soledad New Passenger Station	0	0
Harlem/Metz Curve Realignments	302	0

Build Alternative Components	Surface Water Impacts (linear feet)	
	Temporary	**Permanent**
Chalone Creek New Siding	0	0
Upgrades to Existing Alignment Section #3	120	0
Coburn Curve Realignments	61	0
King City Siding Extension	133	100
King City New Passenger Station	0	0
King City Powered Switch	0	0
Upgrades to Existing Alignment Section #4	0	0
MP 165 Curve Realignment	403	100
San Lucas New Siding	0	0
Upgrades to Existing Alignment Section #5	1,732	0
MP 172 Track Realignment	785	150
San Ardo Powered Switch	0	0
Getty/Bradley Curve Realignments	1,636	417
Bradley Siding Extension	109	109
Bradley Powered Switch	0	0
Upgrades to Existing Alignment Section #6	1,076	0
Upgrades to Existing Alignment Section #7	287	0
McKay/ Wellsona Curve Realignments	0	0
McKay East Powered Switches	0	0
Wellsona New Siding	123	124

Build Alternative Components	Surface Water Impacts (linear feet)	
	Temporary	Permanent
Upgrades to Existing Alignment Section #8	612	0
Wellsona/ Paso Robles Curve Realignments	0	0
Templeton Siding	267	227
Templeton/ Henry Curve Realignments	0	0
Upgrades to Existing Alignment Section #9	1,846	0
Henry/Santa Margarita Curve Realignment	5,719	305
Santa Margarita Powered Switch	0	0
Cuesta Second Main Track	5,986	749
Upgrades to Existing Alignment Section #10	3,620	0
Totals[a]	**27,442**[a]	**2,264**[a]

Note: a) Rounded to the nearest whole number.
Source: ICF, 2013

The Build Alternative would result in some potential proximity impacts to surface waters, including potential crossings of 17 streams and rivers ~~on~~ at 117 ~~occurrences~~ locations.[7] More specific construction-period and operational impact discussions are provided below.

Construction-Period Effects

Construction activities could result in potential proximity impacts to approximately 5.2 miles of surface waters within the study area. Construction activities may also result in potential proximity impacts to water quality along the corridor. During construction, erosion and runoff could result in an increased risk of sedimentation in

[7] More than 17 streams may be crossed; however, of all the streams crossed in the study area, only 17 are named.

nearby surface waters. This mainly results from the proximity of construction work and associated staging areas, vehicle ingress/egress, etc. to surface waters. The Henry/Santa Margarita Curve Realignment and the Cuesta Second Main Track would both affect approximately one mile of surface waters each during construction activities. Construction of the King City Siding Extension could result in a potential temporary impact to the San Lorenzo Creek; however, this impact would extend for only 133 linear feet. Upgrades to Existing Alignment section #10 would potentially impact just over a half mile (3,620 linear feet) of surface waters during construction activities. Following construction work, these impacted areas would be restored back to their original condition.

Operational Effects

Five (5) of the seventeen (17) streams and/or rivers that would be crossed by one or more of the elements of the Build Alternative are considered impaired. Of the impaired water bodies in the Corridor, San Lorenzo Creek is the only body of water that is not currently crossed by the existing alignment. The proposed King City Siding Extension is the only ~~proposed physical improvement~~ Build Alternative component that would add a new crossing of San Lorenzo Creek.

Once operational, the number of daily trains on the corridor would increase, and there would be increased potential for operation-related pollutants to enter the environment. Potential permanent proximity impacts could occur to approximately 0.4 miles (2,264 linear feet) of surface waters. Like construction-period effects, these impacts would result from the proximity of the ~~various proposed improvements~~ Build Alternative components (new sidings, siding extensions, etc.) ~~and subsequently close proximity of trains~~ to surface waters. ~~The King City Siding Extension has the potential to result in impacts to the San Lorenzo Creek for approximately .02 mile (100 linear feet) once operational.~~ Operation of the Cuesta Second Main Track could result in approximately 0.15 mile (749 linear feet) of potential impacts to surface waters. All of the remaining new sidings/siding extensions would have potential impacts to already affected surface waters in a length of less than one tenth of a mile in the vicinity of the alignment.

Erosion Potential

Construction-Period Effects

Several ~~elements~~ components of the Build Alternative could result in potential erosion impacts during construction. ~~Particularly~~ The Harlem/Metz Curve Realignment, New Chalone Creek Siding, Coburn Curve Realignments, Bradley Siding, and Getty/Bradley Curve Realignments are located near steep slopes and could result in potential erosion impacts. The Cuesta Second Main Track is proposed in an area near steep topography; however, potential for soil erosion is low in this area because it is forested and agricultural uses are negligible. The Harlem/Metz and Coburn Curve Realignments would move the track farther away from sloping hillside areas. These realignments, along with the Chalone Creek New Siding, would be located on relatively flat land, reducing the potential for erosion and potentially creating a beneficial effect.

Operational Effects

Once operational, the Build Alternative would have minimal potential to result in erosion ~~as erosion~~ because it is typically associated with grading and other land disturbing activities that occur during construction.

Groundwater

Construction-Period Effects

Little groundwater use is anticipated for construction of all of the ~~proposed~~ physical components ~~improvements~~. Curve realignments, siding extensions, new power switches, and the second main track would have little to no impact to groundwater as construction activity associated with these components ~~improvements~~ does not require water. Construction of the new stations and concrete platforms would require water. Water use may also be needed during construction activities for dust control and other best management practices (BMPs); however, water use would be minimal and temporary. Furthermore, construction activities would truck water to the sites rather than ~~need to~~ withdraw it from wells, which would have no impact to groundwater resources located within the study area. Since permanent sources of water are not needed for construction, new wells would not be developed and the study area groundwater would not be depleted.

Operational Effects

Both Soledad and King City get municipal water from groundwater. The new station areas proposed in Soledad and King City would require some new water use to operate restroom facilities and offer drinking water. Water use at existing stations (Salinas, San Luis Obispo, and Paso Robles) may increase as ridership is projected to increase (add 124,000 annual riders by 2020)[8] with the improved Coast Corridor service. Salinas draws at least a portion of its water from groundwater resources and Paso Robles relies completely on groundwater for its municipal water as of 2014. However, water use is generally minimal as the existing stations ~~do not offer~~

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[8] Caltrans Division of Rail, 2013b

~~shower facilities~~ only supply water for restroom and drinking water amenities. Therefore, although increased operational demand for groundwater may occur with the ~~proposed physical improvements~~ Build Alternative components, no significant increase in use is anticipated.

Floodplain

In the study area, 100-year flood hazard areas (or SFHAs) exist around flat lands surrounding the Salinas River and creeks in San Luis Obispo County. Portions of the existing alignment are located within the 100-year floodplain. Portions of the railway within the floodplain are at risk of being inundated and potentially impassible during a storm event. **Table 3.12-2** below lists the ~~element~~ component of the Build Alternative that would be located within the designated 100-year floodplain.

Table 3.12-2 Build Alternative: Acreage of Proposed Improvements within 100-Year Floodplain

Build Alternative Components	100yr Floodplain (Acres)	
	Temporary	**Permanent**
Salinas Powered Switch	0	0
Upgrades to Existing Alignment Section #1	0	0
Spence Siding Extension	0	0
Upgrades to Existing Alignment Section #2	5	0
Gonzales Powered Switch	0	0
Soledad Powered Switch	0	0
Soledad New Passenger Station	0	0
Harlem/Metz Curve Realignments	61	14
Chalone Creek New Siding	0.5	.03
Upgrades to Existing Alignment Section #3	1	0
Coburn Curve Realignments	20	1.5
King City Siding Extension	1	1
King City New Passenger Station	0	0
King City Powered Switch	0	0

Build Alternative Components	100yr Floodplain (Acres)	
Upgrades to Existing Alignment Section #4	8	0
MP 165 Curve Realignment	6	1
San Lucas New Siding	0	0
Upgrades to Existing Alignment Section #5	6	0
MP 172 Track Realignment	6	.01
San Ardo Powered Switch	0	0
Getty/Bradley Curve Realignments	19	3
Bradley Siding Extension	0	0
Bradley Powered Switch	0	0
Upgrades to Existing Alignment Section #6	2	0
Upgrades to Existing Alignment Section #7	2	0
McKay/ Wellsona Curve Realignments	10	0.2
McKay East Powered Switches	0	0
Wellsona New Siding	1	0.2
Upgrades to Existing Alignment Section #8	13	0
Wellsona/ Paso Robles Curve Realignments	0.9	0
Templeton Siding	6	3
Templeton/ Henry Curve Realignments	0	0
Upgrades to Existing Alignment Section #9	10	0
Henry/Santa Margarita Curve Realignment	19	4
Santa Margarita Powered Switch	0	0
Cuesta Second Main Track	0	0
Upgrades to Existing Alignment Section #10	2	0
Totals[a]	**200**	**29**

Note: a Rounded to the nearest whole number.

Source: ICF, 2013

Elements of the Build Alternative would be located within approximately 229 acres of the 100-year flood zone, putting them at risk of inundation by flooding. Temporary inundation can result in travel delays. Over time, frequent temporary inundations could result in damage to tracks or other rail facilities.

Construction-Period Effects

Approximately 200 of the acres potentially affected during construction of the Build Alternative would be within SFHAs ~~only during construction activities~~. Temporary staging areas ~~associated with~~ for construction of the Coburn, Getty/Bradley, Harlem/Metz, and Henry/Santa Margarita Curve Realignments would result in the majority of temporary acreage identified as potentially within SFHAs. These areas would only be at risk of flood impacts during the construction period, and measures could be taken to reduce the likelihood of impacts (storing equipment on high ground, etc.).

Operational Effects

~~The remaining~~ Approximately 29 acres of ~~identified within~~ the flood zone would ~~be required for implementation of specific physical improvements~~ potentially be affected during operation of the Build Alternative. Almost half of this amount (14 acres) ~~is associated with the potential construction of~~ would be from several segments of the Harlem-Metz curve realignment located near a stretch of the Salinas River. Given the relatively small amount of land that would be permanently affected within the existing 100-year flood zone and that impacts to the flood zone would be spread across a relatively wide geography within the study area, the Build Alternative would not result in a substantial increase in flood elevations or substantially shift the location of flood zones. However, these areas would be at risk of flood inundation during a severe weather event.

3.12.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the King City siding extension and passenger station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile “island” of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects to hydrology and water quality for the Preferred Alternative would be the same as the Build Alternative except for the areas where the modified or excluded components are located. The discussions below assess hydrology and water quality of the modified or excluded components.

Surface Waters/Impaired Water Bodies

The Preferred Alternative revises the King City siding extension to extend on the north side of the existing siding only. The siding would extend from MP 156.38 to 159.19, resulting in a siding 2.81 miles or about 14,800 feet in length. In the Build Alternative, construction of the southern portion of the King City siding extension would have potentially resulted in both temporary and permanent impacts to the San Lorenzo Creek. Because the Preferred Alternative revises the King City siding extension to extend only on the north end, the revised siding extension would not result in impacts to surface waters during construction and operation (refer to **Table 3.12-3**).

The Preferred Alternative excludes four curve realignments in San Luis Obispo County. One of the excluded realignments (Henry/Santa Margarita) had the potential to impact approximately one mile of surface waters during construction, and about one tenth of a mile during operation. Because this curve realignment would not be constructed as part of the Preferred Alternative, these impacts would not occur.

Floodplain

Components of the Build Alternative (the King City siding extension and three of the San Luis Obispo County curve realignments) would have resulted in construction-period and operational impacts to floodplains. Modifications to and the exclusion of these components incorporated in the Preferred Alternative would avoid these impacts (refer to **Table 3.12-3** below).

Table 3.12-3 Summary of Changes in Potential Impacts to Hydrology and Water Quality

Proposed Components	No Build Alternative		Build Alternative				Preferred Alternative			
	Surface Water Impacts (linear feet)	100yr Floodplain (Acres)	Surface Water Impacts (linear feet)		100yr Floodplain (Acres)		Surface Water Impacts (linear feet)		100yr Floodplain (Acres)	
			Temp	Perm	Temp	Perm	Temp	Perm	Temp	Perm
King City Siding Extension	N/A		133	100	1	1	0	0	0	0
King City New Passenger Station	N/A		0	0	0	0	0	0	0	0
McKay/ Wellsona Curve Realignments	N/A		0	0	10	0.2	None. This component is not part of the Preferred Alternative.			
Wellsona/ Paso Robles Curve Realignments	N/A		0	0	0.9	0	None. This component is not part of the Preferred Alternative.			
Templeton/ Henry Curve Realignments	N/A		0	0	0	0	None. This component is not part of the Preferred Alternative.			
Henry/Santa Margarita Curve Realignment	N/A		5,719	305	19	4	None. This component is not part of the Preferred Alternative.			

Note: All other proposed components are the same between the Build and Preferred Alternatives, thus the impacts would be the same and are not repeated in this table.

Source: ICF, 2015

3.12.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

~~The Build Alternative will be designed to minimize impacts to biological resources along the Corridor.~~ The measures listed below are applicable to the Build and Preferred Alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

Surface Waters

Strategies to reduce potential impacts on surface waters include the following:

~~A-BIO-1~~ A-HYD-1. ~~Many of the potential impacts to water resources could be avoided through~~ Where feasible, project-level design would avoid adverse impacts to water resources. For example, siding extension impact areas were analyzed assuming one mile extension areas could occur entirely on one side or the other. In the event that one end of a siding extension would impact a surface water body, the siding extension would be designed on the opposite side and away from the water resource area~~, thus removing the impact altogether~~.

~~MIN-BIO-2~~ MIN-HYD-2. NPDES permits and Storm Water Pollution Prevention Plans (SWPPP) would be obtained prior to implementing ~~elements~~ components of the Build or Preferred Alternative. ~~California~~ NPDES permit requirements would be followed and BMPs would be implemented as mandated. These would include measures to provide permeable surfaces, where feasible, and to retain and treat stormwater onsite using catch basins and treatment wetlands. ~~These measures will be particularly valuable in areas where new stations would be constructed and/or paved parking areas would be developed or expanded~~ The SWPPP would include BMPs to minimize potential sediment transport due to construction activities, including obligatory erosion control techniques, stormwater management, and channel dewatering for all stream/river crossings. The SWPPP would also include measures to control the overall amount and quality of stormwater runoff to regional systems. Potential BMPs may include the following:

- Practices that minimize contact between construction materials, equipment, and maintenance supplies with stormwater;
- Practices that reduce soil erosion including watering for dust control, perimeter silt fences, placement of rice straw bales, sediment basins, and soil stabilization; and
- Practices that maintain water quality including filtration, detention, and retention systems, constructed wetland systems, biofiltration/bioretention systems, grass buffer strips, ponding areas, organic mulch layers, planting soil beds, sand beds, or vegetated systems (biofilters) such as vegetated swales and grass strips designed to convey and treat either shallow flow (swales) or sheerflow (filter strips) runoff.

~~MM-BIO-3~~ **MM-HYD-3**. The project sponsor would obtain permits required under Sections 401 and 404 of the CWA and comply with mitigation measures required in the permits. Mitigation measures may include compensation for habitat loss involving habitat restoration, reconstruction onsite, or habitat replacement offsite, with the ultimate goal of ensuring minimal impact to surface water quality.

~~MIN-BIO-4~~ **MIN-HYD-4**. ~~For any water body designated as Navigable~~ If required, the project sponsor would comply with any permit conditions required under Section 10 of the Rivers and Harbors Act ~~would be adhered to~~.

~~MIN-BIO-5~~ **MIN-HYD-5**. If required, the project sponsor would secure a Lake or Streambed Alteration Agreement ~~would need to be obtained~~ for any work that would take place along the banks of surface water bodies.

~~MIN-BIO-6~~ **MIN-HYD-6**. The project sponsor would manage potential fuel or other spills and a spill prevention and emergency response plan would be developed and implemented.

Floodplains

Strategies to reduce potential impacts on floodplains should include the following:

~~A-BIO-7~~ **A-HYD-7**. Prior to implementing physical components ~~improvements~~ that would introduce new structures in the study area, such as curve realignments, further evaluation of potential 100-year flood risk areas would be conducted. Construction of facilities within floodplains would be avoided where feasible, and floodplains temporarily impacted by construction activities would be restored as much as possible so they can function as before.

~~MIN- BIO-8~~ **MIN-HYD-8**. Where avoidance is infeasible, the footprint of facilities within the floodplain would be minimized to the extent possible. All opportunities for redesign or modification to minimize flooding risk and potential harm to or within the floodplain would be assessed. For instance, siding extensions can be designed to either extend from the north or south end of the existing siding, potentially avoiding a flood-prone area.

Groundwater

Strategies to reduce potential impacts from construction and operation of the physical components ~~improvements~~ on groundwater resources should include the following:

~~A-BIO-9~~ **A-HYD-9**. Design facilities that are elevated and/or permeable so as to not affect recharge potential where construction is required in areas of potentially substantial groundwater discharge or recharge.

~~MIN-BIO-10~~ **MIN-HYD-10**. Minimize development of facilities in areas that have substantial groundwater discharge or that would affect recharge.

~~MM-BIO-11~~ **MM-HYD-11**. Obtain waste discharge permits where required.

~~MIN-BIO-12~~ **MIN-HYD-12**. Obtain a NPDES permit and implement permit requirements, as well as BMPs that would control the release of contaminants near areas of surface water or groundwater recharge.

~~MIN-BIO-13~~ **MIN-HYD-13**. Consider use and retention of native materials with high infiltration potential at the ground surface in areas that are critical to infiltration for groundwater recharge.

3.12.6 SUBSEQUENT ANALYSIS

Additional analysis to further identify potential impacts on hydrology and water resources would be needed. The subsequent analysis would include the following;

- Further assessment of potential construction and facility impacts on surface waters and hydrology.
- As specific locations and facility designs are developed, further analysis of potential impacts on floodplains.
- Field surveys of potential water impacts to further analyze potential impacts on water quality, obtain required permits from the appropriate agencies, and develop suitable BMPs.

- Assessment of significant alteration in water-flow and drainage patterns, including increased stormwater runoff, or changes to groundwater discharge or recharge.
- Analysis of potential impacts of the physical improvements on groundwater recharge and infiltration systems.
- Identification of shallow groundwater areas to determine potential impacts from dewatering during construction.
- Assessment of how the various physical improvements would contribute to additional impervious surface and the subsequent potential additional impacts to surface runoff. This assessment would include potential mitigation measures.
- Field surveys of groundwater discharge/recharge conditions including additional analysis of groundwater conditions with information from other geotechnical studies.

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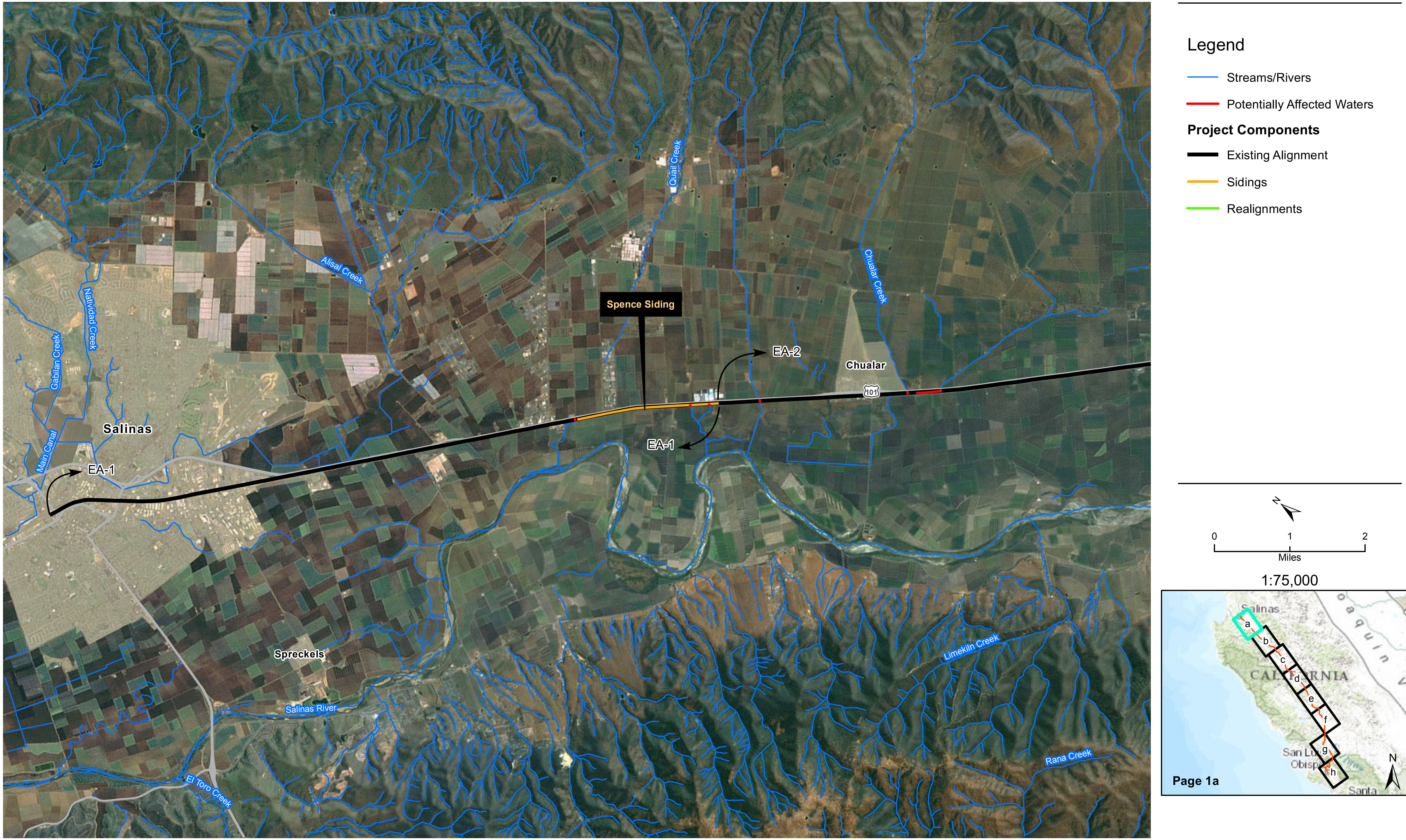
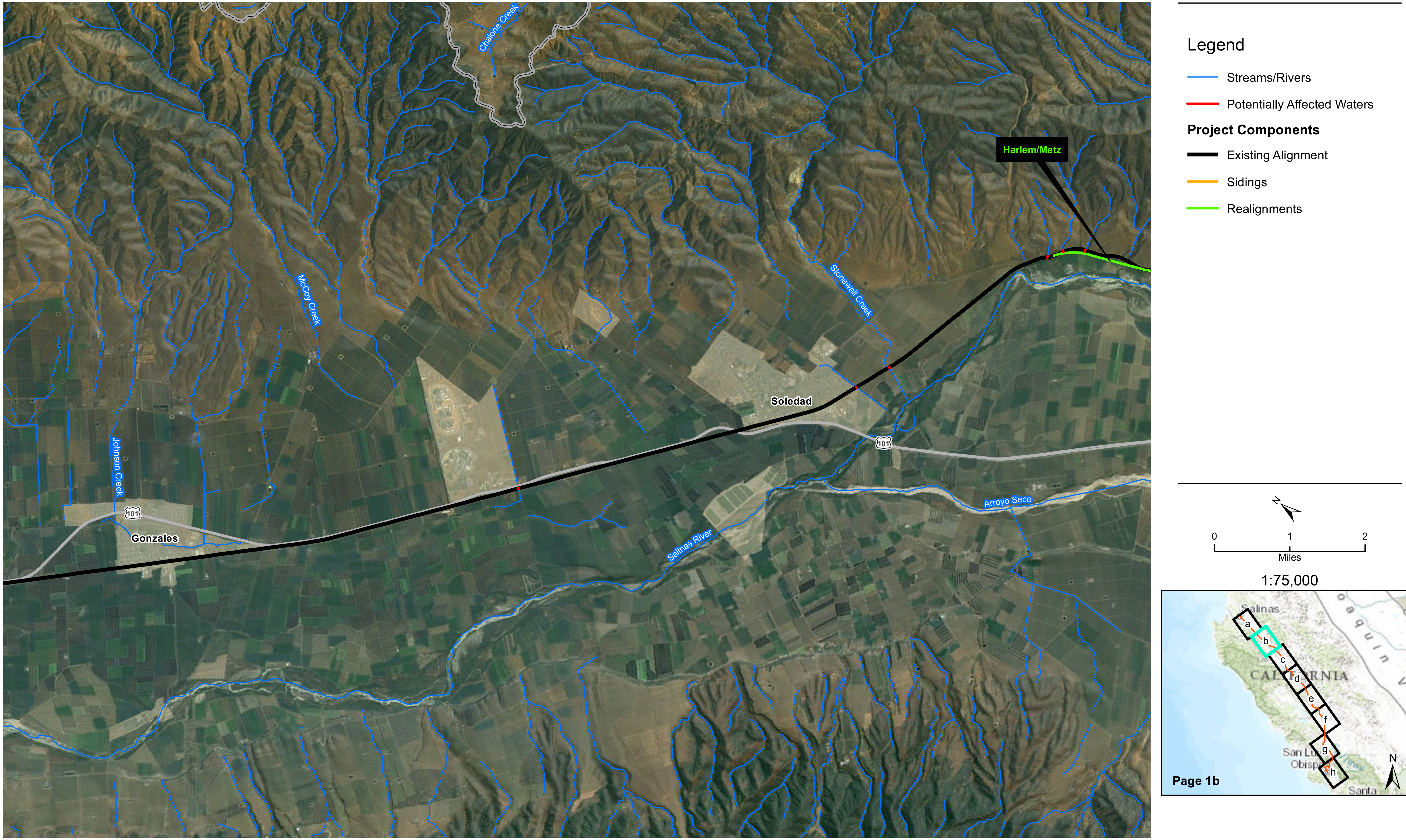


Surface Waters in the Project Area Figure **3.12-1a**

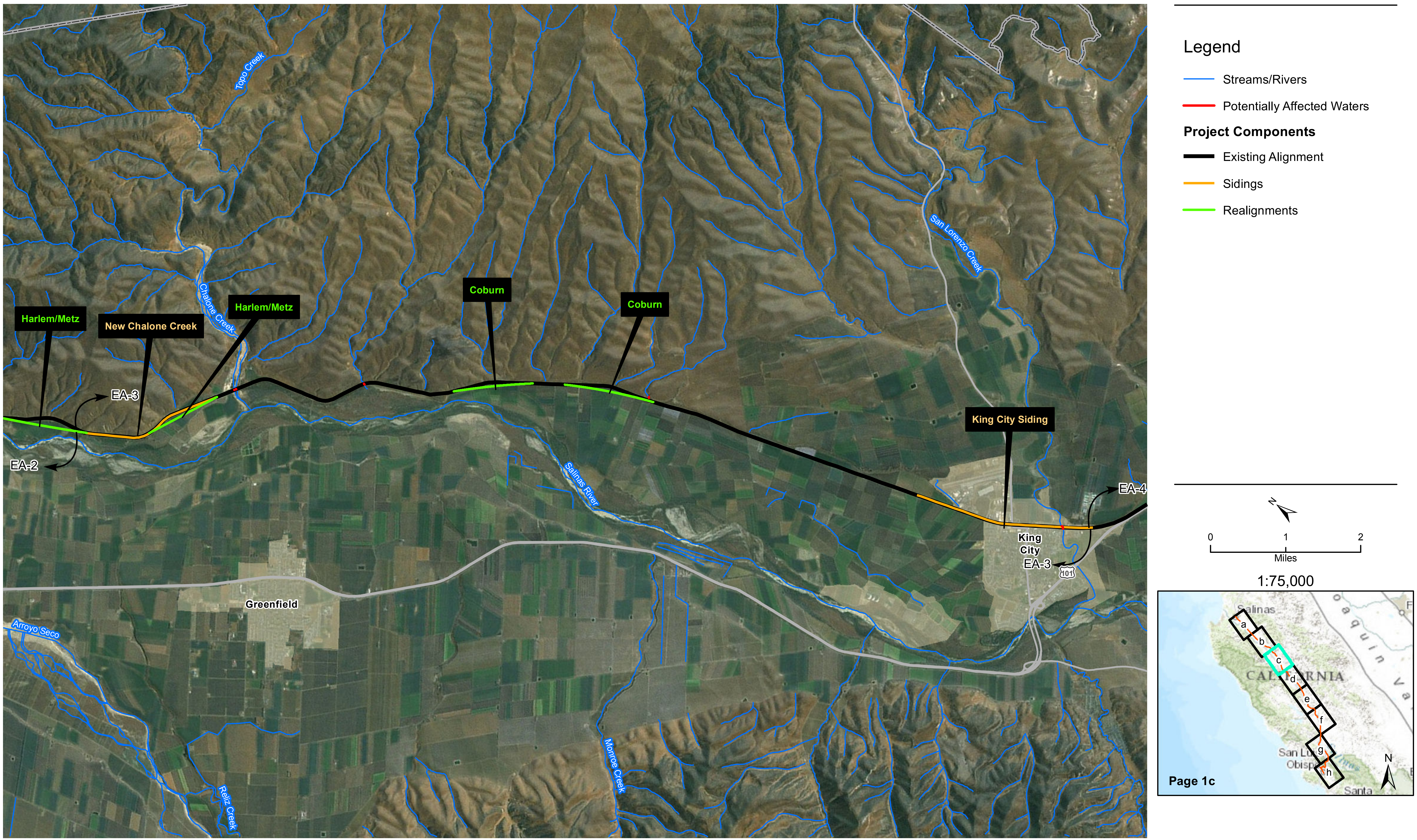
Source: ICF International, 2013



Surface Waters in the Project Area

Figure 3.12-1b

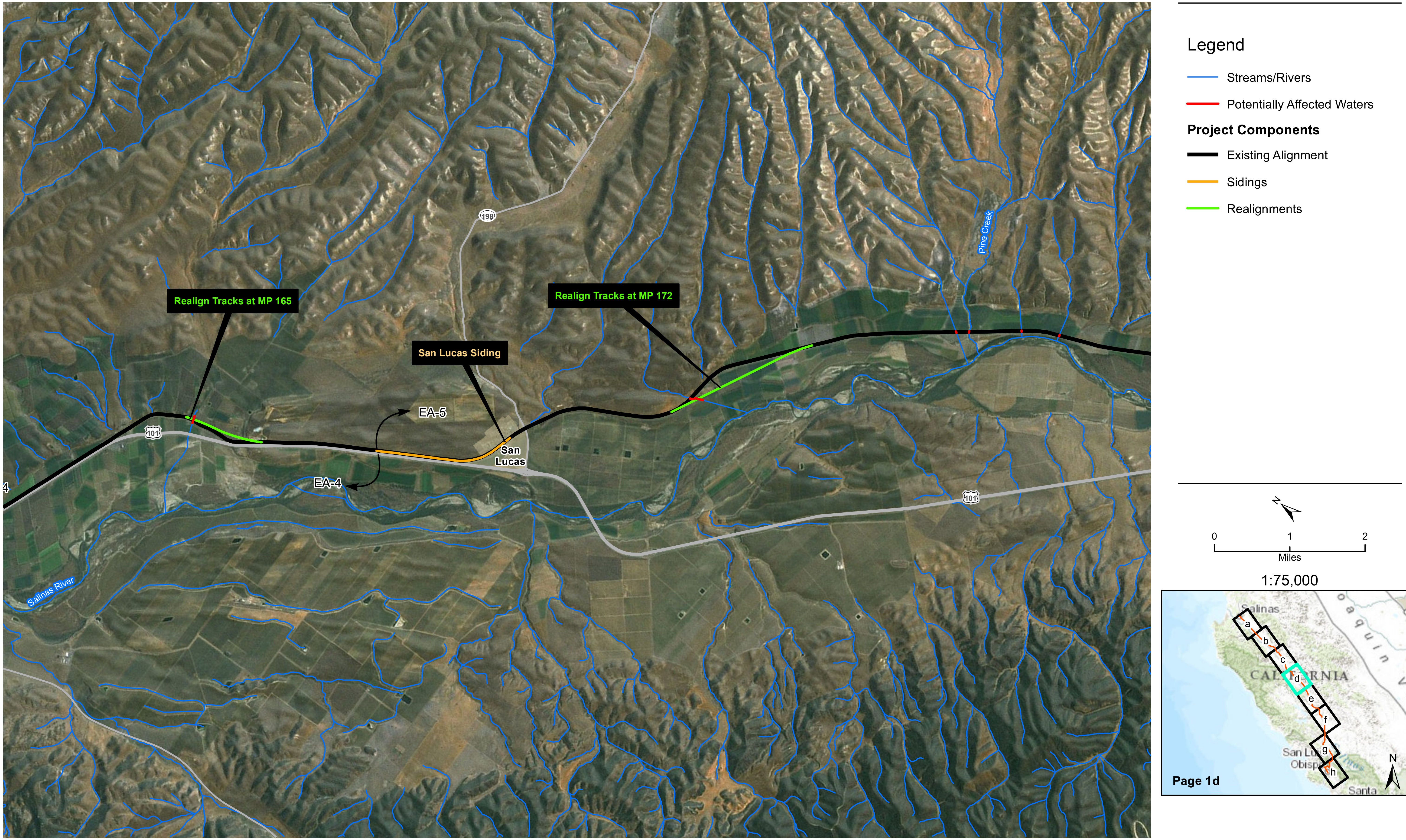
Source: ICF International, 2013



Surface Waters in the Project Area

Figure 3.12-1c

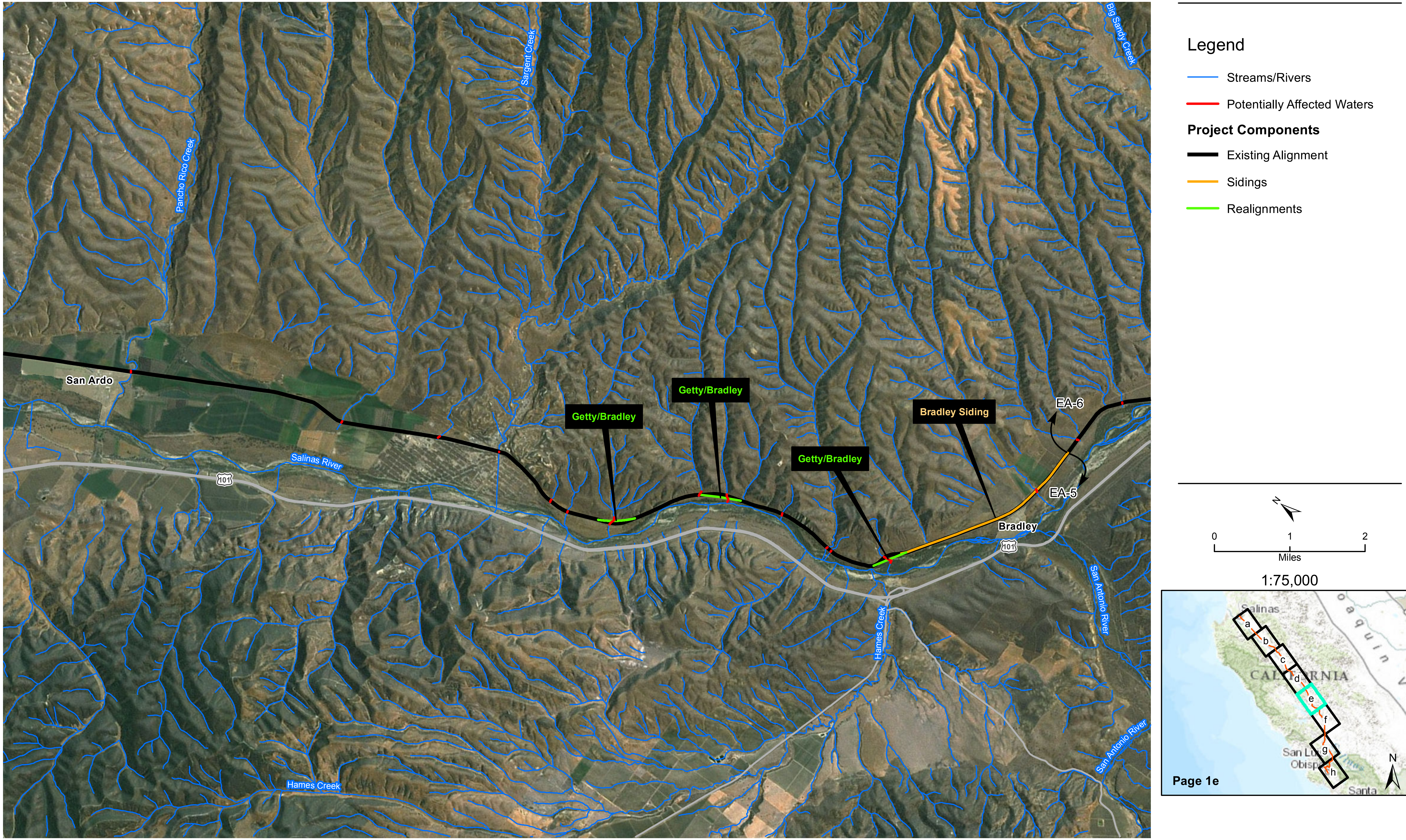
Source: ICF International, 2013



Surface Waters in the Project Area

Figure 3.12-1d

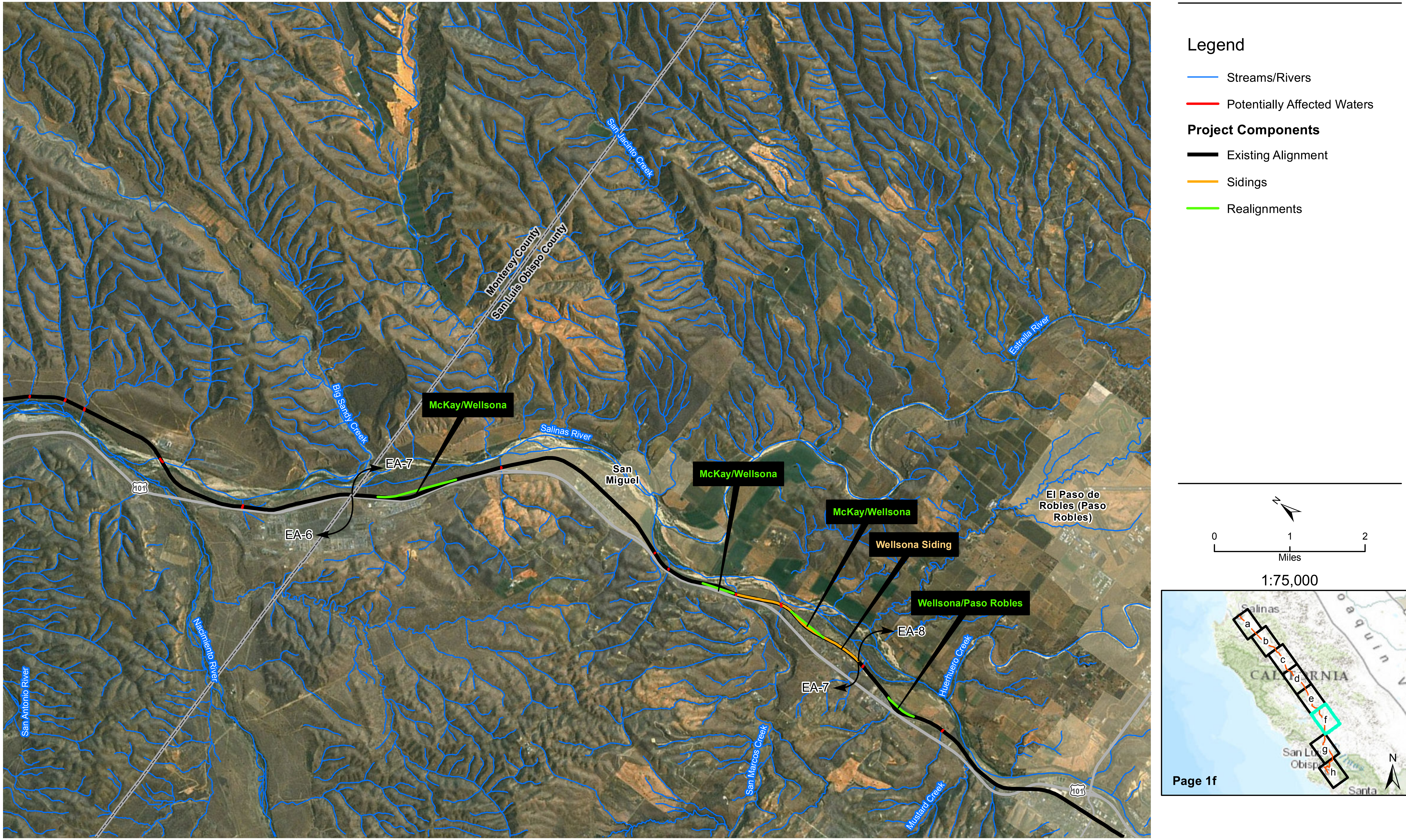
Source: ICF International, 2013



Surface Waters in the Project Area

Figure 3.12-1e

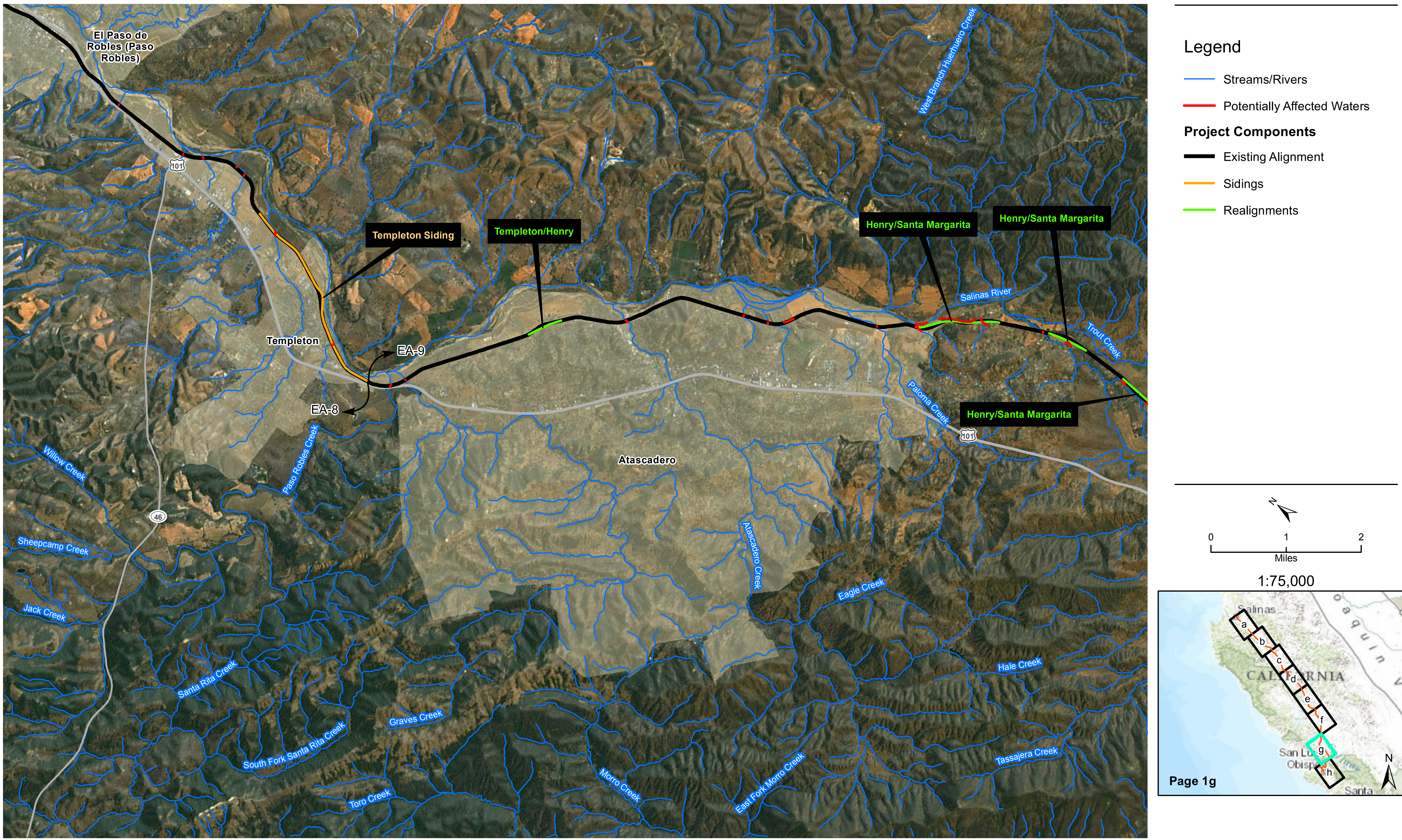
Source: ICF International, 2013



Surface Waters in the Project Area

Figure 3.12-1f

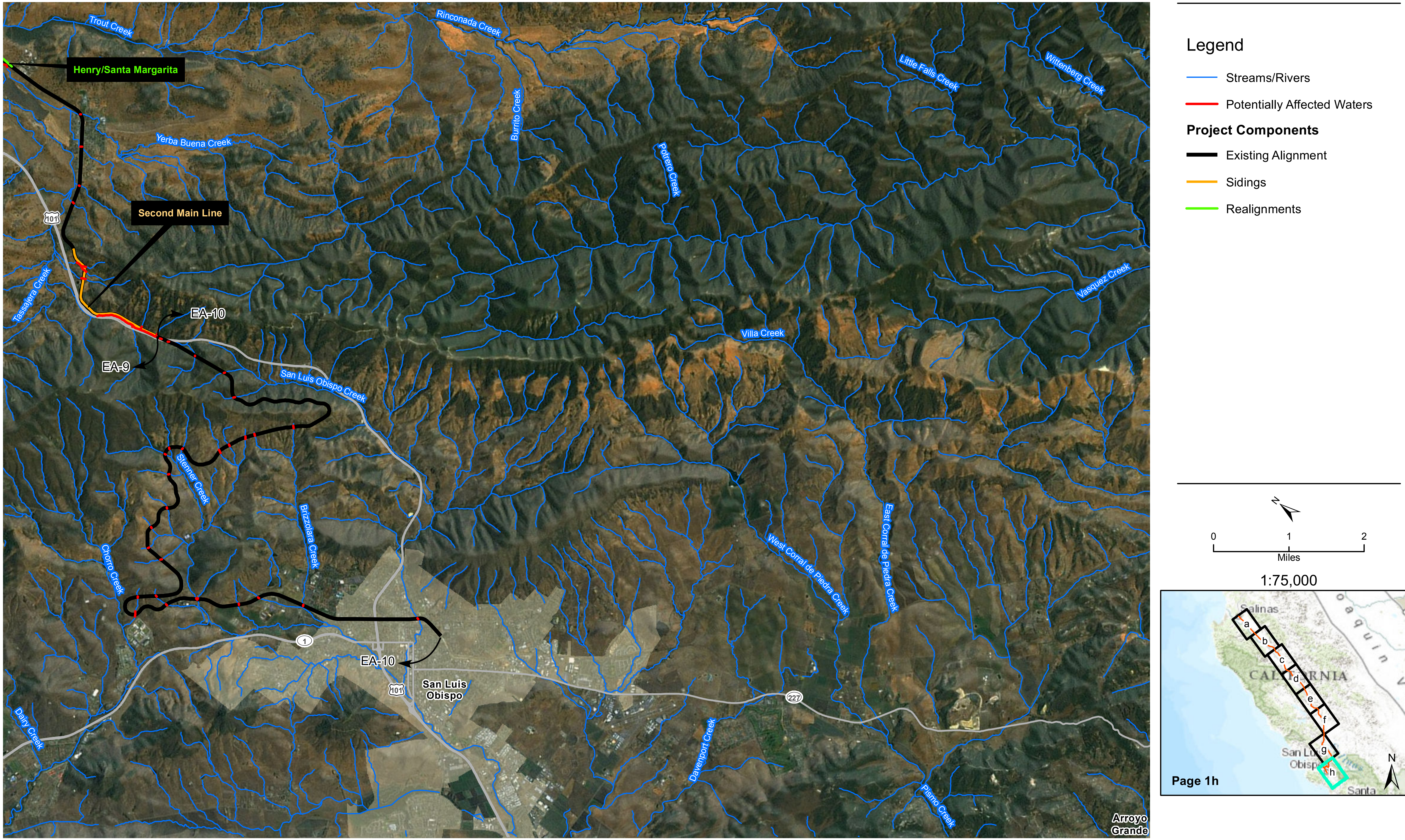
Source: ICF International, 2013



Surface Waters in the Project Area

Figure 3.12-1g

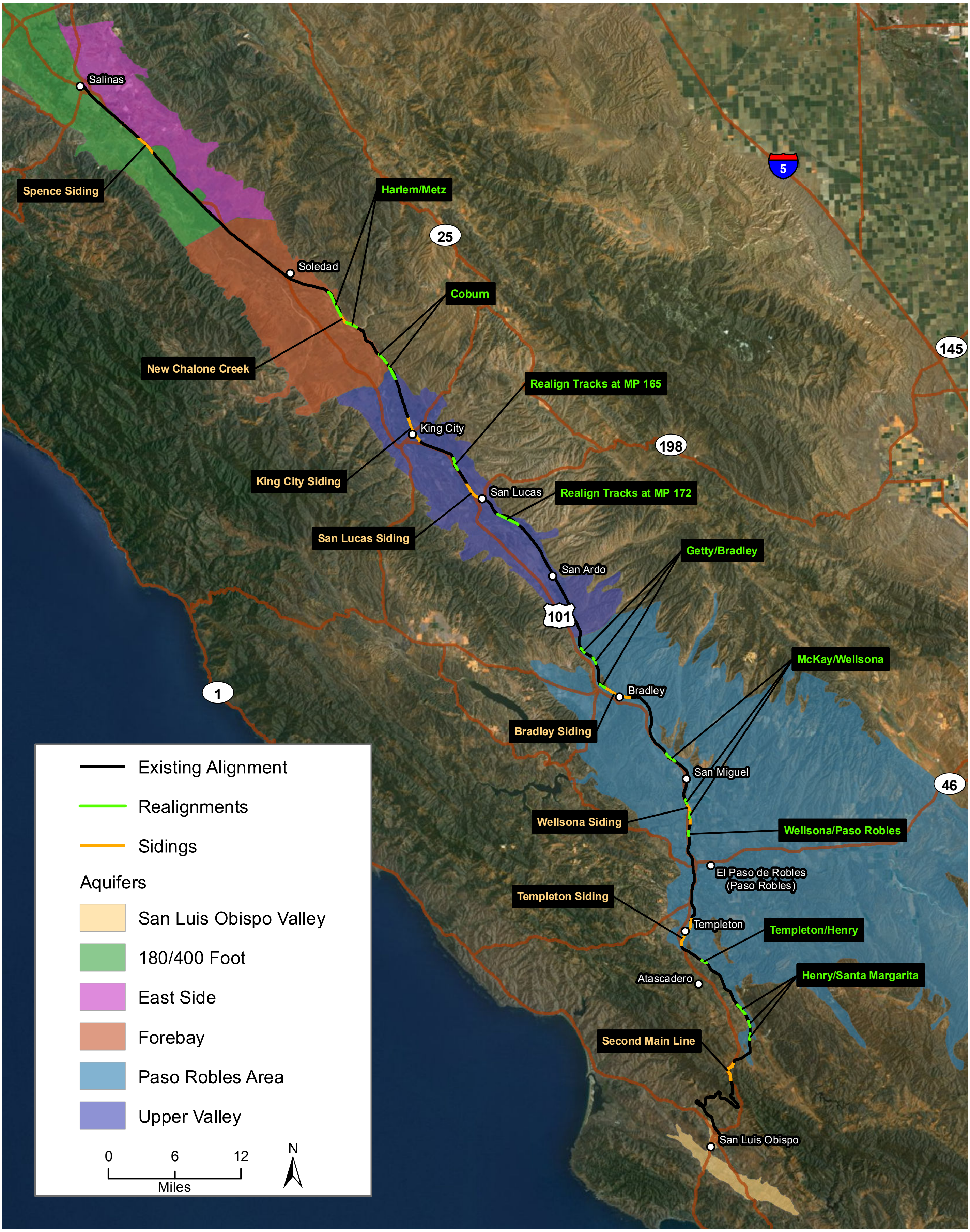
Source: ICF International, 2013



Surface Waters in the Project Area

Figure 3.12-1h

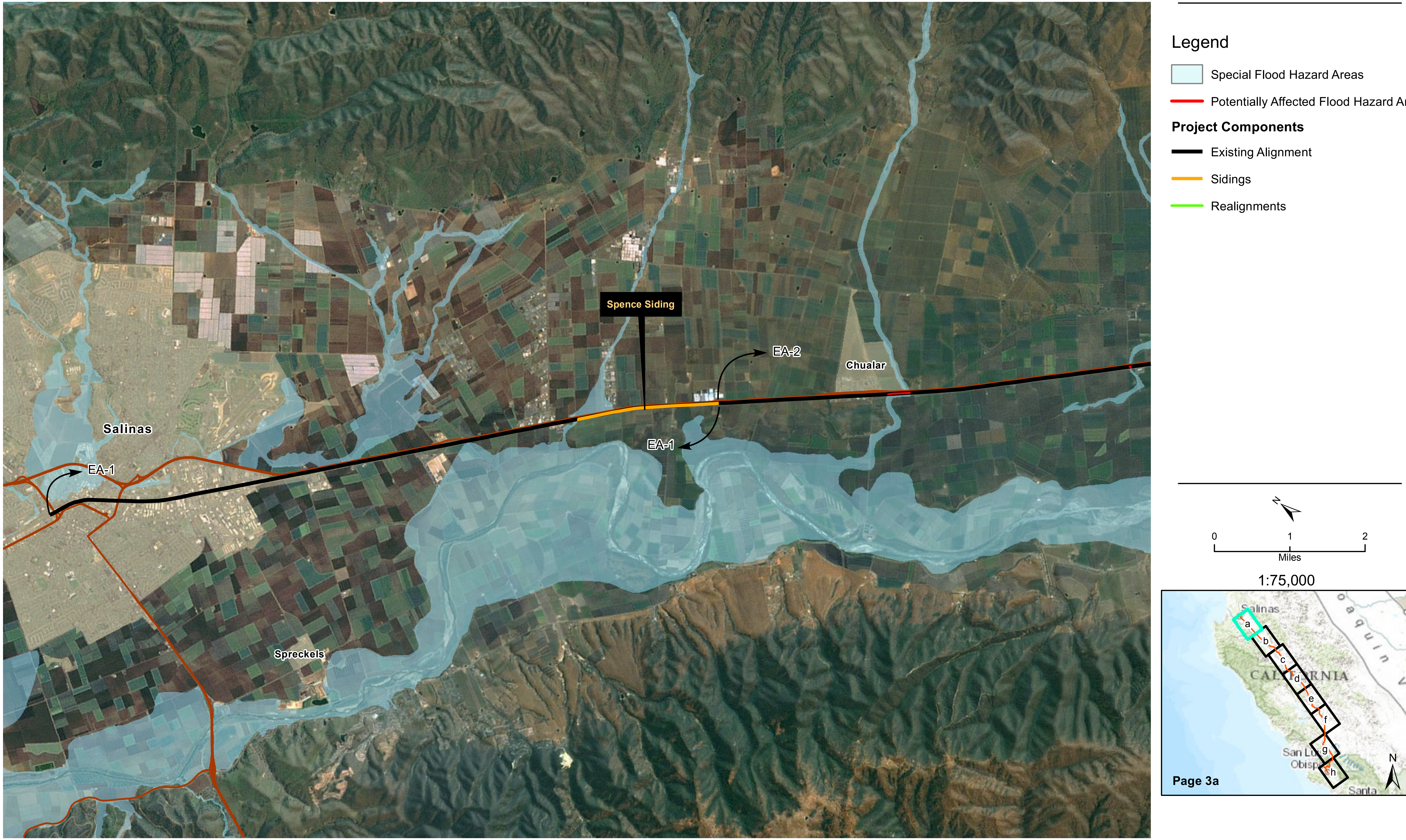
Source: ICF International, 2013



Groundwater Resources in Project Area

Figure 3.12-2

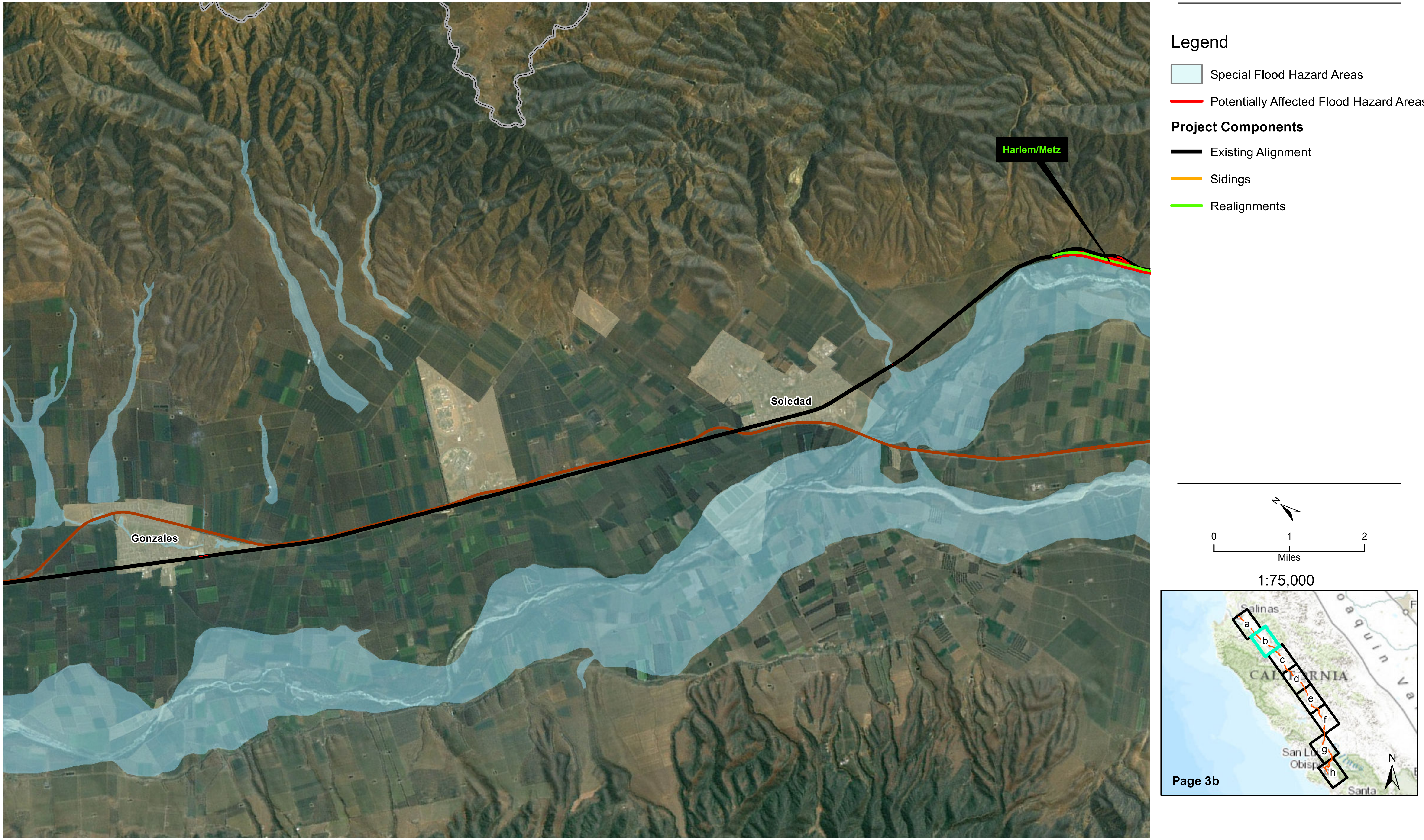
Source: ICF International, 2013



Special Flood Hazard Areas

Figure 3.12-3a

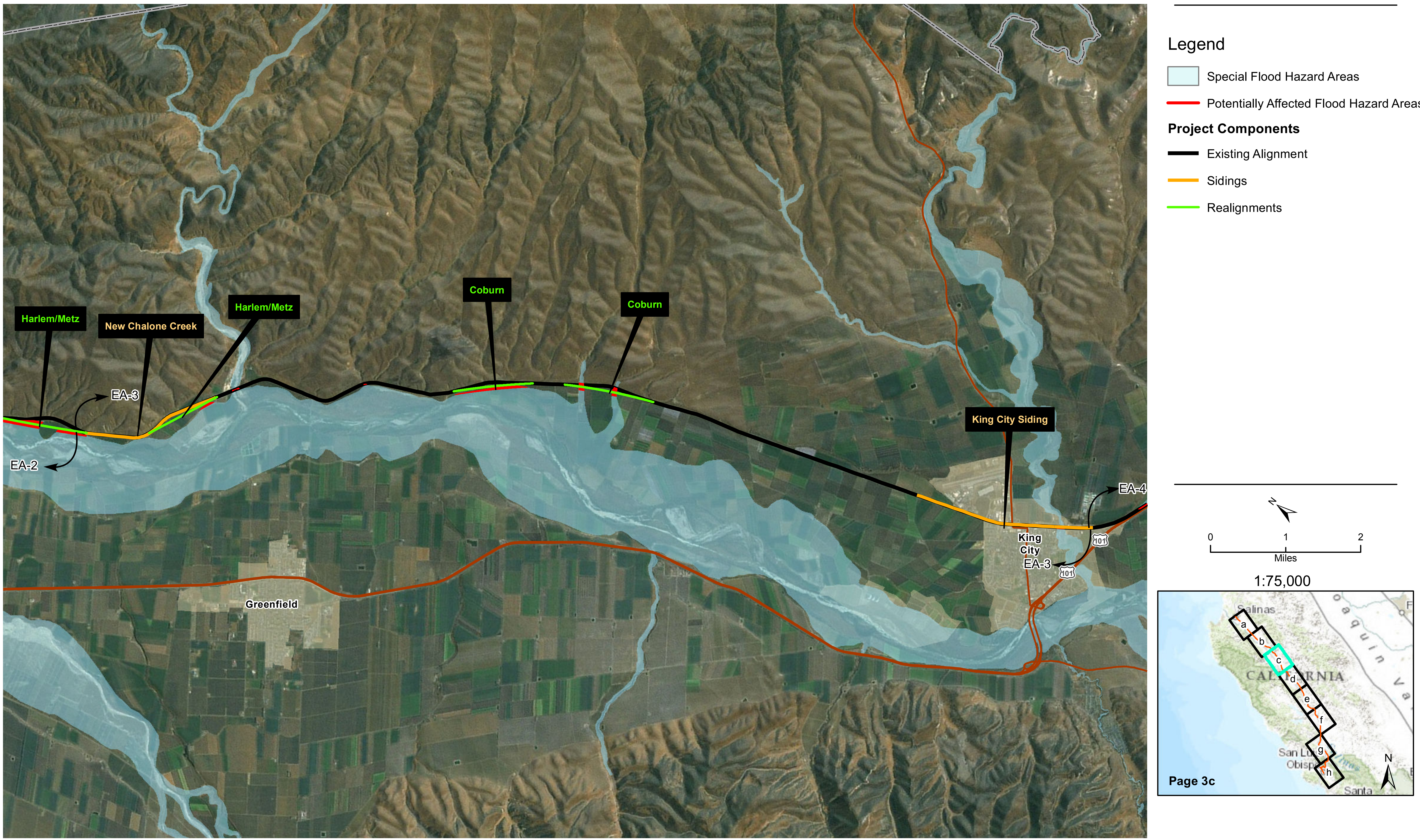
Source: ICF International, 2013



Special Flood Hazard Areas

Figure 3.12-3b

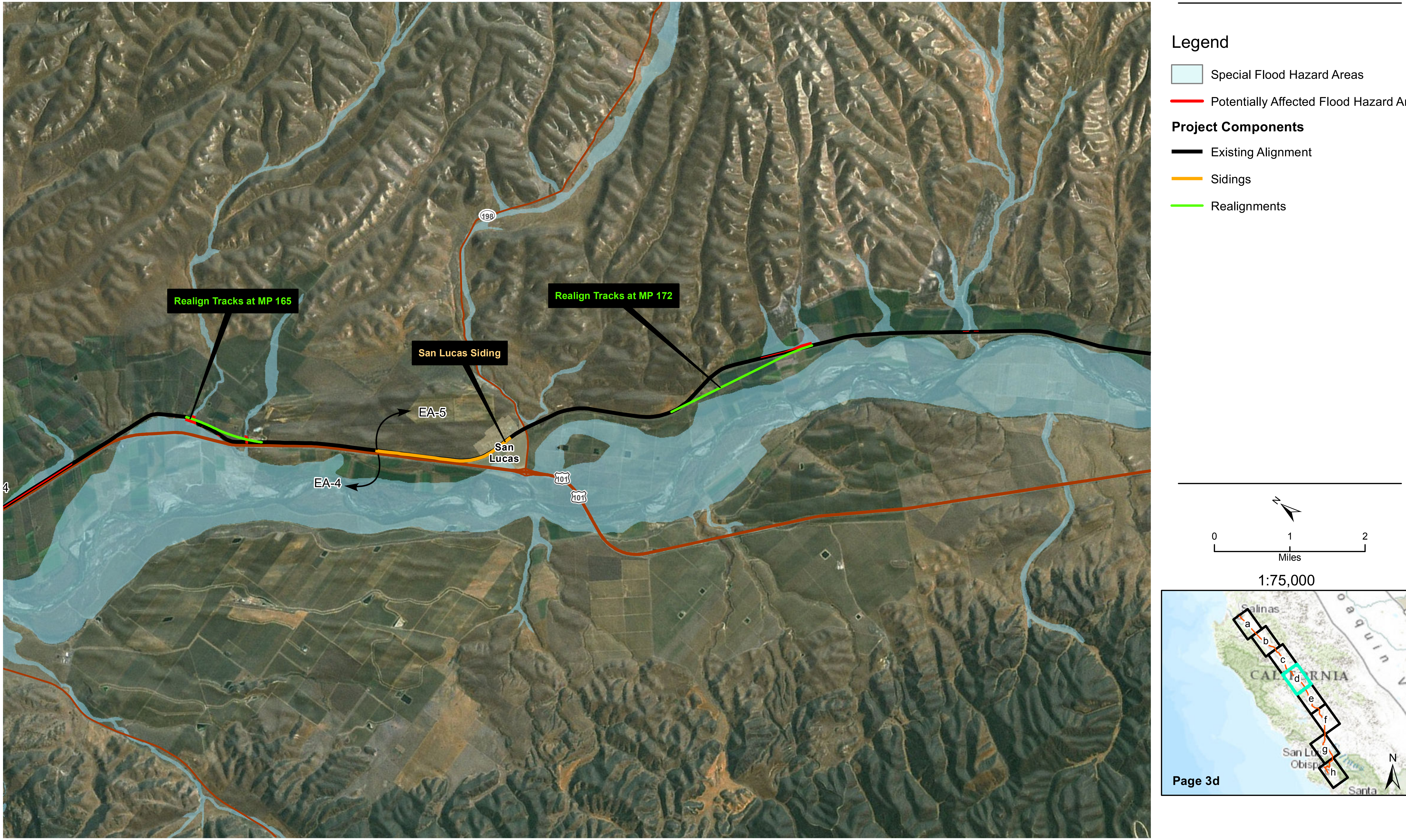
Source: ICF International, 2013



Special Flood Hazard Areas

Figure 3.12-3c

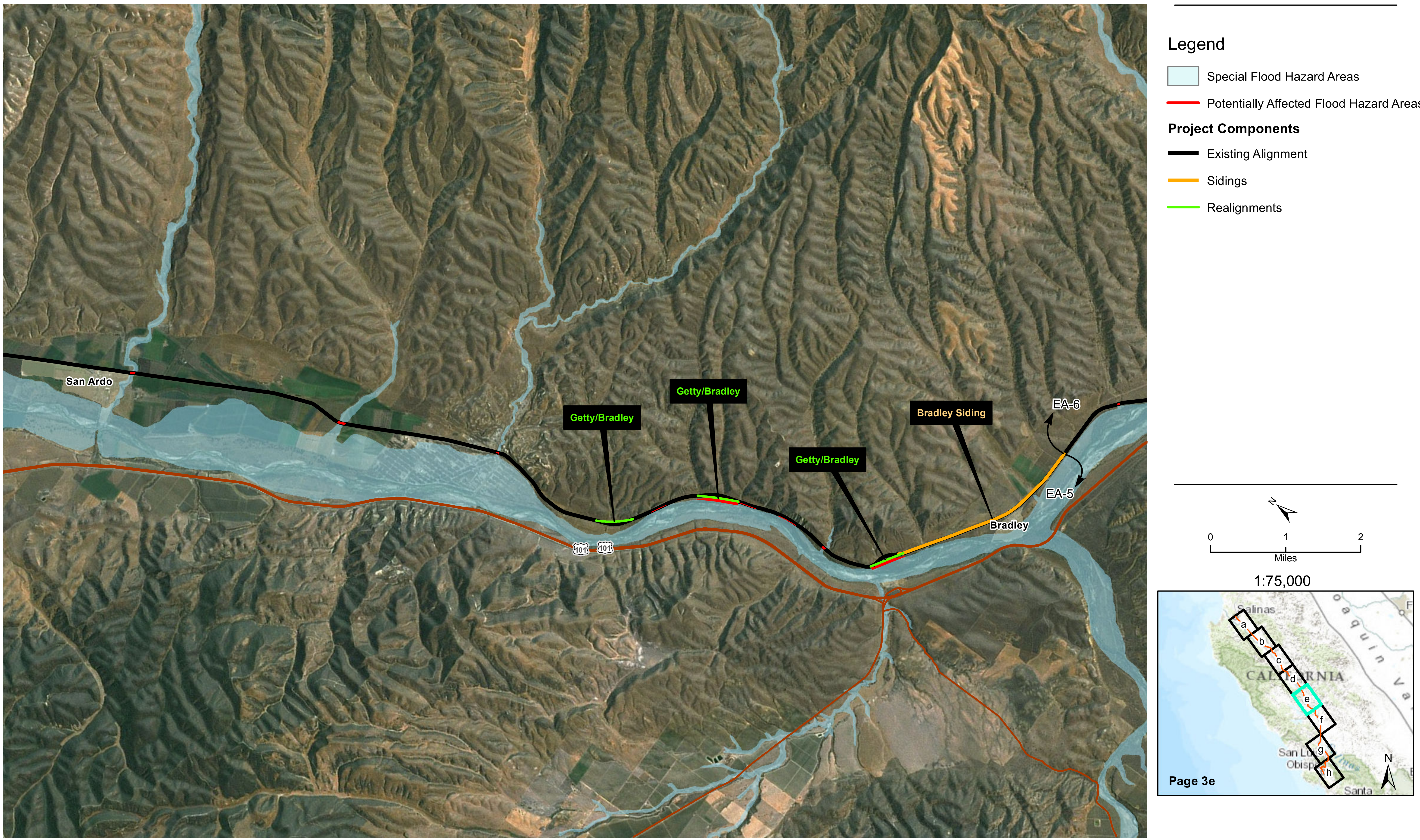
Source: ICF International, 2013



Special Flood Hazard Areas

Figure 3.12-3d

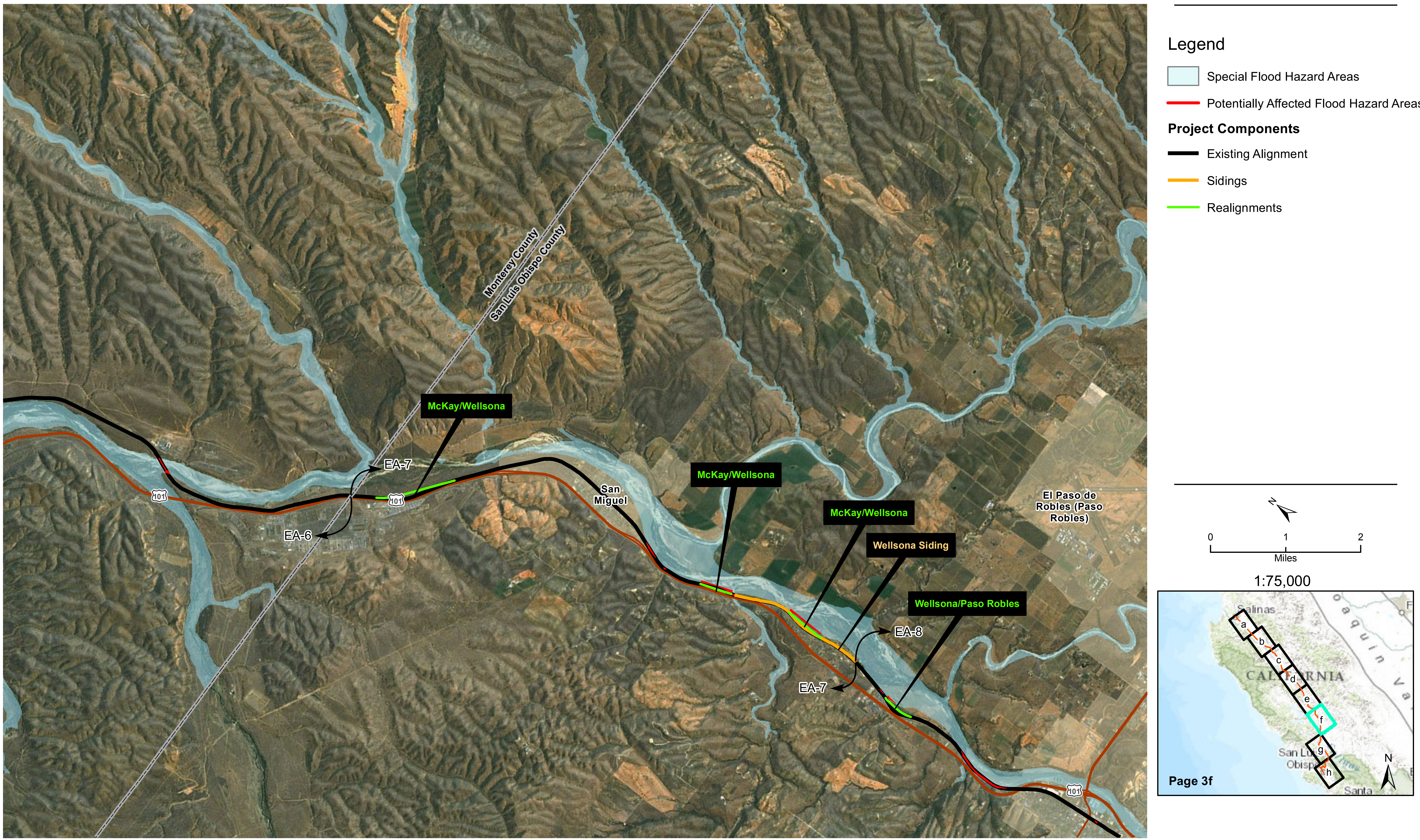
Source: ICF International, 2013



Special Flood Hazard Areas

Figure 3.12-3e

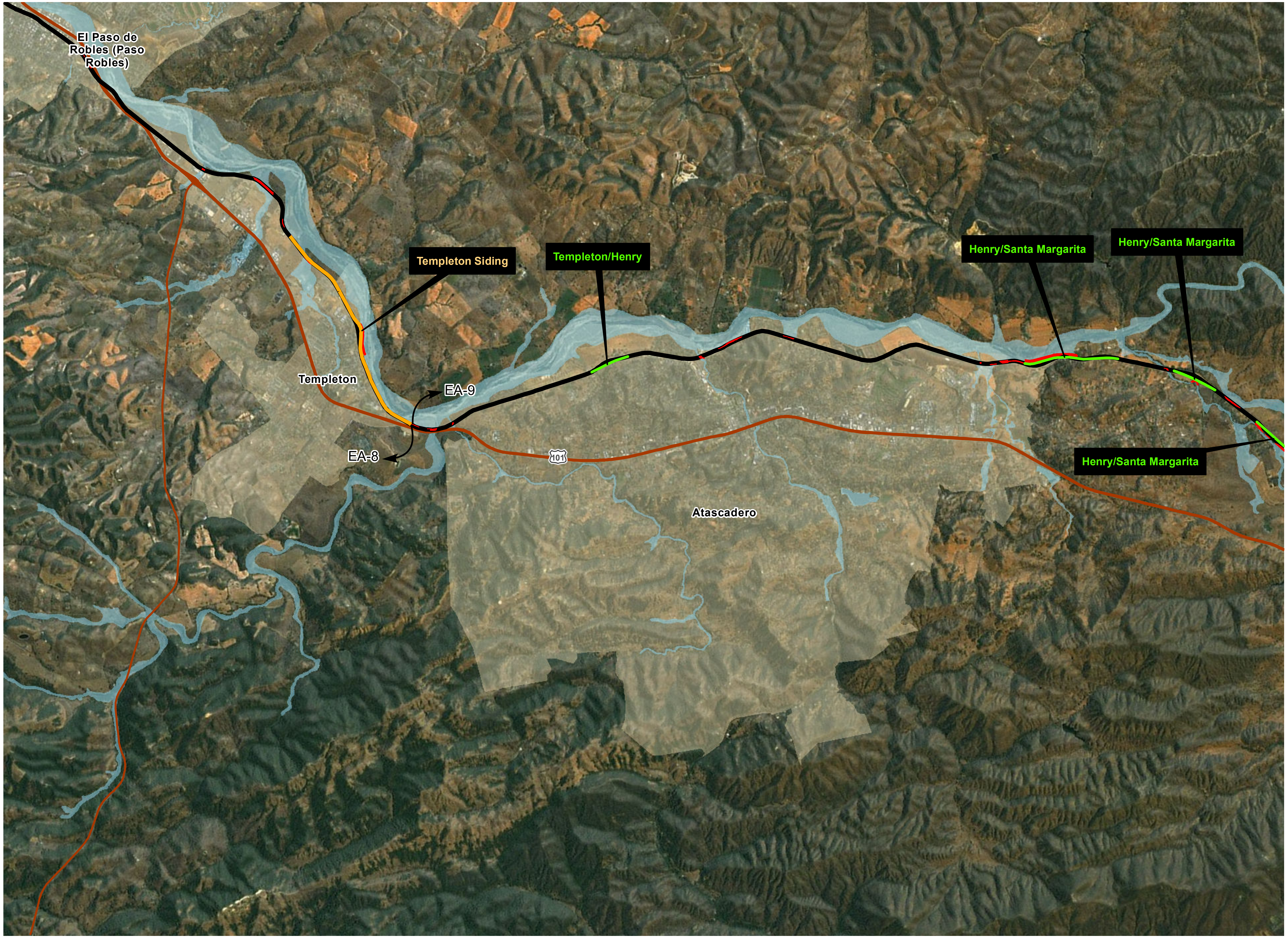
Source: ICF International, 2013



Special Flood Hazard Areas

Figure 3.12-3f

Source: ICF International, 2013



Legend

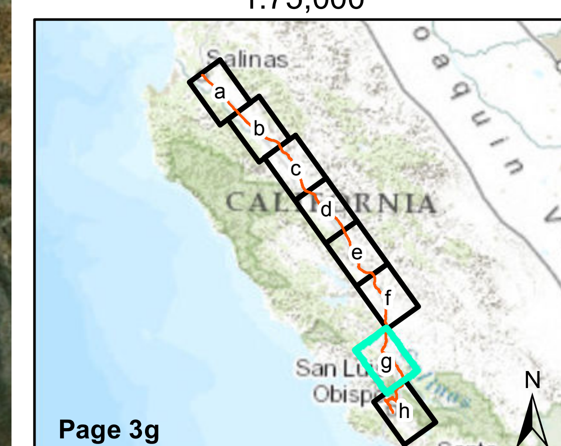
- Special Flood Hazard Areas
- Potentially Affected Flood Hazard Areas

Project Components

- Existing Alignment
- Sidings
- Realignments

0 1 2
Miles

1:75,000



Special Flood Hazard Areas Figure **3.12-3g**

Source: ICF International, 2013

Special Flood Hazard Areas

Figure 3.12-3h

Source: ICF International, 2013

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3.13 BIOLOGICAL RESOURCES AND WETLANDS

This section addresses the potential impacts of the No Build Alternative and the action alternatives ~~Build Alternative~~ on biological resources and wetlands in the corridor.

Chapter 5.0, Comments and Coordination, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. The City of King provided several comments on project elements that have been incorporated into the Preferred Alternative (see comments A-3.59 through A-3.63). **Section 3.13.4.3** below provides analysis of the Preferred Alternative.

3.13.1 REGULATORY REQUIREMENTS

Numerous federal, state, and local regulations and agencies have been enacted/created to protect biological resources. Listed below are pertinent regulations and/or oversight agencies for biological resources and wetlands.

3.13.1.1 Federal

Endangered Species Act

The Endangered Species Act (ESA)[1] establishes protection for species that are listed as endangered or threatened by USFWS. Sections 9 and 4(d) of the ESA prohibit "take" of endangered and threatened animal species. The USFWS has jurisdiction over wildlife and resident fish; the National Marine Fisheries Service (NOAA Fisheries) has jurisdiction over anadromous fish.[2] For plants, the ESA prohibits the removal or destruction of any endangered plant on federal land as well as destruction of an endangered plant species in non-federal areas in knowing violation of any state law. Section 7 of the ESA mandates that all federal agencies consult with the USFWS to ensure that federal agencies' actions do not jeopardize the continued existence of a listed species or adversely modify critical habitat for listed species.

[1] 16 USC 1531-1543

[2] Anadromous fish are fish that are born in freshwater, spend most of their lives in the sea, and return to fresh water to spawn. Salmon, smelt, shad, striped bass, and sturgeon are common examples. (http://www.nefsc.noaa.gov/faq/fishfaq1a.html)

Migratory Bird Treaty Act (MBTA) of 1918

The MBTA[3] prohibits take of most species of birds and their active nests, eggs, and nestlings, without a permit from USFWS. Activities that cause abandonment of a nest are also considered non-permitted take, prohibited by the MBTA.

Clean Water Act

Under Section 404 of the CWA[4], ~~the U.S. Army Corps of Engineers~~ USACE regulates the discharge of dredged, or fill material into "Waters of the United States" including wetlands. Section 401 of the CWA requires a water quality certification from the state for all nationwide or individual permits issued by the USACE under Section 404. The RWQCB is the state agency that issues Section 401 certifications.

Section 10 of the Rivers and Harbors Act

Section 10[5] regulates construction activities in "navigable waters" including rivers. The construction of any structure in or over any navigable water of the United States, the excavation from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters is unlawful unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army. The instrument of authorization is designated a Section 10 permit.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA)[6] requires that wildlife conservation be given equal consideration to other features of water-resource development programs through planning, development, maintenance and coordination of wildlife conservation and rehabilitation. Wildlife resources are defined by the Act to include birds, fish, mammals and all other classes of wild animals and all types of vegetation upon which wildlife is dependent.

Executive Order 11990, Protection of Wetlands

Executive Order (EO) 11990, Protection of Wetlands (DOT Order 5660.1A) is an overall wetland policy for all agencies managing federal lands, sponsoring federal projects, or providing federal funds to state and local projects. It requires federal agencies to follow procedures for avoidance, mitigation, and preservation, with

[3] 16 USC 703-712
[4] 33 USC 1251-1376
[5] 33 USC 401 et seq
[6] 16 USC 661-666

public input, before proposing new construction in wetlands. When federal lands are proposed for lease or sale to nonfederal parties, EO 11990 requires that the lease or conveyance contain restrictions to protect and enhance the wetlands on the property. The restrictions of this executive order apply to wetlands on military installations proposed for closure. In this capacity, EO 11990 can affect the sale of federal lands with wetlands. Compliance with Section 404 permit requirements may constitute compliance with EO 11990.

Executive Order 13112, Invasive species

EO 13112 directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species (including weeds). The order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species.

3.13.1.2 State

California Endangered Species Act

The California Endangered Species Act (CESA)[7] prohibits the take of state-listed endangered and threatened species unless specifically authorized by CDFW. CDFW administers the CESA and authorizes take through permits or memorandums of understanding. Section 2090 of the California Fish and Game Code requires state agencies to comply with threatened and endangered species protection and recovery and to promote conservation of these species.

Wildlife and Natural Areas Conservation Program

The Wildlife and Natural Areas Conservation Program of the State Fish and Wildlife code gives CDFW the authority to create and administer wildlife areas.[8]

Native Plant Protection Act

The Native Plant Protection Act (NPPA)[9] includes provisions that prohibit the taking of endangered or rare native plants from the wild and a salvage requirement for landowners. CDFW administers the NPPA and generally regards as “rare” many plant species included on lists 1A, 1B and 2 of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2001).

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[7] California Fish and Wildlife Code 2050 et seq

[8] California Fish and Wildlife Code Division 3, Chapter 7.5, Sections 2700-2729

[9] California Fish and Wildlife Code Sections 1900 – 1913

~~Streambed Alterations~~ California Fish and Game ~~Wildlife~~ Code Sections 1601-1603

The California Fish and ~~Wildlife~~ Game Code regulates activities that interfere with the natural flow of, or substantially alter the channel, bed, or bank of a lake, river, or stream. Lakebed and streambed alteration activities are covered under Section 1602 for public and private entities. Requirements to protect the integrity of biological resources and water quality are often conditions of ~~Streambed Alteration Agreements~~ SAAs administered under Sections 1600 to 1616.

3.13.1.3 Local

There are no Habitat Conservation Plans in place within the project corridor.[10]

3.13.2 METHODS OF EVALUATION

The components of the action alternatives ~~Build Alternative~~ would have varying potential to result in significant environmental effects, either directly or indirectly, to biological resources in the study area as described below. This section discusses how each component was evaluated.

Appendix G of the CEQA Guidelines was consulted to assist in determining whether the project would have significant impacts on biological resources.

3.13.2.1 Study Areas and Impact Footprints for Biological Resources

For the purposes of this evaluation, study areas are defined as the proposed work area composed of *both* permanent and temporary impact areas, along with an additional 250-foot-wide buffer zone on all sides.

The 250-foot buffer was selected primarily, but not exclusively, for vernal pool species and wetlands that could be indirectly affected by alterations in hydrology from project construction. This buffer also serves to define an area of potential indirect effects upon species that may be affected by construction dust, noise, fuel and oil spills, and visual disturbance. These indirect effects have the potential to disrupt normal behavior patterns (e.g., disrupt nesting or foraging) or result in the exclusion of species from these areas.

[10] County of San Luis Obispo, 2011

Because these areas are generally already subject to rail operations, it is assumed that the operational indirect effects would be relatively similar to the baseline conditions.

3.13.2.2 Biological Resource Evaluation

Sensitive Plant and Wildlife Species and Associated Habitat

Impacts to special-status species were evaluated using a variety of government and private foundation databases. CDFW's California Natural Diversity Database (CNDDB) records and CNPS inventories were used to first identify all species occurring in the study area ~~vicinity~~. Each impacted species was crosschecked with USFWS and CNPS inventories to determine legal status, geographic distribution, habitat description, reported blooming period for plants, potential for occurrence in the study areas, and whether there are CNDDB records within the study areas.

The potential for occurrence of special-status species was further assessed using the land cover type data from USFS's CALVEG classification system and the California Fire and Resource Assessment Program (FRAP) to identify suitable habitat. The California Wildlife Habitat Relationship System – Life History Accounts and Range Maps were queried to determine wildlife species' range and habitat requirements. NatureServe Explorer was used to determine rare wildlife species' ranges and habitat requirements. Impacts to critical habitat for federally protected wildlife were assessed using USFWS and National Marine Fisheries Service Critical Habitat database.

Potential effects to special-status were determined based on whether or not there would be direct and/or indirect impacts to suitable habitat (i.e., land cover types suitable for the species).

Wildlife Movement/Migration Corridors

Impacts to wildlife movement/migration corridors were identified qualitatively, wherever proposed ~~improvements~~ components would result in new barriers within large open areas, parks and reserve areas, creeks, rivers and riparian areas in undeveloped settings.

Jurisdictional Waters and Wetlands

Impacts to jurisdictional waters and wetlands were assessed using the USFWS's National Wetlands Inventory (NWI) for wetlands and the USGS's National Hydrography Dataset (NHD) for streams.

3.13.3 AFFECTED ENVIRONMENT

This section describes the biological and wetland resources present in the project corridor.

3.13.3.1 Biological Resources and Wetlands in the Study Area

Regional Summary

The project corridor is dominated largely by agricultural uses and urban/suburban areas in the cities of Salinas, Soledad, Paso Robles, Atascadero, San Luis Obispo, and many smaller communities. The Salinas River, a designated wildlife area, and a section of the Los Padres National Forest are each located within the project corridor. Each provides different degrees of habitat quality for plant and animal species. Wildlife may also be found in agricultural or urban/suburban areas, though to a lesser extent.

Sensitive Vegetation Communities

Sensitive vegetation communities, groups of species, both plant and wildlife, that form communities, and wildlife habitats that are unique, of relatively limited distribution in the region, or of particularly high wildlife value. These resources have been defined by federal, state, and local government conservation programs. The maps comprising **Figure 3.13-1** depict these communities in relation to the existing railroad corridor.

Riparian Communities

Freshwater Ponds hold different plants and animals, depending on pond size and depth. Most permanent ponds support fish life; intermittent types typically do not. Algae, plankton, and pondweeds are typical of shallow lacustrine environments. Birds, mammals, reptiles, and amphibians use lacustrine habitats for reproduction, food, water, and cover.[11]

Riverine habitats are characterized by the presence of intermittent or continually running water, as in a river or stream. Open water zones provide resting and escape cover for many species of waterfowl, and habitat for aquatic mammals. Insects, such as nymphs of mayflies, caddisflies, alderflies, stoneflies, and their larvae, are

[11] Grenfell, 1988a

the most common fast stream inhabitants. Water moss and algae grow on rocks. Smaller organisms are found in slow-moving waters. The turbidity and velocity of the river have the most prominent impacts on the species that may be present.[12]

Valley Foothill Riparian habitats are found in valleys bordered by sloping alluvial fans, lower foothills, and coastal plains. Winter-deciduous trees grow to form a canopy and subcanopy, with an understory shrub layer. Dominant species include cottonwood, California sycamore, valley oak, white alder, bozelder, wild grape, wild rose, and California blackberry.[13]

Terrestrial Communities

Annual Grassland is the most abundant natural community in the project corridor. Where natural conditions restrict the growth of other species, exotic grasses will flourish. Exotic grass species such as wild oats, various Bromes, Foxtail Fescue, and Kentucky Bluegrass are common in these areas.[14]

Blue Oak Woodland communities often include California juniper and various small shrubs, in addition to the abundant blue oak trees. The term "woodland" is used instead of "forest" because woodlands tend to be more open and sunlit than forests. Blue oak woodlands are typically associated with shallow, rocky, infertile, well-drained soils in dry, hilly terrain. Blue Oak-Foothill Pine is a similar natural community found at higher elevations.[15]

Coastal Oak Woodland is typically found within a 50-mile radius of the coast, often in drainages in ravines between grassy hillsides. Fog is common in these areas, though soil most often remains too dry to support a forest. In addition to coast live oak trees, California blackberry, creeping snowberry, toyon, and poison oak are commonly present. Wildfire is an intrinsic part of coastal live oak woodland ecology.[16]

Coastal Scrub is an upland vegetation community characterized by low soft-leaved, drought-deciduous shrubs. Coastal scrub is typically found on dry sites and steep slopes, providing habitat for many endangered and threatened species.[17]

[12] Grenfell, 1988b
[13] Grenfell, 1988c
[14] US Forest Service, 2009
[15] Ritter, 1998
[16] Cal Poly Land, n.d.
[17] Caltrans, 2007, p. 3.13-6

Mixed Chaparral is a mix of fully woody and sometimes semi-woody, low to mid-elevation chaparral and coastal sage scrub species. Chaparral is typically dominated by drought-tolerant shrubs with hard evergreen leaves.[18]

Valley Oak Woodland is located on low to moderate slopes at elevations below 4,000 feet. Valley Oaks are large, winter-deciduous trees.[19]

Non-Sensitive Land Use Types[20]

Urban land includes developed areas near towns and cities. This land can include any combination or residential, commercial, or public uses.

Barren land refers to non-urban, non-agricultural, public or private land that is not under special protection under relevant state or federal laws.

Cropland includes all agricultural lands, whether for grazing or production of crops. In this section, no distinction is made between various forms of cropland. For additional information on agricultural resources, see **Section 3.7, Agricultural and Forest Resources**.

Sensitive Plant Species

Sensitive plant species include those species that have been identified for special status and/or recognition by federal and state resource agencies, as well as relevant private organizations, due to concerns of documented or perceived decline or limitation of population size or geographical extent. **Table 3.13-1** lists the 55 species with potential to occur in the study area, per the CNDDB. Of these 55 species, a total of 8 are known or expected to occur in the study area.

Sensitive Wildlife Species

Sensitive wildlife species include those species that have been identified for special status and/or recognition by federal and state resource agencies due to concerns of documented or perceived decline or limitation of population size or geographical extent. Wildlife that are legally protected or otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations are all considered special-status. Special status species include those species listed in state

[18] US Forest Service, 2009

[19] US Forest Service, 2009

[20] Non-sensitive land use types are considered to have a low potential of providing habitat for state of federally protected species. Regular maintenance of croplands generally make them unattractive as potential habitat.

and or/federal threatened or endangered species records under the ESA or CESA, those considered as candidates for listing, and species recognized by USFWS and or CDFW as California species of special concern.

According to a search of the CNDDB, the study area may contain potential habitat for more than 45 sensitive species of fish, invertebrates, birds, amphibians, reptiles, and mammals. **Table 3.13-2** identifies each of these species and evaluates the likelihood of their presence in the study area given particular conditions.

Critical Habitat

It is assumed that all sensitive vegetation communities within the study area provide wildlife habitat. Certain portions of the ~~existing rail alignment and the proposed improvements occur in areas~~ study area are located in areas that have been designated as Critical Habitat for certain species. Designated critical habitat is defined by the USFWS as habitat believed to be essential to the conservation of a designated threatened or endangered species. The study area contains critical habitat areas for three threatened or endangered species: vernal pool fairy shrimp, California red-legged frog, and south-coast California steelhead. **Figure 3.13-2** shows the distribution of critical habitat in the study area.

Wildlife Movement/Migration Corridors

Any large open areas, parks and reserve areas, creeks, rivers and riparian areas in undeveloped settings are considered potential wildlife movement corridors. Smaller creeks and areas of disconnected habitat can also provide connectivity for wildlife by acting as stepping stones for the regional movement of some avian species, or by providing rest areas for migratory species.

At a secondary level, agricultural and even suburbanized areas can provide limited opportunities for wildlife movement.

Based on the foregoing, the most likely wildlife movement/migration corridors in the study area include the Salinas River, San Marcos Creek, Santa Margarita Creek, Yerba Buena Creek, San Lorenzo Creek, Camp Roberts, the Big Sandy Wildlife Area, and Los Padres National Forest.

Jurisdictional Waters and Wetlands

The study area includes numerous creeks, rivers, and wetlands. These bodies are important for consideration as both jurisdictional waters and potential wildlife areas. **Figure 3.13-3** shows the distribution of wetlands and jurisdictional waters in the study area.

Table 3.13-1 Special-Status Plant Species Potentially Occurring in Coast Corridor Study Area

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Abbott's bush-mallow (Malacothamnus abbottii)	–/–/1B.1	Known from Monterey County. Occurs in riparian scrub; 135-490 meters. Blooms May-Oct.	Low. Suitable habitat occur in one Study Area; and several occurrences in the region	No
Blochman's dudleya (Dudleya blochmaniae ssp. blochmaniae)	–/–/1B.1	Known from Coastal California from San Luis Obispo County to San Diego County; Baja California. Occurs on clay soils, rock outcrops, in coastal scrub and adjacent grasslands, often on serpentinite; 5-450 meters. Blooms Apr-Jun.	Moderate. Suitable habitat may be present if rocky microhabitat areas are present within grassland and shrubland habitats and several occurrences in the region	No
Brewer's spineflower (Chorizanthe breweri)	–/–/1B.3	Known from South Coast Ranges, San Luis Obispo County. Occurs on rocky or gravelly serpentinite soils in oak woodland, chaparral, and coastal scrub; 45-800 meters. Blooms Apr-Aug.	High. Suitable rocky or gravelly serpentinite substrates may be present in Study Areas and many occurrences in the region	No
Caper-fruited tropidocarpum (Tropidocarpum capparideum)	–/–/1B.1	Historically known from the northwest San Joaquin Valley and adjacent Coast Range foothills; currently known from Fresno, Monterey, and San Luis Obispo Counties. Occurs in grasslands on alkaline hills; below 455 meters. Blooms Mar-Apr.	Low. Could occur in one Study Area if suitable alkaline soils are present; one occurrence in region	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Chaparral ragwort (Senecio aphanactis)	–/–/2B.2	Known from Scattered locations in central western and southwestern California, from Alameda County to San Diego County. Occurs in oak woodland, coastal scrub, chaparral, open sandy or rocky areas, sometimes on alkaline soils; 15-800 meters. Blooms Jan-Apr.	Moderate. Suitable habitat present, and several occurrences in region	No
Chorro Creek bog thistle (aka San Luis Obispo fountain thistle) (Cirsium fontinale var. obispoense)	E/E/1B.2	Known from Endemic to San Luis Obispo County. Occurs in Serpentinite seeps, drainages, and stream banks in chaparral, oak woodlands, coastal scrub, annual grassland; 35-380 meters. Blooms Feb-Jul, less often Aug-Sep.	Moderate. Suitable habitat may be present in one Study Areas if alkaline seeps occur, several occurrences known in region	No
Congdon's tarplant (Centromadia parryi ssp. congdonii)	–/–/1B.1	Known from East San Francisco Bay Area, Salinas Valley, Los Osos Valley. Occurs in alkaline soils in annual grassland, on lower slopes, flats, and swales, sometimes on saline soils; below 230 meters. Blooms May-Oct, less often Nov.	High. Suitable habitat may be present if alkaline soils occur in Study Areas, one occurrence known in region is in a Study Area	Yes
Cuesta Pass checkerbloom (Sidalcea hickmanii ssp. anomala)	–/R/1B.2	Known from Cuesta Ridge, San Luis Obispo County. Occurs on serpentinite soils in chaparral; 600-800 meters. Blooms May-Jun.	None. Occurs at higher elevations than Study Areas	No
Cuesta Ridge thistle (Cirsium occidentale var. lucianum)	–/–/1B.2	Known only from fewer than 10 extant occurrences in the southern Santa Lucia Mtns. Of San Luis Obispo County. Occurs on serpentinite, often steep rocky slopes and disturbed roadsides, openings in chaparral; 500-750 meters. Blooms Apr-Jun.	None. Occurs at higher elevations than Study Areas	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Davidson's bush-mallow (Malacothamnus davidsonii)	–/–/1B.2	Known from Los Angeles, Monterey, Santa Clara, San Luis Obispo, and San Mateo Counties. Occurs in coastal scrub, chaparral, oak woodland, and riparian woodland in sandy washes; 185-855 meters. Blooms Jun-Jan.	Moderate. Suitable habitat is present, two occurrences in region	No
Dune larkspur (Delphinium parryi ssp. blochmaniae)	–/–/1B.2	Known from Coastal areas of Santa Barbara, San Luis Obispo, and Ventura Counties. Occurs in maritime chaparral, coastal dunes; below 200 meters. Blooms Apr-Jun.	Low. Suitable habitat may be present if maritime chaparral occurs in Study Areas, one occurrence in region	No
Dwarf calycadenia (Calycadenia villosa)	–/–/1B.1	Known from about 20 occurrences in interior foothills of South Coast Ranges in Fresno, Kern*, Monterey, Santa Barbara, and San Luis Obispo Counties. Occurs on rocky, fine soils in chaparral, oak woodland, meadows and seeps, annual grassland; 240-1,350 meters. Blooms May-Oct.	Moderate. Suitable habitat may be present if suitable soil type occurs, two occurrences in region	No
Dwarf soaproot (Chlorogalum pomeridianum var. minus)	–/–/1B.2	Known from widely disjunct populations in Tehama, Colusa, Lake, Sonoma, and San Luis Obispo counties. Occurs in openings in chaparral, annual grasslands, on serpentinite outcrops; 305-1000 meters. Blooms May-Aug.	Moderate. Suitable habitat may be present if serpentinite soil type occurs, two occurrences in region, including one in Study Area	Yes
Eastwood's larkspur (Delphinium parryi ssp. eastwoodiae)	–/–/1B.2	Known from Coastal San Luis Obispo County. Occurs on serpentinite substrates in openings in chaparral, annual grassland; 75-500 meters. Blooms Mar, less often Feb.	Moderate. Suitable habitat may be present if serpentinite soil type occurs, several occurrences in region	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Hardham's evening-primrose (Camissoniopsis hardhamiae)	–/–/1B.2	Known from South Coast Ranges, Monterey and San Luis Obispo Counties. Occurs on sandy, decomposed carbonate in disturbed or burned areas in chaparral, oak woodland; 140-945 meters. Blooms Mar-May.	High. Suitable habitat may be present if suitable soil type and microhabitats occur, several occurrences in region, including one in Study Area	Yes
Hooked popcorn-flower (Plagiobothrys uncinatus)	–/–/1B.2	Known from Monterey, San Benito, Santa Clara, San Luis Obispo, and Stanislaus Counties. Occurs in Chaparral on sandy soils, oak woodland, annual grassland; 300-760 meters. Blooms Apr-May.	Moderate. Suitable habitat is present, and two occurrences in region	No
Hoover's bent grass (Agrostis hooveri)	–/–/1B.2	Known from Southern central coast, southern outer South Coast Ranges: Santa Barbara, San Luis Obispo Counties. Occurs usually in sandy soils in chaparral, closed cone forest, oak woodland, annual grassland; 6-610 meters. Blooms Apr-Jul.	Moderate. Suitable habitat is present, some occurrences in region	No
Hutchinson's larkspur (Delphinium hutchinsoniae)	–/–/1B.2	Known from Monterey County. Occurs in broadleaved upland forest, chaparral, coastal prairie, coastal scrub; below 427 meters. Blooms Mar-Jun.	Moderate. Suitable habitat is present, only one occurrences in region.	No
Indian Valley bush-mallow (Malacothamnus aboriginum)	–/–/1B.2	Known from Inner South Coast Ranges: Fresno, Kings, Monterey, San Benito, Santa Clara, and San Mateo Counties. Occurs on granitic rocky areas in chaparral and oak woodland, often in burned areas; 150-1700 meters. Blooms Apr-Oct.	Moderate. Suitable habitat may be present if granitic rocky microhabitat is present; several occurrences in region	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Indian Valley spineflower (Aristocapsa insignis)	–/–/1B.2	Known from Inner South Coast Range, Monterey and San Luis Obispo Counties. Occurs on sandy soils in oak woodland; 300-600 meters. Blooms May-Sep.	Moderate. Suitable habitat may be present if granitic rocky microhabitat is present; several occurrences in region	No
Jared's pepper-grass (Lepidium jaredii ssp. jaredii)	–/–/1B.2	Known from Inner South Coast Ranges, Carrizo Plain and western San Joaquin Valley from Kern County south to San Luis Obispo County. Occurs in alkaline, adobe soils in grassland, in sinks, alluvial fans, and washes; 335-1005 meters. Blooms Mar-May.	Low. Suitable habitat may be present if alkaline adobe soils occur in Study Areas, only one occurrence in region	No
Jolon clarkia (Clarkia jolonensis)	–/–/1B.2	Known from Northern outer South Coast Ranges, Monterey County. Occurs in chaparral, oak woodland, coastal scrub; 20-660 meters. Blooms Apr-Jun.	High. Suitable habitat is present, and several occurrences in region	No
Jones' layia (Layia jonesii)	–/–/1B.2	Known from Coastal Monterey and San Luis Obispo Counties. Occurs on clay soil or serpentinite outcrops in chaparral and annual grasslands; 5-400 meters. Blooms Mar-May.	Low. Suitable habitat may be present in one Study Area if suitable soil substrates are present; several occurrences in region	No
Kellogg's horkelia (Horkelia cuneata var. sericea)	–/–/1B.1	Known from Coastal California from San Mateo to Santa Barbara Counties, formerly further north. Occurs in openings in coastal scrub, maritime chaparral, on sandy or gravelly soils; 10-200 meters. Blooms Apr-Sep.	None. No suitable habitat is present	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
La Panza mariposa lily (formerly San Luis Obispo mariposa lily) (Calochortus simulans)	–/–/1B.3	Known from Southeastern outer South Coast Ranges with occurrences in Santa Barbara and San Luis Obispo Counties. Occurs in sandy, often granitic, sometimes serpentine soils in chaparral, oak woodland, annual grassland; 395-1,100 meters. Blooms Apr-Jun.	Low. Suitable habitat may be present in one Study Area if suitable sandy soils are present; several occurrences in region	No
Lemmon's jewelflower (Caulanthus lemmonii)	–/–/1B.2	Known from Southeast San Francisco Bay Area, south through the South Coast Ranges and adjacent San Joaquin Valley to Ventura County. Occurs on dry, exposed slopes in grasslands and pinyon-juniper woodland; 80-1220 meters. Blooms Mar-May.	High. Suitable habitat is present, and several occurrences in region	Yes
Mesa horkelia (Horkelia cuneata var. puberula)	–/–/1B.1	Known from Los Angeles, Orange, Santa Barbara, San Luis Obispo, and Ventura Counties; extirpated from Riverside, San Bernardino, and San Diego Counties. Occurs on sandy or gravelly soils in oak woodland, maritime chaparral, and coastal scrub; 70-810 meters. Blooms Feb-Jul, occasionally Sep.	Low. The CNDDB polygon for this species overlaps the study area but there is likely no suitable habitat (sandy or gravelly soils) in the study area ;	Yes
Miles' milk-vetch (Astragalus didymocarpus var. milesianus)	–/–/1B.2	Known from Santa Barbara, San Luis Obispo, and Ventura Counties. Occurs on clay soils in coastal scrub; 20-90 meters. Blooms Mar-Jun.	None. Plant occurs at lower elevations than Study Areas	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Monterey spineflower (Chorizanthe pungens var. pungens)	T/–/1B.2	Known from Northern and Central Coast, San Francisco Bay in Monterey, Santa Cruz, and San Luis Obispo* Counties. Occurs in sandy areas in maritime chaparral, oak woodland, coastal dunes, coastal scrub, annual grassland; 3-450 meters. Blooms Apr-Jun, less often Jul-Aug.	Moderate. Suitable habitat may be present if sandy soils occur in Study Areas, several occurrences in region	No
Most beautiful jewel-flower (Streptanthus albidus ssp. peramoenus)	–/–/1B.2	Known from Eastern San Francisco Bay area, central outer South Coast Ranges in Alameda, Contra Costa, Monterey, Santa Barbara, Santa Clara, San Luis Obispo, and Stanislaus Counties. Occurs on serpentinite outcrops in chaparral, oak woodland, annual grassland, on ridges and slopes; 94-1000 meters. Blooms Apr-Sep, less often Mar and Oct	Moderate. Suitable habitat may be present if serpentine outcrops occur in Study Areas, several occurrences in region	No
Mouse-gray dudleya (formerly San Luis Obispo dudleya) (Dudleya abramsii ssp. murina)	–/–/1B.3	Known from San Luis Obispo County. Occurs on serpentinite in chaparral, oak woodland, annual grassland; 90-440 meters. Blooms May-Jun.	Moderate. Suitable habitat may be present if serpentinite substrates occur in Study Areas, many occurrences in region	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Pale-yellow layia (Layia heterotricha)	–/–/1B.1	Known from Interior foothills of the South Coast Ranges, Transverse Ranges, and Tehachapi Mountains in Fresno, Kings*, Kern*, Monterey*, Santa Barbara, San Luis Obispo*, Ventura, and possibly San Benito Counties. Occurs on alkaline or clay soils in coastal scrub, oak woodland, pinyon- juniper woodland, annual grassland in open areas; 300-1705 meters. Blooms Mar-Jun.	Moderate. Suitable habitat may be present if suitable substrates occur in Study Areas, several occurrences in region	Yes
Palmer's monardella (Monardella palmeri)	–/–/1B.2	Known from Monterey and San Luis Obispo Counties. Occurs on serpentinite in chaparral and oak woodland; 200-800 meters. Blooms Jun-Aug.	Moderate. Suitable habitat may be present if serpentinite substrates occur in Study Areas, several occurrences in region	No
Pecho manzanita (Arctostaphylos pechoensis)	–/–/1B.2	Known from Pecho Hills in coastal mountains of San Luis Obispo County, also Santa Barbara County. Occurs on siliceous shale in chaparral, coastal scrub; 125-850 meters. Blooms Nov-Mar.	Low. Suitable habitat may be present in one Study Area if silaceous shale occurs, only one occurrence in region	No
Pinnacles buckwheat (Eriogonum nortonii)	–/–/1B.3	Known from Restricted to Gabilan Range of Monterey and San Benito Counties. Occurs on sandy soils in chaparral, annual grassland, often on recent burns; 300-975 meters. Blooms May-Aug(Sep).	None. Plant occurs at higher elevations than Study Areas	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Recurved larkspur (Delphinium recurvatum)	–/–/1B.2	Known from Central Valley from Colusa* to Kern Counties. Occurs on alkaline soils in annual grassland, saltbush scrub, oak woodland; 3-790 meters. Blooms Mar-Jun.	Low. Suitable habitat may be present in two Study Area if alkaline soils occur, only one occurrence in region	No
Robust spineflower (Chorizanthe robusta var. robusta)	E/–/1B.1	Known from Coastal central California, from Marin to Monterey County. Occurs on sandy or gravelly areas in coastal scrub, coastal dunes, and openings in oak woodland; 3-300 meters. Blooms Apr-Sep.	Low. Suitable habitat may be present in one Study Area if suitable sandy openings occur, only one occurrence in region	No
Round-leaved filaree (California macrophylla)	–/–/1B.1	Known from Scattered occurrences in the Great Valley, southern North Coast Ranges, San Francisco Bay Area, South Coast Ranges, Channel Islands, Transverse Ranges, and Peninsular Ranges. Occurs in oak woodland, annual grassland on clay soils; 15-1,200 meters. Blooms Mar-May.	Moderate. Suitable habitat may be present if suitable soil types occur, two occurrences in region	No
San Antonio collinsia (Collinsia antonina)	–/–/1B.2	Known from Outer South Coast Ranges in Monterey County. Occurs in chaparral and oak woodland; 280-365 meters. Blooms Mar-May.	None. Plant occurs at higher elevations than Study Areas	No
San Benito fritillary (Fritillaria viridea)	–/–/1B.2	Known from Central Coast Ranges in Fresno, San Benito, Monterey, and San Luis Obispo Counties. Occurs on serpentinite outcrops, on slopes in chaparral; 200-1525 meters. Blooms Mar-May.	Moderate. Suitable habitat may be present in one Study Area if serpentinite substrates occur, one occurrence in region	Yes

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
San Luis mariposa lily (Calochortus obispoensis)	–/–/1B.2	Known from Outer South Coast Range in San Luis Obispo County. Occurs often on serpentine soils in chaparral, coastal scrub, annual grassland; 50-730 meters. Blooms May-Jul.	High. Suitable habitat is present, many occurrences in region	No
San Luis Obispo County lupine (Lupinus ludovicianus)	–/–/1B.2	Endemic to San Luis Obispo County. Occurs on sandstone or sandy soil in oak woodland, openings in chaparral or pine-oak woodland on carbonate substrate; 50-525 meters. Blooms Apr-Jul.	Low. Suitable habitat may be present if sandstone or sandy soils are present in Study Areas, only one occurrence in region	No
San Luis Obispo owl's-clover (Castilleja densiflora var. obispoensis)	–/–/1B.2	Endemic to San Luis Obispo County. Occurs in annual grassland; 10-400 meters. Blooms Mar-May.	None. No suitable habitat is present	No
San Luis Obispo sedge (Carex obispoensis)	–/–/1B.2	Known from Outer South Coast Ranges in Monterey, San Diego, and San Luis Obispo County. Occurs often on serpentine seeps, sometimes gabbro soils in chaparral, coastal prairie, coastal scrub, and annual grassland; 10-820 meters. Blooms Apr-Jun.	High. Suitable habitat is present, several occurrences in region	No
Santa Cruz microseris (Stebbinsoseris decipiens)	–/–/1B.2	Known from Coastal California: scattered occurrences from Marin County to Monterey County. Occurs in mixed oak forest, chaparral, annual grasslands, coastal prairie, coastal scrub, and open grassy areas in other habitat types, sometimes on serpentinite; 10-500 meters. Blooms Apr-May.	Moderate. Suitable habitat is present, one occurrence in region	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Santa Cruz Mountains pussypaws (Calyptridium parryi var. hesseae)	–/–/1B.1	Known from Southern San Francisco Bay, Mount Hamilton, Santa Cruz Mountains, northern inner South Coast Ranges, Monterey, San Benito, Santa Clara, San Luis Obispo, Stanislaus, and Santa Cruz Counties. Occurs in sandy or gravelly, openings in chaparral, oak woodland; 305-1530 meters. Blooms May-Aug.	Low. Suitable habitat may be present if suitable microhabitat conditions occur in Study Areas, one occurrence in region	No
Santa Lucia dwarf rush (Juncus luciensis)	–/–/1B.2	Known from Lassen, Monterey, Modoc, Napa, Nevada, Placer, Plumas, Riverside, Santa Barbara, San Benito, San Diego, Shasta, San Luis Obispo Counties. Occurs in chaparral, meadows and seeps, vernal pools; 300-2040 meters. Blooms Apr-Jul.	Moderate. Suitable habitat is present, two occurrences in region	No
Santa Lucia manzanita (Arctostaphylos luciana)	–/–/1B.2	Endemic to Santa Lucia Range in San Luis Obispo County. Occurs on shale outcrops in chaparral and oak woodland; 350-850 meters. Blooms Dec-Mar.	Moderate. Suitable habitat may be present if shale outcrops occur in Study Areas, several occurrences in region	No
Santa Margarita manzanita (Arctostaphylos pilosula)	–/–/1B.2	Known from South Coast Ranges: near Santa Margarita in Monterey and San Luis Obispo Counties. Occurs on outcrops and slopes in chaparral, oak woodland; 170-1,100 meters. Blooms Dec-May.	High. Suitable habitat is present, several occurrences in region	Yes

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
Shining navarretia (Navarretia nigelliformis ssp. radians)	–/–/1B.2	Known from Interior foothills of South Coast Ranges from Merced County to San Luis Obispo County. Occurs in Mesic areas with heavy clay soils, in swales and clay flats, in oak woodland, grassland; 76-1000 meters. Blooms Apr-Jul.	High. Suitable habitat is present, many occurrences in region	No
Straight-awned spineflower (Chorizanthe rectispina)	–/–/1B.3	Known from Outer South Coast Ranges: Monterey, Santa Barbara, and San Luis Obispo Counties. Occurs often on granitic soils in chaparral, coastal scrub, oak woodland; 85-1,035 meters. Blooms Apr-Jul.	High. Suitable habitat is present, several occurrences in region	No
Toro manzanita (formerly Monterey manzanita) (Arctostaphylos montereyensis5)	–/–/1B.2	Known from Central Coast, Fort Ord, northern outer South Coast Ranges, Toro Mountain, northwestern Monterey County and San Luis Obispo County. Occurs on sandy soils in maritime chaparral, oak woodland, and coastal scrub; 30-730 meters. Blooms Feb-Mar.	Low. Suitable habitat may be present in one Study Area if suitable sandy soils occur, two occurrences in region	No
Umbrella larkspur (Delphinium umbraculorum)	–/–/1B.3	Known from Monterey, Santa Barbara, San Luis Obispo, and Ventura Counties. Occurs in moist areas in oak woodland; 400-1600 meters. Blooms Apr-Jun.	None. No suitable habitat is present	No

Common and Scientific Names	Status[a] (Federal/State/ Other)	Geographic Distribution and General Habitat Description [b]	Species Potential to Occur in Study Area	Occurrences in Study Area (Y/N)
woodland woolythreads (Monolopia gracilens)	–/–/1B.2	Known from Alameda, Contra Costa, Monterey, San Luis Obispo, Santa Clara, Santa Cruz, and San Mateo Counties. Occurs on serpentinite soils in openings in mixed oak woodland, chaparral, oak woodland, and annual grassland; 100-1200 meters. Blooms Mar-Jul, less often Feb.	Low. Suitable habitat may be present in Study Areas if serpentinite soils and suitable microhabitat conditions occur, one occurrence in region	No
Yellow-flowered eriastrum (Eriastrum luteum)	–/–/1B.2	Known from Monterey and San Luis Obispo Counties. Occurs on sandy or gravelly soils in mixed oak forest, chaparral, oak woodland; 290-1000 meters. Blooms May-Jun.	Moderate. Suitable habitat may be present in Study Areas if suitable soil types occur, several occurrences in region	No

Source: ICF, 2013
[a] **Status explanations:**
Federal
E = Listed as endangered under the federal ESA.
T = Listed as threatened under the federal ESA.
— = No listing status.
State
E = Listed as endangered under CESA.
T = Listed as threatened under CESA.
R =Listed as rare under the CESA. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
— = No listing status.
Other
1B = CRPR List 1B species: rare, threatened, or endangered; rare in California and elsewhere.
2B = CRPR List 2B species: rare, threatened, or endangered; rare in California but not elsewhere.
.1 = seriously endangered in California (over 80% of occurrences threatened–high degree and immediacy of threat).
.2 = fairly endangered in California (20-80% occurrences threatened).
.3 = not very endangered in California (<20% occurrences threatened).
[b] **Distribution information**
* = presumed extirpated in that county.
? = status within county unknown.

Table 3.13-2 Special-Status Wildlife Species Potentially Occurring in Coast Corridor Study Area

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Fish				
Steelhead - south/central California coast DPS (Oncorhynchus mykiss irideus)	T/SSC/-	Occurs in rivers and creeks from the Pajaro River south to, but not including, the Santa Maria River.	High. Study areas in the range of the species and the Salinas River and tributaries provide habitat for this species.	Not in CNDDB but species is noted to occur in the Salinas River according to the National Marine Fisheries Service (2007)b
Invertebrates				
Atascadero June beetle (Polyphylla nubile)	-/-/-	Known only from sand dunes in San Luis Obispo County	None. No suitable habitat in the Study Areas.	No
California linderiella (Linderiella occidentalis)	-/-/-	Central Valley of California and central coastal California. Vernal pools, swales, and other ephemeral wetlands found in annual grasslands.	Moderate. Potential habitat in annual grasslands. Species known to occur in region.	No
Conservancy fairy shrimp (Branchinecta conservation)	E/-/-	Disjunct occurrences in Butte, Tehama, Glenn, Placer, Yolo, Solano, Merced, Stanislaus, and Ventura counties. Found in vernal pools in swales. Most records are in large turbid pools yet they have been found in a few instances in smaller pools with relatively clear water.	Low. Potential habitat in annual grasslands. Species not known to occur in region.	No

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Lompoc grasshopper (Trimerotropis occulens)	-/-/-	Occurs in San Luis Obispo and Santa Barbara counties. Little is known about the species habitat requirements. CNDDB records indicate that the species is found on exposed, weathered shale.	Low. Potential habitat in annual grasslands and one occurrence in the region.	No
San Luis Obispo pyrg (Pyrgulopsis taylori)	-/-/-	Occurs in San Luis Obispo County. Snail species found in freshwater habitats, typically springs and creeks.	Moderate. Potential habitat in streams and a few occurrences in the region.	No
Vernal pool fairy shrimp (Branchinecta lynchi)	T/-/-	Occurs in the Central Valley from Shasta County to Tulare County and the central and southern Coast Ranges from northern Solano County to Ventura County. Occurs in vernal pools and seasonal wetlands found in annual grasslands.	Moderate. Potential habitat in annual grasslands. Several occurrences in the region.	No
Amphibians				
California red-legged frog (Rana draytonii)	T/SSC/-	Occurs primarily in the foothills of the central Coast Ranges, with isolated populations in the Sierra Nevada. Ponds and streams with a minimum 11–20 weeks of water for larval development, and upland refugia for aestivation. Recovery Plan identifies Diablo Range and Salinas Valley as part of historic range.	High. Suitable habitat in Study Areas and numerous occurrences in the region.	No

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
California tiger salamander (central California) (Ambystoma californiense)	T/T/-	Central Valley from Sacramento County south to Kern County, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from San Francisco Bay area south to northeastern San Luis Obispo County. Small ponds or vernal pools in annual grasslands and oak woodlands for aquatic habitat; rodent burrows or soil crevices for adult cover during the summer.	Moderate. Suitable habitat in Study Areas and a few occurrences in the region.	No
Coast Range newt Taricha torosa	-/SSC/-	Occurs from Mendocino County south through the Coast Range and on into coastal areas of southern California. Found in woodlands that are interspersed with grassland and chaparral. Breeding takes place in streams, ponds, and lakes.	High. Suitable habitat in Study Areas and several occurrences in the region.	No
Foothill yellow-legged frog Rana boylii	-/SSC/-	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet. Creeks or rivers in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby.	Moderate. Potentially suitable habitat in Study Area and a few occurrences in the region.	No
Western spadefoot toad Spea hammondii	-/SSC/-	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California. Seasonal streams and seasonal wetlands, such as vernal pools in annual grasslands.	High. Suitable habitat in Study Areas and numerous occurrences in the region.	Yes

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Reptiles				
Black legless lizard Anniella pulchra nigra	-/SSC/-	Subspecies currently distributed in Monterey County between Salinas and Carmel Rivers. Associated with a variety of vegetation types on sandy soils with accessible moisture.	Low. Study areas outside species known range.	No
Coast horned lizard Phrynosoma blainvillii	-/SSC/-	Occurs in select regions of the Coast Range, the Sierra Nevada foothills, parts of the Central Valley, South Coast, Tehacapi, Transverse, and Peninsular ranges. Inhabits sandy areas such as washes, flood plains, or windblown deposits. Usually associated with grassland, open chaparral, open coniferous forest, coastal sage scrub, and broadleaf woodlands.	Moderate. Suitable habitat in Study Areas and some occurrences in the region.	No
San Joaquin whipsnake Masticophis flagellum ruddocki	-/SSC/-	Occurs in the southern half of the Central Valley and coast ranges south of San Francisco. Occur in open terrain and most abundant in grasslands, desert, scrub, and chaparral.	High. Suitable habitat in Study Area and numerous occurrences in region.	Yes
Silvery legless lizard Anniella pulchra pulchra	-/SSC/-	Patchily distributed from Antioch south along the coast, foothills, San Joaquin Valley, and southern Sierra Nevada. Associated with a variety of vegetation types on sandy soils with accessible moisture.	Moderate. Suitable habitat in Study Areas	No

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Two-striped garter snake Thamnophis hammondii	-/SSC/-	Occurs from the Diablo Range and the Salinas Valley south along the South Coast and Transverse ranges to the Mexican border, and on Catalina Island. Associated with permanent and semi-permanent bodies of water in a variety of habitats. Forages primarily along streams and uses mammal burrows and crevices at times for upland cover.	Moderate. Suitable habitat in Study Areas and one occurrence in the region. Species likely not typically reported to CNDDB.	No
Western pond turtle Emys marmorata	-/SSC/-	Range spans across California west of the Sierra-Cascade crest, below 5,000 feet in elevation. Forages in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nests in nearby uplands with low, sparse vegetation.	High. Suitable habitat in Study Areas and numerous occurrences in region.	Yes
Birds				
American peregrine falcon Falco peregrinus anatum	D/D(FP)/BCC	Permanent resident along the north and south Coast Ranges. May summer in the Cascade and Klamath Ranges and through the Sierra Nevada to Madera County. Winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range. Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations	Low. The CNDDB polygon for this species overlaps the study area but there is likely no suitable nesting habitat (cliffs) in the study areas.	Yes

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Bank swallow Riparia riparia	-/T/-	Occurs along the Sacramento River from Tahama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County. Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam.	High. There are records for colonies along the Salinas River. Portions of the study areas may include suitable habitat.	Yes
Burrowing owl Athene cunicularia	-/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast. Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	High. Suitable habitat in Study Areas and numerous occurrences in region.	No
California condor Gymnogyps californianus	E/E/-	Populations exist in central and southern California, northern Arizona, and southern Utah, as well as northern Baja California. Species nests primarily in cavities located on steep rock formations or in the burned out hollows of old-growth conifers with less typical nesting occurring on cliff ledges, cupped broken tops of old-growth conifers, and nests of other species. Forage widely in open terrain of foothill grassland and oak savanna habitats.	Low. No suitable nesting habitat in the Study Areas (cliffs or old growth trees) but species could forage in Study Areas. CNDBB record polygon is large and actual nesting habitat is far removed from the Study Areas.	Yes

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
California horned lark Eremophila alpestris actia	-/-/WL	Year-round range spans most of lowland California. Nests and forages in open habitats with sparse vegetation, including grasslands and fallow agricultural fields.	Moderate. Suitable habitat is present and some occurrences in the region.	No
California least tern Sternula antillarum browni	E/E(FP)/-	The Pacific Coast from San Francisco to Baja California; winters in Mexico; when feeding, follows schools of fish and is sometimes seen as far north as southern Oregon. Prefers undisturbed nest sites on open or sparsely vegetated, sandy, or gravelly shores on beaches or near shallow-water estuaries where it often feeds; has reportedly also nested on landfills and paved areas.	None. No suitable habitat in the Study Areas.	No
Ferruginous hawk Buteo regalis	-/-/BCC,WL	Winter range spans most of California except the higher elevations of the Sierra Nevada and northern Coast Ranges; does not nest in California. Forages most commonly in grasslands and shrublands; also forages in agricultural fields.	Moderate. Suitable winter foraging habitat present. A few records in the region.	No
Golden eagle *Aquila chrysaetos*	-/FP/BCC,WL	Foothills and mountains throughout California. Uncommon nonbreeding visitor to lowlands such as the Central Valley. Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals.	Low-Moderate. Could nest in tall trees in Study Areas if present but typical nesting habitat not likely present. Suitable foraging habitat is present	Yes

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Grasshopper sparrow *Ammodramus savannarum*	-/SSC/-	Breeding range spans much of the Central Valley and California coast, but populations are typically localized and disjunct; most individuals migrate, although some may be present year-round. Nests and forages in dense grasslands; favors a mix of native grasses, forbs, and scattered shrubs.	Low-Moderate. Suitable habitat present but only one occurrence in the region.	No
Great blue heron *Ardea herodias*	-/-/-	Year-round range spans most of California except the eastern portion of the State and the highest elevations; winter range expands to include eastern California. Nests colonially in tall trees; forages in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures.	High. Suitable foraging and nesting habitat is present. Only one rookery reported in the region, yet species typically goes unreported.	No
Least Bell's vireo *Vireo bellii pusillus*	E/E/-	Formerly a common and widespread summer resident throughout Sacramento and San Joaquin valleys, and in the coastal valleys and foothills from Santa Clara County south, but its numbers have drastically declined, and the species has vanished from much of its California range. Nests and roosts in low riparian thickets of willows and shrubs, usually near water but sometimes along dry, intermittent streams; other associated vegetation includes cottonwood trees, blackberry, mulefat, and mesquite (in desert). Occurred historically in the Salinas Valley. There are CNDDB records around Paso Robles.	Low-Moderate. Suitable habitat is present. Species is rare but there are recent sightings in the region.	Yes

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Merlin *Falco columbarius*	-/-/WL	Winter range encompasses most of California except the highest elevations; does not breed in California. Forages in a wide variety of habitats, but in the Central Valley is most common around agricultural fields and grasslands	Moderate. Suitable winter foraging habitat present. A few records in the region.	No
Prairie falcon Falco mexicanus	-/-/BCC,WL	Year-round range includes eastern California, the Coast Ranges, and much of southern California; winter range expands to include the Delta, Central Valley, and coastal California. Forages most commonly in grasslands and low shrublands; also forages in agricultural fields.	High. Suitable habitat is present and numerous records in the region.	Yes
Purple martin Progne subis	-/SSC/-	Breeding range includes the Sierra Nevada, Cascade Range, portions of the Coast Ranges and coast, and parts of southern California; extirpated from the Delta, and nesting in the Central Valley has been reduced to transportation structures in and around the city of Sacramento. Nests in tree cavities, bridges, utility poles, lava tubes, and buildings; forages in foothill and low montane oak and riparian woodlands, and less frequently in coniferous forests and open or developed habitats.	Low. Potentially suitable habitat is present but the species is rare in the region.	No

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Tricolored blackbird Agelaius tricolor	-/SSC/-	Year-round resident throughout the Central Valley and the central and southern coasts, with additional scattered locations throughout California. Nests colonially in large, dense stands of freshwater marsh, riparian scrub, and other shrubs and herbs; forages in grasslands and agricultural fields.	Moderate. Suitable habitat is present but the species is rare in the region.	Yes
White-tailed kite Elanus leucurus	-/FP/-	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border. Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	High. Suitable habitat is present and species is relatively common in the region.	Yes
Yellow warbler Dendroica petechial brewsteri	-/SSC/BCC	Range includes coastal and northern California and the Sierra Nevada below approximately 7,000 feet; mostly extirpated from the southern Sacramento and San Joaquin valleys. Nests and forages in early successional riparian habitats.	Moderate. Suitable habitat is present yet the species is rare in the region.	Yes

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Mammals				
American badger Taxidea taxus	-/SSC/-	In California, badgers occur throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties. Badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the primary habitat requirements for the species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground.	High. Suitable habitat is present and species is common in the region.	Yes
Big-eared kangaroo rat Dipodomys venustus elephantinus	-/SSC/-	Found in Monterey and San Benito counties. Occurs in chaparral-covered slopes of the southern part of the Gabilian Range in the vicinity of Pinnacles.	Low. Study areas are outside of the species known range.	No
Giant kangaroo rat Dipodomys ingens	E/E/-	Current population fragmented into six major geographic units: Ciervo-Panoche in western Fresno and eastern San Benito counties; Kettleman Hills in southwestern Kings County; San Juan Creek Valley in eastern San Luis Obispo County; the Lokenr area, Elk Hills in western Kern County; Carrizo Plain in eastern San Luis Obispo County; and Cuyama Valley along the eastern Santa Barabara-San Luis Obispo County line. Occurs in annual grasslands and shrub communities with sandy-loam soils, typically with sparse vegetation.	Low. Study areas are outside of the species known range	No

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Hoary bat Lasiurus cinereus	-/-/M	Ranges widely, but populations in the Central Valley are most likely non-reproductive or migratory. Typically roosts alone in a variety of broadleaf tree species such as cottonwood and sycamore; also found roosting in conifers. May be found in a range of vegetation and roost substrates during migration.	Moderate. Suitable habitat is present but there are few records in the region.	No
Pallid bat Antrozous pallidus	-/SSC/H	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations. Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts.	Moderate-High. Suitable habitat is present and there are multiple records in the region.	No
Salinas pocket mouse Perognathus inornatus psammophilus	-/SSC/-	Found in the Salinas Valley in Monterey and San Luis Obispo counties. Occurs in annual grasslands and desert shrub communities with fine-textured, sandy, friable soils.	Moderate-High. Potentially suitable habitat is present and there are multiple records in the region.	No
San Joaquin kit fox Vuples macrotis mutica	E/T/-	Occurs primarily in the southern San Joaquin Valley but is also found in Carrizo Plain, the inner portions of the Coast Range between Santa Clara County and San Luis Obispo County, and there are records in Contra Costa, Alameda, and San Joaquin Counties. The species occurs in grasslands and alkali scrub.	High. Suitable habitat is present and there are several records within the region and in the Study Areas.	Yes

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
San Joaquin pocket mouse Perognathus inornatus inornatus	-/-/-	Year-round range spans the San Joaquin Valley, Delta, Sacramento Valley through Colusa County, and portions of the southern Coast Ranges. Inhabits grassland and scrub habitats with friable soils.	Low-Moderate. Suitable habitat is present but only one record within the region.	Yes
Townsend's big-eared bat Corynorhinus townsendii	-/SSC/H	Year-round range spans most of California except the highest elevations of the Sierra Nevada south of Lake Tahoe. This species may use several alternate roost sites (Woodruff and Ferguson 2005). Typically roosts in colonies of fewer than 100 individuals in caves or mines; occasionally roosts in buildings or bridges, and rarely, hollow trees; forages in all habitats except alpine and subalpine, although most commonly in mesic forests and woodlands.	Low. No typical roosting habitat is present in the Study Areas but may use them for foraging. Only a few records in the region.	No

Common and Scientific Names	Status[a] (Federal/ State/ Other)	Geographic Distribution and General Habitat Description	Species Potential to Occur in Study Area	CNDDB Occurrences in Study Area (Y/N)
Western mastiff bat *Eumops perotis californicus*	-/SSC/H	Year-round range spans most of California, with records absent from the northwest and northeast portions of the State. Typically roosts in crevices in cliffs and rocky outcrops, in colonies of fewer than 100 individuals. May also roost in bridges, caves and buildings that allow sufficient height and clearance for dropping into flight. There is at least one record of this species roosting in an untrimmed palm tree. Forages in a variety of grassland, shrub, and wooded habitats, including riparian and urban areas, although most commonly in open, arid lands.	Low. No suitable roosting habitat is present in the Study Areas but may use them for foraging. Only one record in the region.	No

[a] **Status explanations:**

Federal

E = Listed as endangered under the federal ESA.
T = Listed as threatened under the federal ESA.
C = Species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
D = Delisted
— = No listing status.

State

E = Listed as endangered under CESA.
T = Listed as threatened under CESA.
D = Delisted
FP = Fully protected
SSC = Species of Special Concern
— = No listing status.

Other

BCC = USFWS - Bird of Conservation Concern
WL = California Department of Fish and Wildlife - Watch List
H = Western Bat Working Group – High level of concern
M = Western Bat Working Group – Medium level of concern

[b] National Marine Fisheries Service Southwest Regional Office, 2007

Rivers and Creeks

The most prominent river in the study area is the Salinas River. No proposed ~~improvements~~ components would involve crossing the Salinas River. Other streams in the study area include San Marcos Creek, Santa Margarita Creek, Yerba Buena Creek, and San Lorenzo Creek. The areas around each creek are considered potential wildlife habitat.

Wetlands and Waters

Wetlands are considered a unique biological resource for both sensitive plant and wildlife communities. A wetland is defined by meeting one of the following three jurisdictional criteria: presence of wetland hydrology, predominance of hydrophytic (literally, water-loving) plants, and presence of hydric soils. According to USFWS's inventory of wetlands (the NWI) four types of wetlands and waters are present in the study area. Wetlands include freshwater emergent wetlands, freshwater forested/shrub wetlands; waters includes freshwater ponds and riverine environments (see **Figure 3.13-3**). The two types of wetlands present in the study area are described below.

Freshwater Emergent Wetlands are characterized by erect, rooted aquatic plants that thrive under frequent flood conditions. In wetter areas, this includes common cattail, tule bulrush, river bulrush, and arrowhead. On the drier margins of these wetlands, big leaf sedge, baltic rush, redroot nutgrass and saltgrass can be found. Freshwater emergent wetlands occur in virtually all exposures and slopes, however they are most often found on level to gently rolling topography.[21]

Freshwater Forested/Shrub Wetlands often occur adjacent to riverine habitats. They are characterized by woody vegetation, including broad-leaved deciduous.[22]

There are situations where riverine and freshwater pond habitats could possess emergent vegetation and thus be classified as wetlands. Nonetheless, all of the waters assessed herein are afforded the same protection under the CWA.

Habitat Conservation Plans and Habitat Reserves

There are no adopted Habitat Conservation Plans in the study area. The Big Sandy Wildlife Area, occupying two sections of land in the study area, is a reserve under the jurisdiction of the CDFW. CDFW has not to date adopted any plan to more specifically regulate resources within Big Sandy.[23]

[21] Mayer and Laudenslayer, 1988, p. 124

[22] Cowardin et al., 1979

[23] Personal Communication with Bob Stafford on March 8, 2013

3.13.4 ENVIRONMENTAL CONSEQUENCES

3.13.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing operations and physical components, and assumes the perpetuation of existing freight and passenger service. Under the No Build Alternative, passenger rail operations between Salinas and San Luis Obispo would not change. Coast Starlight service would continue through the corridor. Pacific Surfliner service to southern California would continue to originate/terminate in San Luis Obispo. The only physical ~~improvement~~ component expected under the No Build Alternative would be the installation of PTC along the Corridor, which would provide increased safety for freight and passenger trains. PTC equipment would likely be installed within the existing railroad ROW, likely in close proximity to the rail bed. These are highly developed areas that are unlikely to contain protected species or sensitive habitat areas. As a result, the No Build Alternative would be unlikely to result in any substantial new impacts to biological resources.

3.13.4.2 Build Alternative

Construction-Period Effects

Table 3.13-3 summarizes potential temporary construction-period effects for Build Alternative components. Critical habitat for special-status species is typically recorded in acreages for terrestrial or wetland habitat and linear feet for watercourses, such as streams and river.

Certain ~~proposed~~ physical components ~~improvements~~, including ~~such as~~ curve realignments and new or extended sidings, ~~may in some cases~~ would diverge substantially from the existing railroad ROW. Construction (and as described further below, operation) of ~~such~~ these physical components ~~improvements~~ would require staging areas on adjacent lands that may be protected for sensitive vegetation, special-status species, critical habitat for protected species, wetlands, or non-jurisdictional waters. Access routes to construction sites and construction staging areas could disturb biological resources by traveling through and potentially damaging these sensitive habitats. These uses would be temporary, lasting for the duration of construction. Where possible, these protected areas would be returned to pre-construction conditions. ~~rehabilitated.~~

Table 3.13-3 Build Alternative: Potential Construction-Period Biological Resource Impacts

Build Alternative Components	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Salinas Powered Switch	None	None	None	None	None
Upgrades to Existing Alignment Section #1	None	None	None	None	None
Spence Siding Extension	0.1 freshwater emergent wetland	10 animal species	None	Freshwater Emergent Wetland – 0.09 Riverine – 0.03	129 linear feet
Upgrades to Existing Alignment Section #2	None	None	None	None	None
Gonzales Powered Switch	None	None	None	None	None
Soledad Powered Switch	None	None	None	None	None
Soledad New Passenger Station	None	None	None	None	None
Harlem/Metz Curve Realignments	52.8 ac grassland 0.1 ac riverine 1.0 ac valley foothill riparian	30 animal species 6 plant species	None	Riverine – 0.13	302 linear feet

Build Alternative Components	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Chalone Creek New Siding	21.9 ac grassland 0.1 coastal oak woodland 0.7 ac freshwater emergent wetland 1.2 ac valley foothill riparian	29 animal species 4 plant species	None	Freshwater Emergent Wetland – 0.66	None
Upgrades to Existing Alignment Section #3	None	None	None	None	None
Coburn Curve Realignments	32.2 ac grassland 0.1 ac riverine	24 animal species 1 plant species	None	Riverine – 0.12	61 linear feet
King City Siding Extension	4.0 ac grassland 0.1 ac freshwater emergent wetland	21 animal species 3 plant species	None	Freshwater Emergent Wetland – 0.05	133 linear feet
King City New Passenger Station	None	None	None	None	None
King City Powered Switch	None	None	None	None	None
Upgrades to Existing Alignment Section #4	None	None	None	None	None
MP 165 Curve Realignment	21.8 ac grassland 0.2 freshwater forested/shrub wetland 0.5 ac freshwater pond	24 animal species 3 plant species	None	Freshwater Forested/Shrub Wetland – 0.24 Freshwater Pond – 0.49	403 linear feet

Build Alternative Components	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
San Lucas New Siding	8.9 ac grassland 0.8 ac valley foothill riparian	26 animal species 2 plant species	None	None	None
Upgrades to Existing Alignment Section #5	None	None	None	None	None
MP 172 Track Realignment	8.5 ac grassland 0.8 ac valley foothill riparian	26 animal species 3 plant species	None	None	785 linear feet
San Ardo Powered Switch	None	None	None	None	None
Getty/Bradley Curve Realignments	54.3 ac grassland 1.3 ac blue oak woodland 0.9 ac coastal scrub 0.7 ac freshwater pond 3.5 ac riverine 11.7 ac valley foothill riparian	36 animal species 4 plant species	None	Freshwater Pond – 0.65 Riverine – 3.49	1,636 linear feet
Bradley Siding Extension	34.1 ac grassland 0.7 ac riverine 4.5 ac valley foothill riparian	35 animal species 3 plant species	Vernal pool fairy shrimp – 5 ac	Riverine – 0.73	109 linear feet
Bradley Powered Switch)	None	None	None	None	None
Upgrades to Existing Alignment Section #6	None	None	None	None	None

Build Alternative Components	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Upgrades to Existing Alignment Section #7	None	None	None	None	None
McKay/Wellsona Curve Realignments	6.0 ac blue oak woodland 12.4 ac coastal oak woodland 12.6 ac freshwater emergent wetland 1.2 ac freshwater forested/shrub wetland 0.1 ac riverine	16 animal species 10 plant species	None	Freshwater Emergent Wetland – 12.57 Freshwater Forested/Shrub Wetland – 1.22 Riverine – 0.11	None
McKay East Powered Switches	None	None	None	None	None
Wellsona New Siding	4.5 ac grassland 8.8 ac blue oak woodland 14.4 ac coastal oak woodland 11.7 ac freshwater emergent wetland 1.6 ac freshwater forested/shrub wetland 0.1 ac riverine	32 animal species 9 plant species	South-Coast California steelhead – 66 linear feet	Freshwater Emergent Wetland – 11.68 Freshwater Forested/Shrub Wetland – 1.65 Riverine – 0.15	123 linear feet
Upgrades to Existing Alignment Section #8	None	None	None	None	None

Build Alternative Components	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Wellsona/Paso Robles Curve Realignments	8.8 ac grassland 2.3 ac blue oak woodland 1.0 ac coastal oak woodland	26 animal species 8 plant species	None	None	None
Templeton Siding	7.3 ac grassland 1.2 ac blue oak woodland 0.5 ac freshwater emergent wetland 2.1 freshwater forested/shrub wetland 0.8 ac riverine 0.3 ac valley foothill riparian	30 animal species 8 plant species	None	Freshwater Emergent Wetland – 0.52 Freshwater Forested/Shrub Wetland – 2.11 Riverine – 0.77	267 linear feet
Templeton/Henry Curve Realignments	1.7 ac grassland 2.5 ac blue oak woodland 0.1 ac blue oak-foothill pine 6.2 ac coastal oak woodland 3.3 ac unknown shrub type	23 animal species 8 plant species	None	None	None
Upgrades to Existing Alignment Section #9	None	None	None	None	None

Build Alternative Components	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Henry/Santa Margarita Curve Realignment	44.5 ac grassland 25.1 ac blue oak-foothill pine 1.6 ac coastal oak woodland 10.1 ac coastal scrub 3.4 ac freshwater emergent wetland 3.3 ac freshwater forested/shrub wetland 1.1 ac freshwater pond 4.8 ac riverine 0.9 ac valley oak woodland	33 animal species 19 plant species	California red-legged frog – 0.001 ac South-Coast California steelhead – 1,362 linear feet	Freshwater Emergent Wetland – 3.40 Freshwater Forested/Shrub Wetland – 3.34 Freshwater Pond – 1.14 Riverine – 4.75	5,719 linear feet
Santa Margarita Powered Switch	None	None	None	None	None

Build Alternative Components	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Cuesta Second Main Track	10.2 ac grassland 5.4 ac blue oak woodland 14.8 ac coastal oak woodland 2.1 ac coastal scrub 0.1 ac freshwater emergent wetland 6.7 ac freshwater forested/shrub wetland 1.4 ac riverine 1.5 ac valley oak woodland	29 animal species 23 plant species	California red-legged frog – 46 ac	Freshwater Emergent Wetland – 0.14 Freshwater Forested/Shrub Wetland – 6.67 Freshwater Pond – 0.04 Riverine – 1.41	5,986 linear feet
Upgrades to Existing Alignment Section #10	None	None	None	None	None

Source: ICF, 2013

Generally, construction of any of the ~~proposed~~ physical components ~~improvements that would be placed within~~ in the existing railroad ROW (i.e., rail and track upgrades, signal upgrades, and powered switches) would result in little or no impact to adjacent protected lands and special status species~~, as such~~ because construction work would take place entirely within the existing ~~rail transportation corridor~~ ROW. ~~Therefore, all of the existing alignment areas listed in the Table below are noted as having no sensitive biological resources.~~

As identified in **Table 3.13-3** above, many of the ~~proposed~~ Build Alternative physical components ~~improvements~~ that would require use of land outside of the existing railroad ROW have greater potential to impact biological resources. Most of the temporary impact areas for curve realignments and the second mainline include substantial areas of land not currently in transportation use. Some of these areas host sensitive habitats and protected species, ~~of note is the~~ including the critical habitat areas of the California Red-Legged Frog located within the area of the proposed second mainline near Cuesta Grade and that of the South-Coast California Steelhead located within the Henry/Santa Margarita Curve Realignment. Temporary impacts ~~associated with one~~ from the curve realignment at Getty/Bradley have the potential to intrude into the river during construction. As discussed above, construction activities have the potential to introduce dust, noise, fuel, and other disturbances that could indirectly affect species within the vicinity of the project alignment. The measures listed below would avoid or minimize any potential indirect effects, and the identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review.

Operational Effects

Permanent impact areas comprise the potential footprint of the new component ~~improvement~~ or extended ROW necessary for the specific ~~improvement~~ component.

For ~~those elements~~ the components of the Build Alternative that could be constructed within or immediately adjacent to the railbed, impacts to biological resources and wetlands ~~are not considered~~ would not be ~~considered~~ significant because it is unlikely that sensitive biological resources are located within the railbed, due to train operations, and unsuitable habitat such as rocks, dirt, and the railway itself. ~~This is expected to~~ These Build Alternative components include track and signal upgrades and new powered switches. There is some potential for biological resources to be present outside of the railbed but within the railroad ROW. New stations are also expected to have non-significant impacts to biological resources, since they are located in urban areas and mostly surrounded by developed lands.

Outside of the railroad ROW, curve realignments, several sidings, and siding extensions could have permanent impacts to biological resources. This assessment is intended to represent worst case conditions; conservative (i.e., large) impact buffers were used and the maximum potential footprint for each of the components ~~improvements~~ was assumed. **Table 3.13-4** summarizes the potential permanent impacts to biological resources that are associated with the ~~various~~ components of the Build Alternative.

As summarized in **Table 3.13-4** below, potential permanent impacts ~~are most likely associated with~~ would most likely occur from the curve realignments and second mainline, as each would require lands outside the existing railroad ROW where sensitive biological resources are or are suspected of being present.

The second mainline has the potential to impact approximately 26 acres of California red-legged frog habitat, several special-status species, and almost 20 acres of sensitive vegetation communities. The Bradley siding extension may impact up to 7 acres of vernal pool fairy shrimp habitat and as many as 36 special-status animal species. The Harlem/Metz curve realignments may impact over 15 acres of sensitive vegetation communities and 26 special-status animal species. The McKay/Wellsona curve realignments and the Wellsona new siding may each impact over 7 acres of freshwater emergent wetlands, and several special-status species.

Additional potential biological resource impacts would result from the ~~various~~ other physical ~~improvements~~ components.

There is considerable uncertainty whether some or all of the Build Alternative ~~improvements~~ components would be carried forward. Physical ~~improvements~~ components likely to be carried forward are those that most cost-effectively improve rail service. ~~Elements~~ Components of the Build Alternative that would require substantial biological permitting and/or mitigation would likely be deemed less feasible and less cost-effective than elements without conditions ~~such hindrances~~. Information in this ~~document~~ Program EIS/EIR will be useful in the future preparation of detailed design plausibility for various improvements.

While future design efforts ~~are likely to make every effort to develop alignment and improvement options that~~ will include options to minimize impact to these resources to the extent feasible, in some cases, construction and operation of the ~~proposed~~ physical ~~improvements~~ components could permanently remove or alter habitat outside of the existing railroad ROW and could result in significant/substantial effects on protected species and/or their habitat.

Table 3.13-4 Build Alternative: Potential Operational Biological Resources Impacts

Build Alternative Component	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage/ Linear Feet)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Salinas Powered Switch	None	None	None	None	None
Upgrades to Existing Alignment Section #1	None	None	None	None	None
Spence Siding Extension	None	5 animal species	None	Pond – 0.00 Riverine – 0.01	83 linear feet
Upgrades to Existing Alignment Section #2	None	None	None	None	None
Gonzales Powered Switch	None	None	None	None	None
Soledad Powered Switch	None	None	None	None	None
Soledad New Passenger Station	None	None	None	None	None
Harlem/Metz Curve Realignments	15.0 ac grassland 0.3 ac valley foothill riparian	26 animal species 5 plant species	None	None	None
Chalone Creek New Siding	10.4 ac grassland 0.6 ac freshwater emergent wetland 1.1 ac valley foothill riparian	28 animal species 2 plant species	None	Freshwater Emergent Wetland – 0.60	None
Upgrades to Existing Alignment Section #3	None	None	None	None	None

Build Alternative Component	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage/ Linear Feet)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Coburn Curve Realignments	5.5 ac grassland	19 animal species 1 plant species	None	None	None
King City Siding Extension	3.5 ac grassland	18 animal species 3 plant species	None	None	100 linear feet
King City New Passenger Station	None	None	None	None	None
King City Powered Switch	None	None	None	None	None
Upgrades to Existing Alignment Section #4	None	None	None	None	None
MP 165 Curve Realignment	6.3 ac grassland 0.1 ac freshwater forested/shrub wetland 0.2 ac freshwater pond	24 animal species 3 plant species	None	Freshwater Forested/Shrub Wetland – 0.13 Freshwater Pond – 0.15	100 linear feet
San Lucas New Siding	7.7 ac grassland 0.9 ac valley foothill riparian	26 animal species 2 plant species	None	None	None
Upgrades to Existing Alignment Section #5	None	None	None	None	None
MP 172 Track Realignment	1.4 ac grassland	19 animal species 2 plant species	None	None	150 linear feet
San Ardo Powered Switch	None	None	None	None	None

Build Alternative Component	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage/ Linear Feet)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Getty/Bradley Curve Realignments	16.2 ac grassland 0.3 ac riverine 3.8 ac valley foothill riparian	35 animal species 3 plant species	None	Riverine – 0.26	417 linear feet
Bradley Siding Extension	48.0 ac grassland 0.3 ac riverine 3.7 ac valley foothill riparian	36 animal species 3 plant species	Vernal pool fairy shrimp – 7 ac	Riverine – 0.27	109 linear feet
Bradley Powered Switch)	None	None	None	None	None
Upgrades to Existing Alignment Section #6	None	None	None	None	None
Upgrades to Existing Alignment Section #7	None	None	None	None	None
McKay/ Wellsona Curve Realignments	2.4 ac blue oak woodland 4.6 coastal oak woodland 7.2 ac freshwater emergent wetland 0.7 freshwater forested/shrub wetland	13 animal species 10 plant species	None	Freshwater Emergent Wetland – 7.20 Freshwater Forested/Shrub Wetland – 0.65 Riverine 0.00	None
McKay East Powered Switches	None	None	None	None	None

Build Alternative Component	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage/ Linear Feet)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Wellsona New Siding	3.2 ac grassland 6.1 ac blue oak woodland 8.1 coastal oak woodland 7.2 ac freshwater emergent wetland 0.8 ac freshwater forested/shrub wetland	30 animal species 9 plant species	South-Coast California steelhead – 61 linear feet	Freshwater Emergent Wetland – 7.20 Freshwater Forested/Shrub Wetland – 0.82 Riverine – 0.04	124 linear feet
Upgrades to Existing Alignment Section #8	None	None	None	None	None
Wellsona/ Paso Robles Curve Realignments	3.8 ac grassland	22 animal species 7 plant species	None	None	None
Templeton Siding	7.3 ac grassland 1.5 ac blue oak woodland 0.7 ac freshwater emergent wetland 0.8 ac freshwater forested/shrub wetland 0.4 ac valley foothill riparian	28 animal species 8 plant species	None	Freshwater Emergent Wetland – 0.67 Freshwater Forested/Shrub Wetland – 0.84 Riverine – 0.05	226 linear feet
Templeton/ Henry Curve Realignments	0.6 ac grassland 0.6 ac blue oak woodland 2.1 ac coastal oak woodland 0.7 ac unknown shrub type	23 animal species 8 plant species	None	None	None
Upgrades to Existing Alignment Section #9	None	None	None	None	None

Build Alternative Component	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage/ Linear Feet)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
Henry/Santa Margarita Curve Realignment	13.3 ac grassland 6.1 ac blue oak-foothill pine 2.7 ac coastal scrub 0.8 ac cropland 1.4 ac freshwater emergent wetland 0.4 ac freshwater forested/shrub wetland 0.1 ac freshwater pond 0.1 ac riverine 0.0 ac unknown shrub type 1.7 ac urban	33 animal species 19 plant species	None	Freshwater Emergent Wetland – 1.37 Freshwater Forested/Shrub Wetland – 0.36 Freshwater Pond – 0.11 Riverine – 0.08	305 linear feet
Santa Margarita Powered Switch	None	None	None	None	None
Cuesta Second Main Track	8.9 ac grassland 2.4 ac blue oak woodland 6.7 ac coastal oak woodland 1.2 ac coastal scrub 0.7 ac freshwater forested/shrub wetland 0.1 ac riverine 0.6 ac valley oak woodland	28 animal species 23 plant species	California red-legged frog – 26 ac	Freshwater Forested/Shrub Wetland – 0.69 Riverine – 0.09	749 linear feet
Upgrades to Existing Alignment Section #10	None	None	None	None	None

Source: ICF, 2013

3.13.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the same physical components. The only differences are that the Preferred Alternative would include modified footprints for the King City siding extension and station, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative includes a 27 mile "island" of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects on biological resources and wetlands under the Preferred Alternative would be the same as under the Build Alternative except for the areas where the modified or excluded components are located. The discussions below assess biological resource and wetlands effects from modified or excluded components. The results in **Tables 3.13-5** and **3.13-6** below reflect the revised methodology discussed above in **Section 3.13.2**.

Construction-Period Effects

Under the Preferred Alternative, fewer components are proposed that would require construction activity outside of the existing railroad ROW. The Preferred Alternative excludes 4 curve realignments in San Luis Obispo County, reducing construction-period impacts to biological resources, including special-status species and wetlands.

As shown in **Table 3.13-5**, the City of King siding extension is not expected to have any direct impact or encroachment to critical habitat areas or wetlands during construction. Additionally, there are fewer special-status plant and animal species and fewer sensitive vegetation communities identified for the City of King siding extension. Similar to the Build Alternative, construction activities associated with the King City siding have the potential to introduce dust, noise, fuel, and other disturbances that could indirectly affect species within the vicinity of the project alignment. The measures listed below would avoid or minimize any potential indirect effects, and the identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review.

Implementation of the island CTC would not require any heavy machinery or intensive construction activity. Accordingly, no substantial new construction-period affects are anticipated to biological resources and wetlands under the Preferred Alternative.

Table 3.13-5 Preferred Alternative: New Potential Construction-Period Biological Resource Impacts

Build Alternative Component	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
King City Siding Extension	3.0 ac grassland	18 animal species 1 plant species	None	0	0
King City New Passenger Station	None	None	None	0	0
McKay/Wellsona Curve Realignments	None. This component is not part of the Preferred Alternative.				
Wellsona/Paso Robles Curve Realignments	None. This component is not part of the Preferred Alternative.				
Templeton/Henry Curve Realignments	None. This component is not part of the Preferred Alternative.				
Henry/Santa Margarita Curve Realignment	None. This component is not part of the Preferred Alternative.				

Source: ICF, 2015

Operational Effects

Outside of the railroad ROW, physical components such as curve realignments and the second mainline could have permanent impacts to biological resources. The Preferred Alternative excludes 4 curve realignments in San Luis Obispo County, all of which had identified potential permanent impacts to biological resources and wetlands. Given the removal of these curve realignments, permanent impacts to biological resources would be reduced in these locations.

The City of King siding extension has fewer potential operational impacts to special-status plant species, sensitive vegetation communities, and non-wetland jurisdictional waters compared to the Build Alternative (refer to Table **3.13-5** and **3.13-6**). Furthermore, because the Preferred Alternative excludes 4 curve realignments assessed in the Build Alternative, overall potential permanent impacts to biological resources would be reduced under the Preferred Alternative.

The island CTC would be constructed within the railroad ROW and the King City station would be located entirely within urban landscape; therefore, no impacts to biological resources or wetlands are anticipated as a result of these physical components.

Table 3.13-6 Preferred Alternative: New Potential Operational Biological Resource Impacts

Preferred Alternative Component	Sensitive Vegetation Communities (Type/Acreage)	Number of Special Status Species	Critical Habitat Area (Species/Acreage)	Wetlands and Waters (Acres)	Non Wetland Jurisdictional Waters (linear feet)
King City Siding Extension	2.7 ac grassland	18 animal species 1 plant species	None	0	0
King City New Passenger Station	None	None	None	0	0
McKay/Wellsona Curve Realignments	None. This component is not part of the Preferred Alternative.				
Wellsona/Paso Robles Curve Realignments	None. This component is not part of the Preferred Alternative.				
Templeton/Henry Curve Realignments	None. This component is not part of the Preferred Alternative.				
Henry/Santa Margarita Curve Realignment	None. This component is not part of the Preferred Alternative.				

Source: ICF, 2015

3.13.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

~~Individual improvements comprising the Build Alternative should be designed to minimize impacts to biological resources along the Corridor.~~ The measures listed below are applicable to the Build and Preferred Alternatives and have been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review. Additional avoidance, minimization, and mitigation measures may also be identified during that review.

Individual components comprising the Build and Preferred Alternative should be designed to minimize impacts to biological resources along the Corridor.

MIN-BIO-1. Field surveys would ~~should~~ be conducted to determine the extent and type of general and sensitive biological resources, including focused surveys following resource agency protocols for special- status species.

MM-BIO-2. Biological Resources Management Plans (BRMP) would ~~should~~ be prepared to specify the design and implementation of biological resources mitigation measures, including habitat replacement and revegetation, protection during construction, performance (growth) standards, maintenance criteria, and monitoring requirements. USFWS, CDFW, and USACE would review Draft BRMPs. The primary goal of a BRMP is to ensure the long- term perpetuation of the existing diversity of habitats in the study area and adjacent urban interface zones. BRMPs will contain the following:

- Specific measures to ensure the protection of sensitive amphibian, mammal, bird, and plant species during construction activities.
- Identification and quantification of habitats that will be removed, as well as the locations where these habitats are to be restored or relocated.
- Procedures for vegetation analyses of adjacent protected habitats to estimate their relative composition; site preparation (clearing, grading, weed eradication, soil amendment, topsoil storage); irrigation, planting (container plantings, seeding); and maintenance (weed control, irrigation system checks, replanting). This information would be used to determine the requirements for revegetation areas.
- Proposed sources of plant materials and methods of propagation.
- Specific parameters for the determination of the amount of replacement habitat for temporary disturbance areas.
- Specification of parameters for maintenance and monitoring of re-established habitats, including weed control measures, frequency of field checks, and monitoring reports for temporary disturbance areas.
- Specification of performance standards for growth of re-established plant communities and cut-and-fill slopes.
- Remedial measures to be taken if performance standards are not met.

- Procedures and requirements to monitor all restoration/replacement efforts.
- Measures to preserve topsoil and control erosion control.
- Design of protective fencing around Environmentally Sensitive Areas (ESAs) and construction staging areas.
- Identification of location and quantities of gallinaceous guzzlers (catch basin/artificial watering structures, if needed); specification of monitoring of water levels in guzzlers.
- Location of trees that are designated as protected for wildlife habitat (roosting sites) and locations for planting of replacement trees.
- Identification of the purpose, type, frequency, and extent of chemical use for insect and disease control operations as part of vegetative maintenance within sensitive habitat areas.
- Specific monitoring programs for sensitive species during construction.
- Specific procedures to ensure the protection of sensitive species identified for preservation. These measures may include, but are not limited to, erosion and siltation control measures, protective fencing guidelines, dust control measures, grading techniques, construction area limits, and biological monitoring requirements.
- Provisions for biological monitoring during construction activities that ensure the compliance and success of the proposed protective measures. The monitoring procedures would (1) identify specific locations of wildlife habitat and sensitive species to be monitored; (2) identify the frequency of monitoring, monitoring methodology (for each habitat and sensitive species to be monitored); (3) list required qualifications of biological monitor(s); and (4) identify reporting requirements.

MM-BIO-3. Mitigation techniques to protect plant and wildlife species would ~~may~~ include, but would not be limited to on- and/or off-site revegetation/restoration of plant species, and purchase of credits from existing mitigation banks. Requirements for mitigation ratios would vary depending on the character of the impacted plant community and whether or not it provides notable habitat for sensitive plant or wildlife species. Regulatory agencies would be consulted to determine appropriate mitigation ratios. Relocation of plants, seed collection, plant propagation, out-planting to a suitable mitigation site, and participation in an existing HCP would

~~could~~ be employed to mitigate for impacted plant species.[24] Restoration of suitable breeding and foraging habitat, purchase of credits from an existing mitigation bank, and participation in an existing HCP would ~~could~~ mitigate for impacted wildlife species.

Whenever possible, on-site mitigation would be preferred to off-site. Off-site mitigation would ~~must~~ be located within the same watershed or in close proximity to the impact area, where feasible.

MIN-BIO-4. Minimization measures would ~~may~~ include, but not be limited to, pre-construction focused surveys and construction monitoring. Prior to construction, focused surveys would ~~should~~ be conducted for sensitive plant and wildlife species identified as occurring in the study area. Locations of sensitive plant/wildlife species observed would be mapped on construction drawings. Research would ~~must~~ be conducted on appropriate methods to use on a species-by-species basis (i.e., transplantation, germination from seed, greenhouse propagation), and construction ~~could~~ would be phased around the breeding season for sensitive wildlife species (See also BRMP information above.)

MIN-BIO-5. Specific measures would be developed to minimize or avoid the propagation of weeds during construction and operation. Potential preventive measures during construction could include identification of areas with existing weed problems and measures to control traffic moving out of those areas (e.g., cleaning of construction vehicles, limitations on movement of fill). Mitigation for operational impacts would be developed similarly.

MIN-BIO-6. Field studies would identify locally significant wildlife movement/migration corridors beyond those discussed in this programmatic document and provide data to assist in the design of bridges and wildlife crossings at crucial travel route points. Wildlife crossings would be designed to mimic natural corridors and must be sufficiently attractive to encourage wildlife use. Where feasible, overcrossings and undercrossings for wildlife would be appropriately vegetated to afford cover and other species requirements. Functional corridors would be established to provide connectivity to protected land zoned for uses that provide wildlife permeability. Corridors would be designed using the following procedure:

[24] An HCP is a planning document required as part of an application for an incidental take permit. They describe the anticipated effects of the proposed taking, how those impacts will be minimized or mitigated, and how the HCP is to be funded.

- Identify the habitat areas the corridor is designed to connect;
- Determine several species of interest from the species present in these areas;
- Evaluate the relevant needs of each selected species;
- For each potential corridor, evaluate how the area will accommodate movement according to the needs of each species of interest;
- Map the corridors;
- Design a monitoring program.

MM-BIO-7. Delineation of jurisdictional waters and wetlands would be conducted to determine the extent of USACE and CDFW jurisdiction, and consultation with these agencies to determine appropriate mitigation would occur.

- The amount of mitigation required would be assessed on an acreage basis, with ratios depending upon the nature and condition of the jurisdictional areas located within the impact areas. Whenever appropriate and feasible, on-site mitigation would be preferred. Off-site mitigation should be located within the same watershed or as close in proximity to the area of impact as possible. Mitigation options for unavoidable impacts to state and federal jurisdictional waters would include on- or off-site restoration, creation, or enhancement, mitigation banking, or in-lieu fee payments, as described below:
  - Restoration – Return degraded habitat to a pre-existing condition.
  - Creation – Conversion of a persistent non-wetland habitat into wetland (or other aquatic) habitat. The created habitat may be self-sustaining or dependent upon artificial irrigation.
  - Enhancement – Increase one or more functions of a replacement habitat through activities such as plantings or non-native vegetation eradication.
- Passive Revegetation – Allow a disturbed area to naturally revegetate without intervention or plantings.
- Mitigation Banking – Purchase of units of previously restored or enhanced wetland or waters habitat within a larger managed conservation area. These units are often known as “credits” and are typically sold by the acre.
- In-Lieu Fee Program – A monetary payment would be made to an entity approved by an agency that provides habitat conservation or restoration. For example, the Nature Conservancy may receive in-lieu fee payments for impacts in all watersheds.
- Current federal and state policy emphasizes a "no net loss" of wetlands habitats policy, which is usually achieved through restoration of areas subject to

temporary impacts or creation of wetlands to offset permanent impacts. However, according to the January 27, 2003, Special Public Notice for Mitigation and Monitoring Guidelines, USACE favors the use of approved mitigation banks or in-lieu fee programs in the event that these programs would result in a net increase in regional or watershed benefit over on-site compensatory mitigation. Approved mitigation and in-lieu fee programs include measures designed to ensure the no net loss of wetlands policy is met.

The strategies presented herein, including provisions for further study to obtain additional data and refine site-specific mitigation measures, can be expected to substantially lessen or avoid impacts to biological resources and wetlands. Impacts to biological resources and wetlands will be reduced through subsequent environmental review, ongoing consultation with resource agencies, the requirements associated with the permit-acquisition process for segments of the rail improvements, and compliance with those permit terms and conditions. Until these plans and provisions have been implemented, potential impacts to biological resources and wetlands should be considered significant and unavoidable under CEQA.

3.13.6 SUBSEQUENT ANALYSIS

Some plant and wildlife species require specific habitat elements that cannot be detected at the scale of this assessment. ~~It is assumed that~~ Further detailed analysis will be conducted prior to implementing any ~~elements~~ components of the Build or Preferred Alternative in order to conclusively determine the presence of biological resources in affected areas.

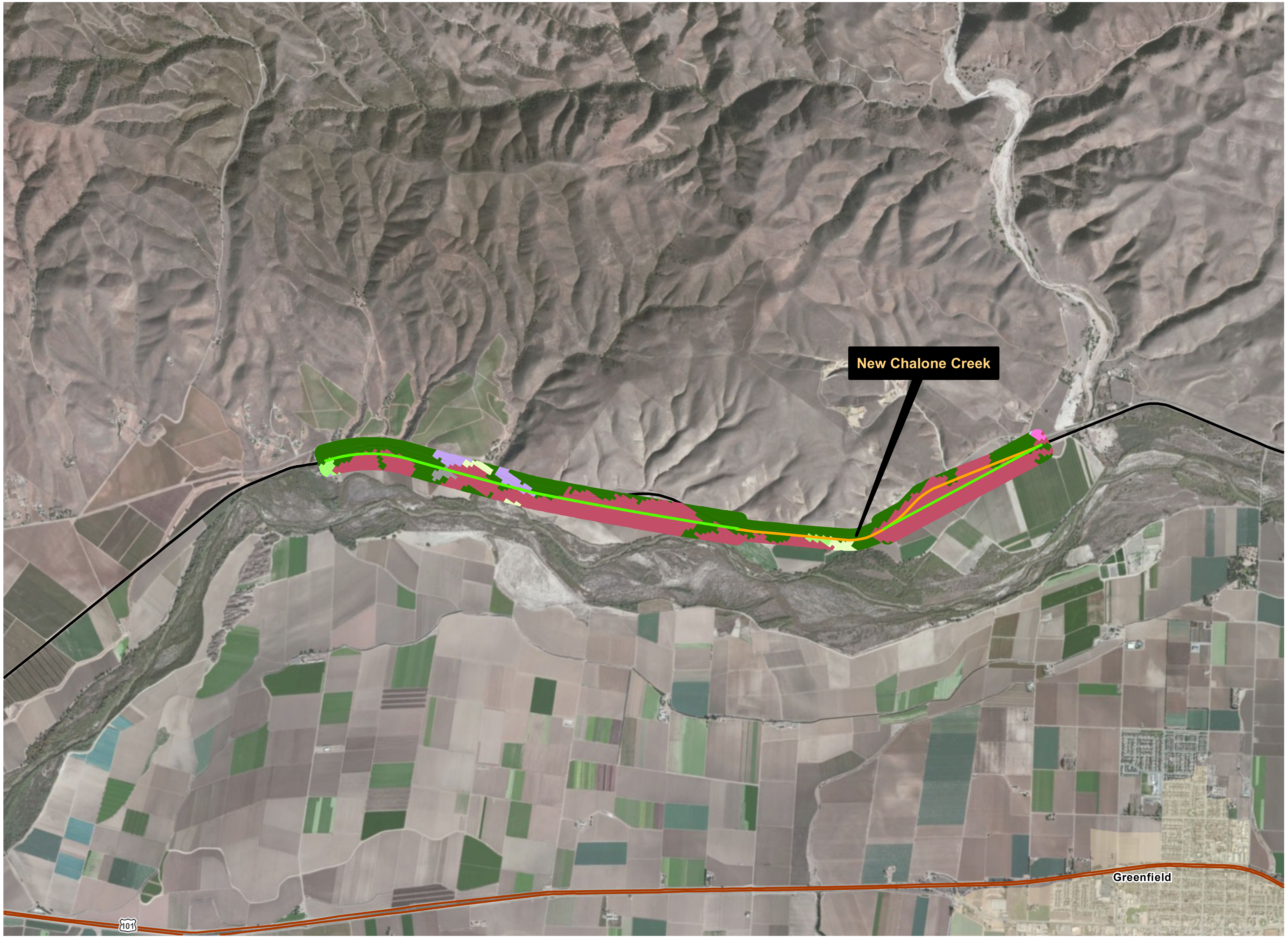
Consultation and possibly permits may be necessary from federal and state resource agencies prior to implementing specific elements of the Build or Preferred Alternative. The consultation and permit process would result in the development of site-specific avoidance and minimization strategies. For example, permits under the CWA require the USACE to identify the “least environmentally damaging practicable alternative” or “LEDPA.”

The discussion of potential impacts to various biological resources presented herein has relied primarily on the available GIS database, other GIS tools, and review of available literature. While these sources can be expected to present an accurate overview of natural resources conditions in the corridor, they may not exactly correspond to actual field conditions. In order to obtain more reliable assessments of potential impacts to biological resources, further environmental studies should be conducted prior to implementing ~~elements~~ components of the Build or Preferred Alternative.

Sensitive Vegetation Communites

Figure 3.13-1a

Source: ICF International, 2013



Agriculture
Annual Grassland
Barren
Blue Oak Woodland
Blue Oak-Foothill Pine
Coastal Oak Woodland
Coastal Scrub
Cropland
Lacustrine
Mixed Chaparral
Unknown Shrub Type
Urban
Valley Foothill Riparian
Valley Oak Woodland

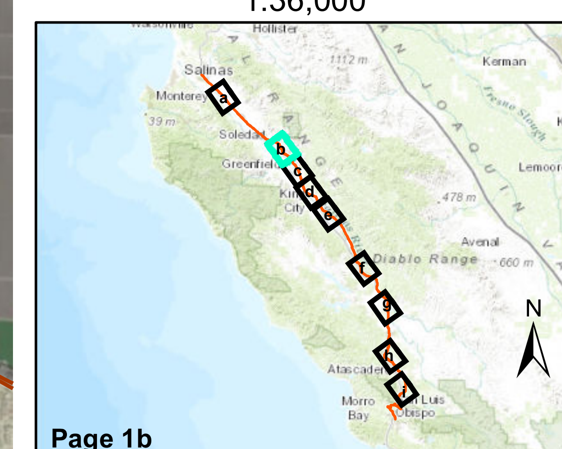
Project Components

Existing Alignment
Realignments
Sidings

N

0 1,500 3,000 6,000
Feet

1:36,000



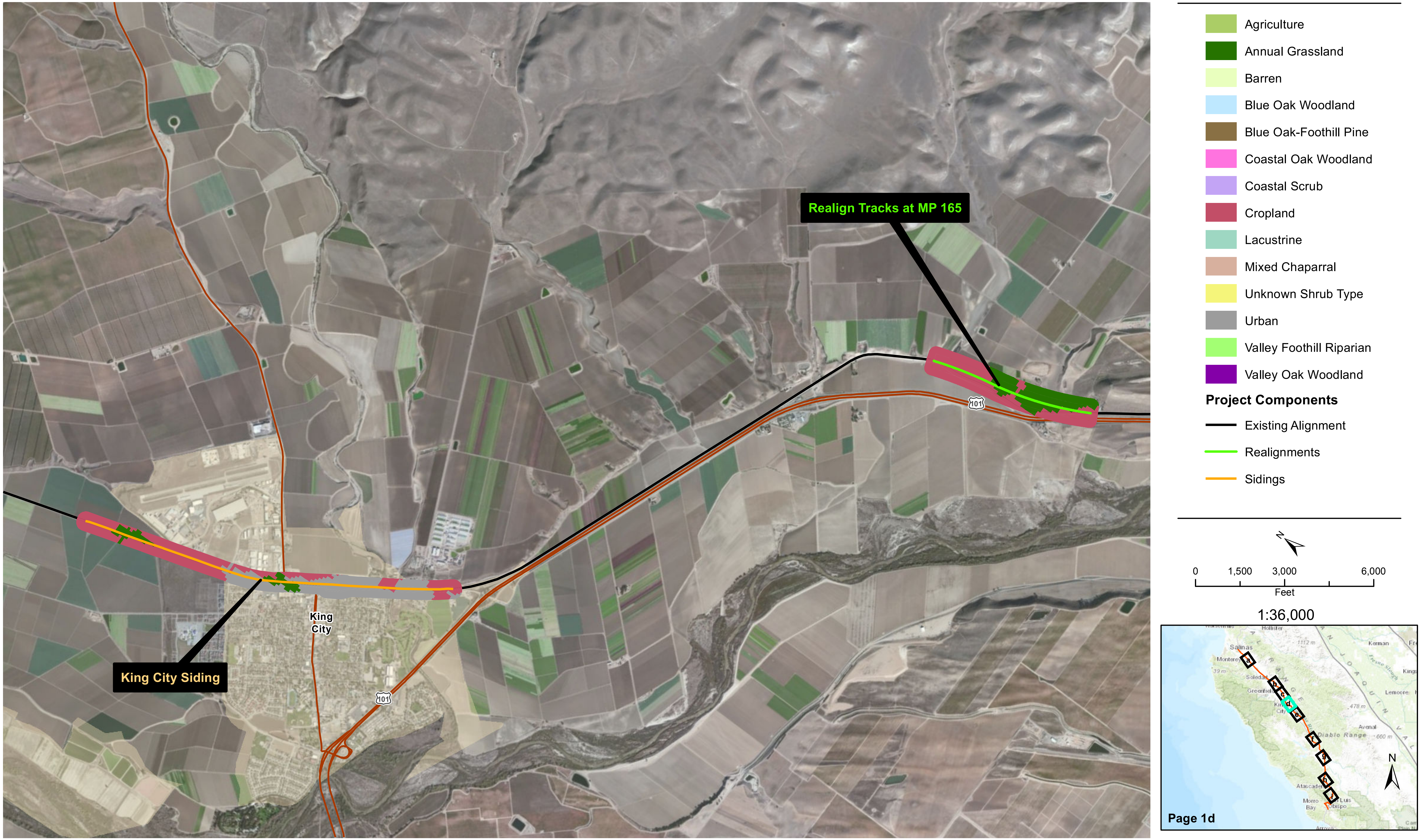
Sensitive Vegetation Communites Figure **3.13-1b**

Source: ICF International, 2013

Sensitive Vegetation Communites

Figure 3.13-1c

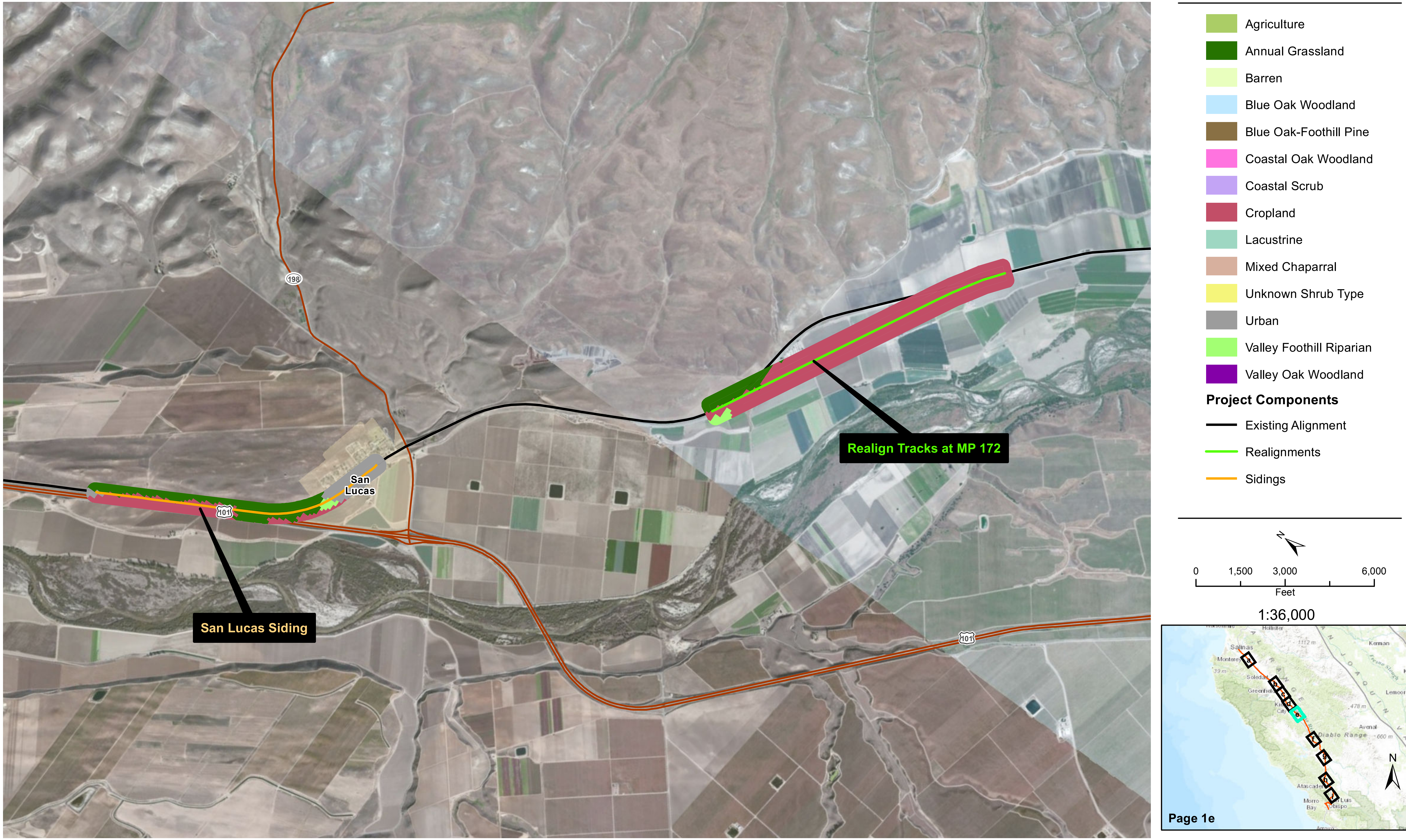
Source: ICF International, 2013



Sensitive Vegetation Communites

Figure 3.13-1d

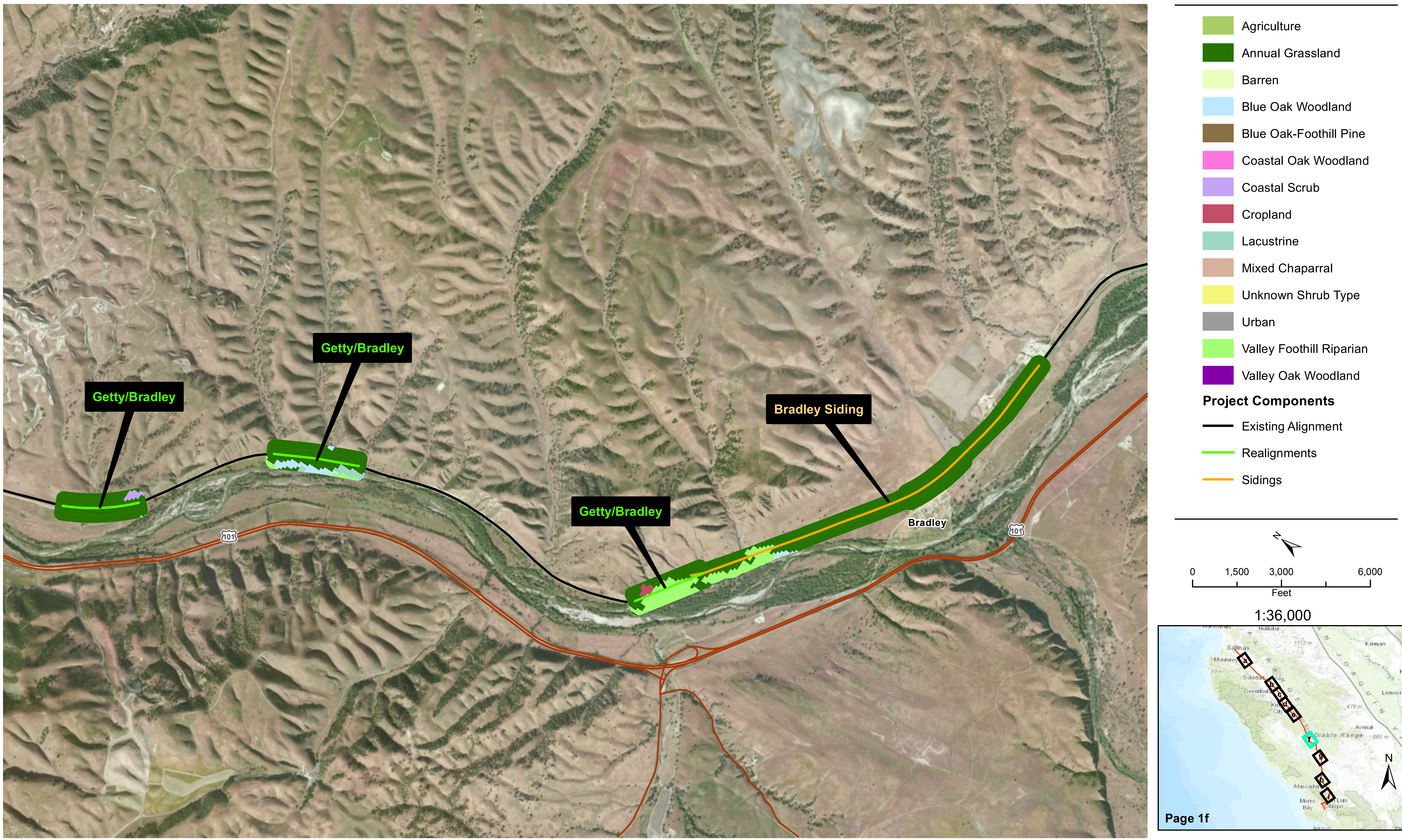
Source: ICF International, 2013



Sensitive Vegetation Communites

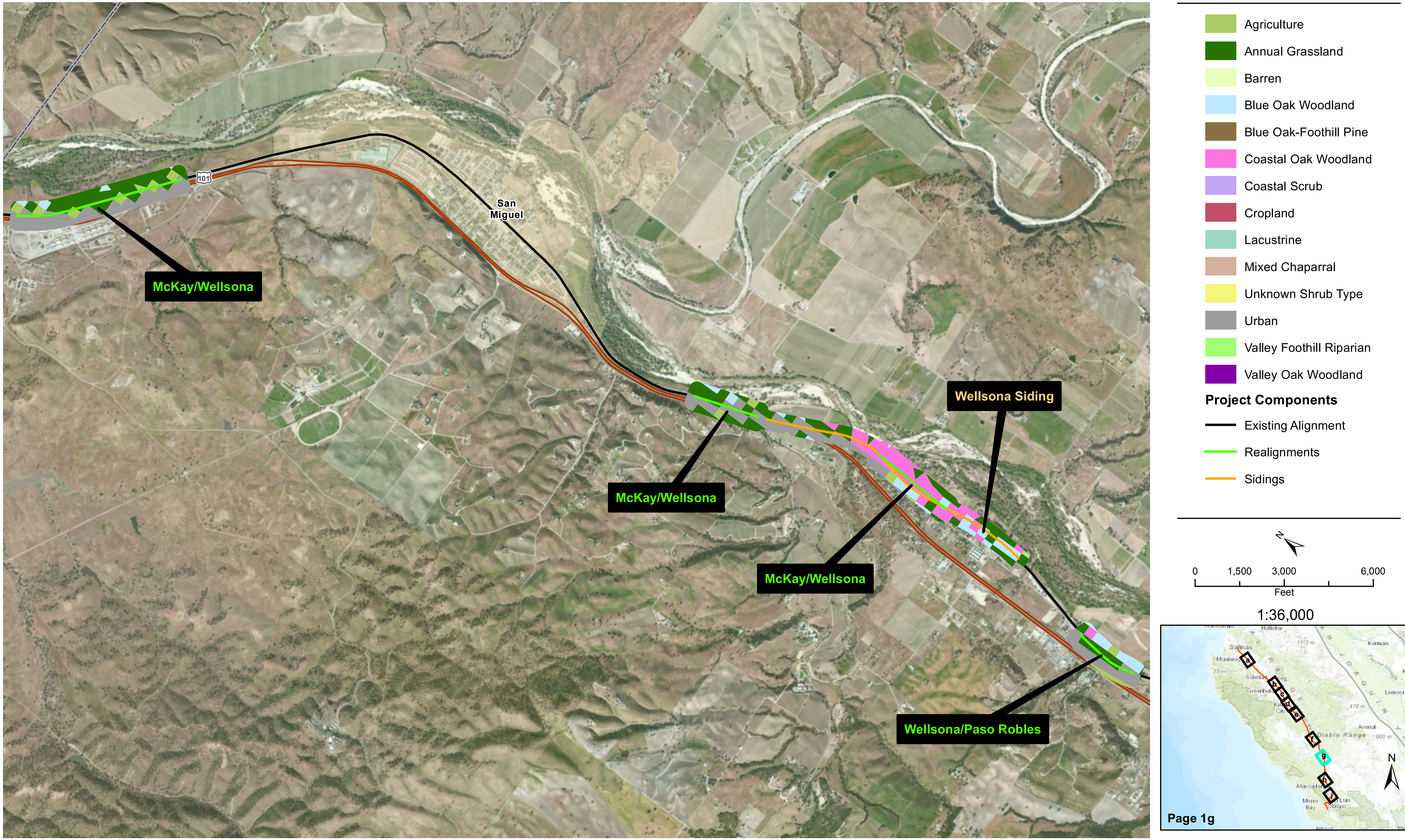
Figure 3.13-1e

Source: ICF International, 2013



Sensitive Vegetation Communites

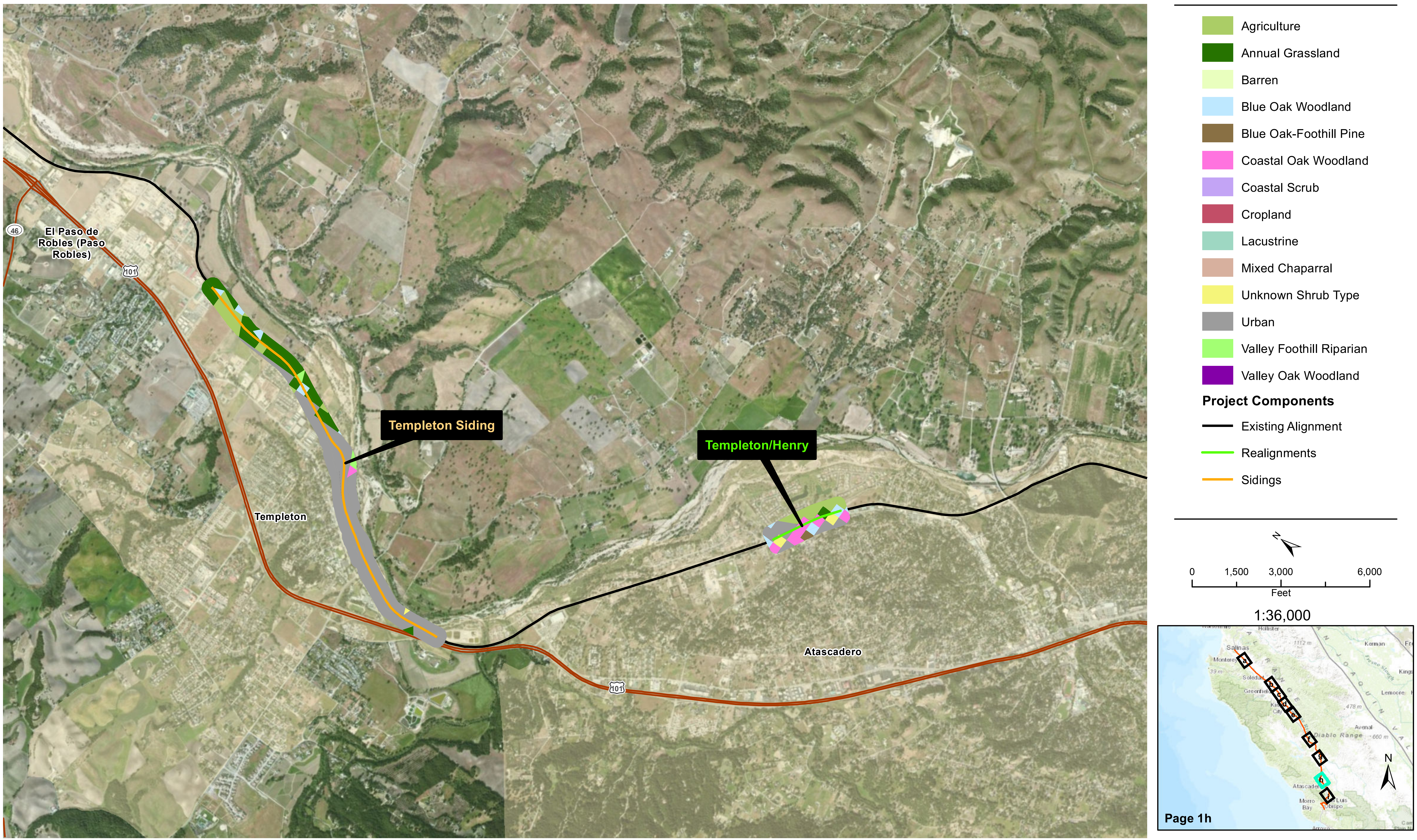
Figure 3.13-1f



Sensitive Vegetation Communites

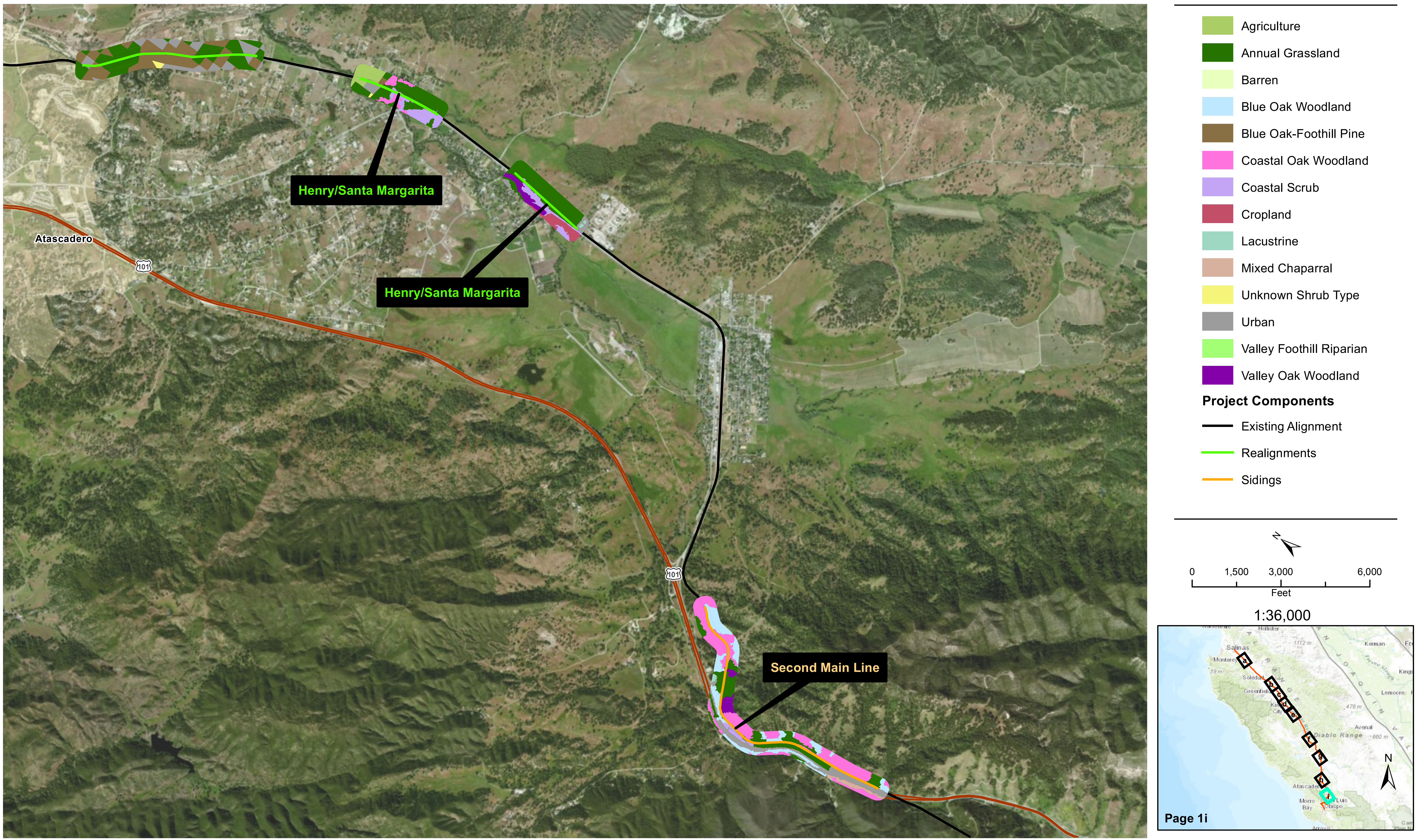
Figure 3.13-1g

Source: ICF International, 2013



Sensitive Vegetation Communites Figure **3.13-1h**

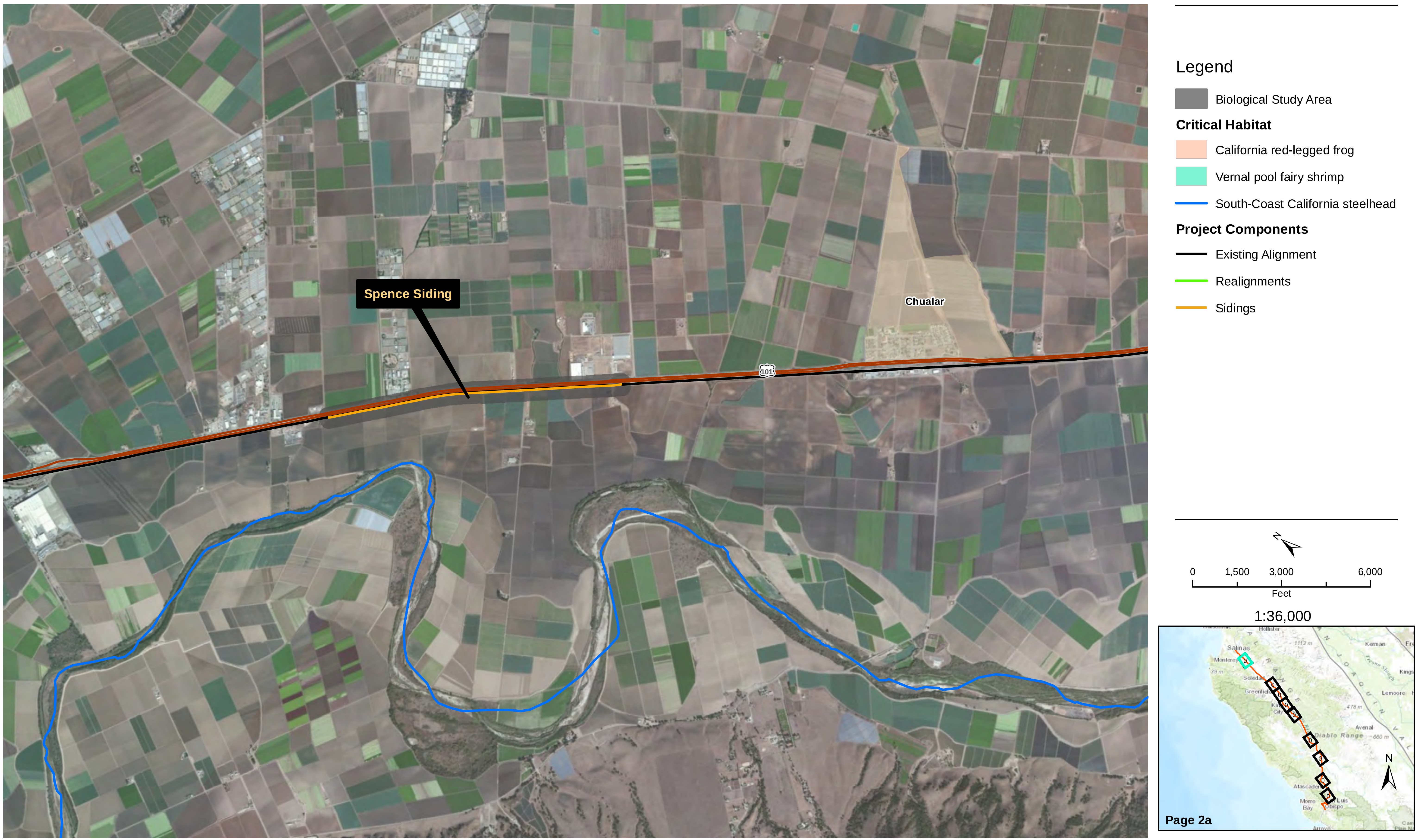
Source: ICF International, 2013



Sensitive Vegetation Communites

Figure 3.13-1i

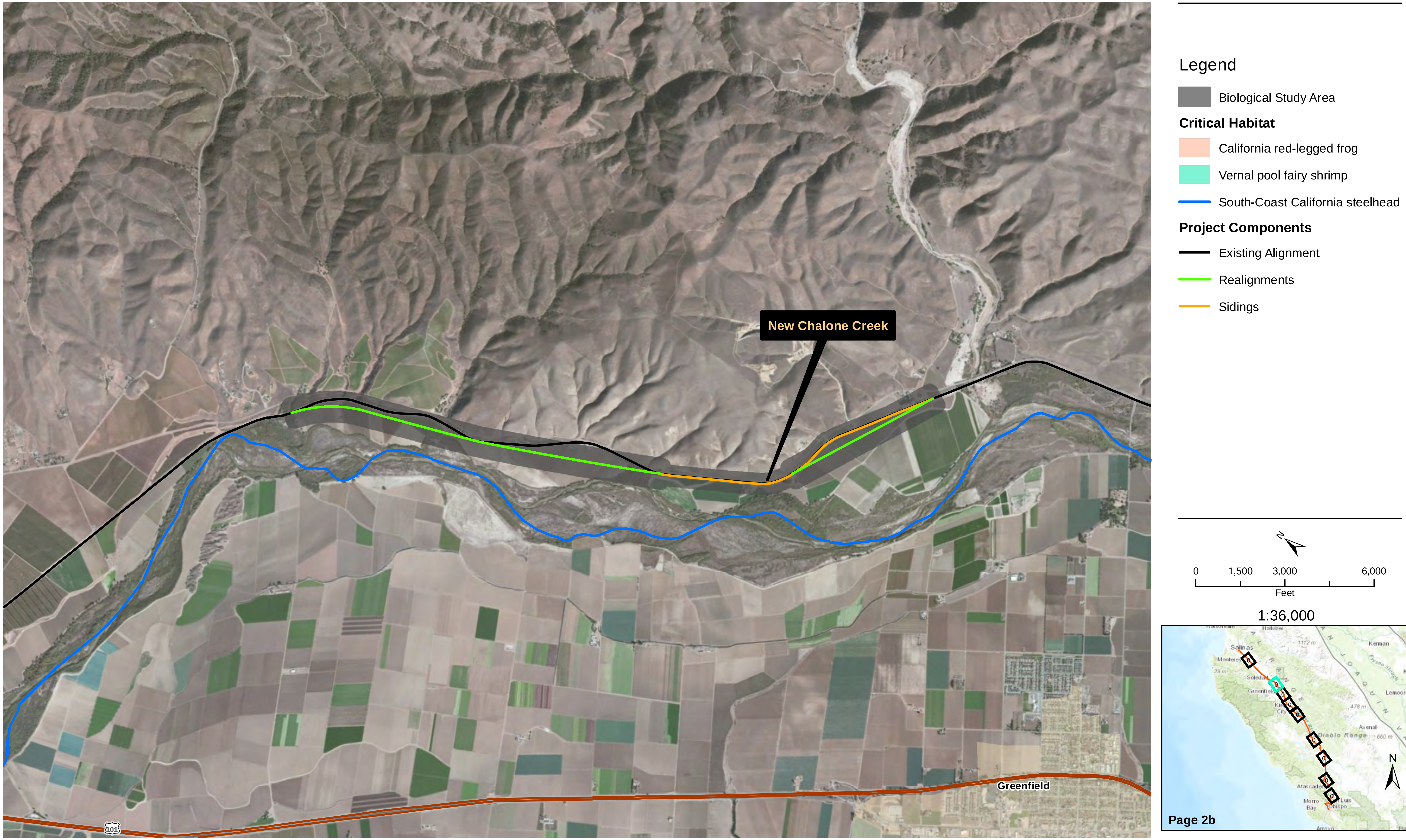
Source: ICF International, 2013



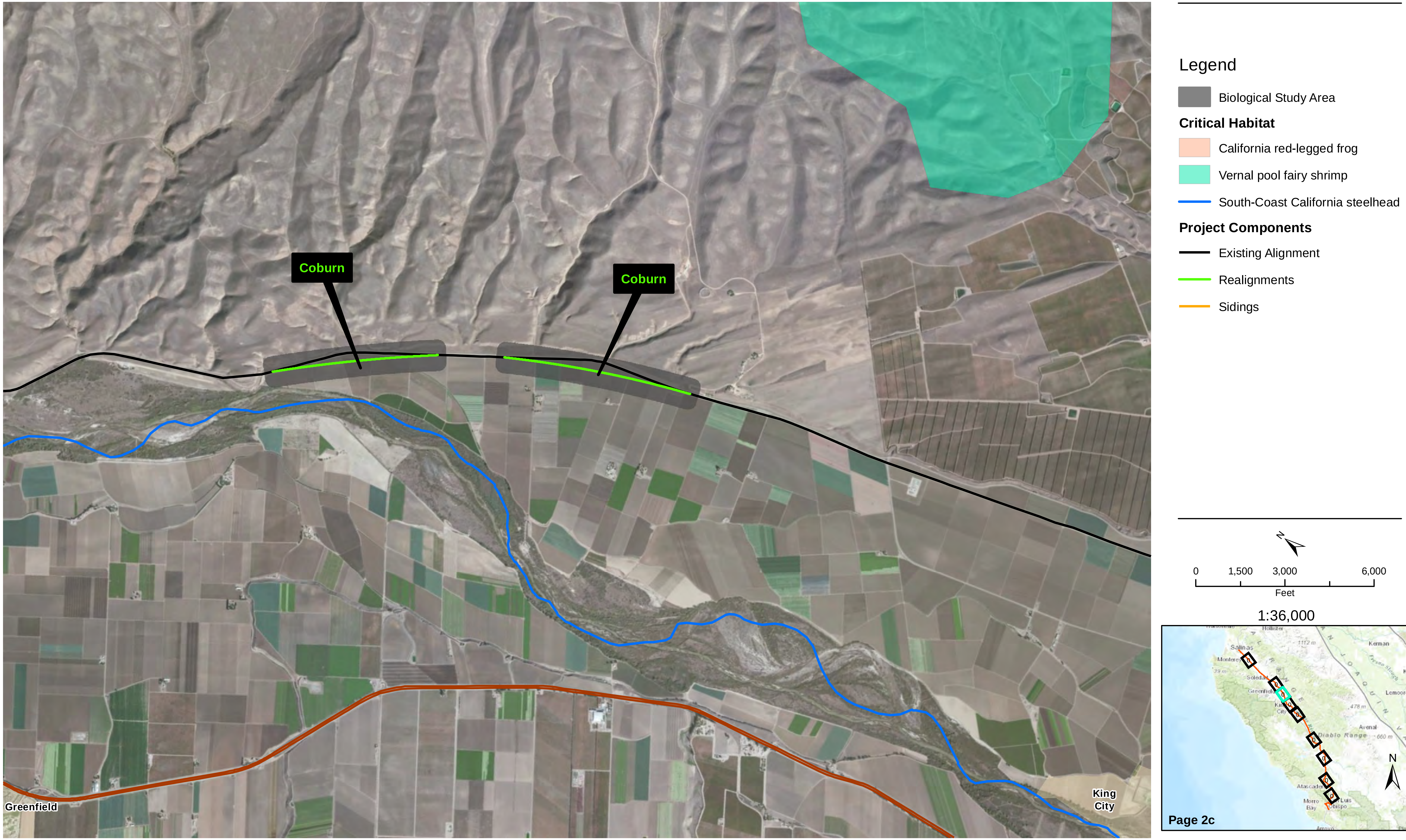
Critical Habitat

Figure 3.13-2a

Source: ICF International, 2013

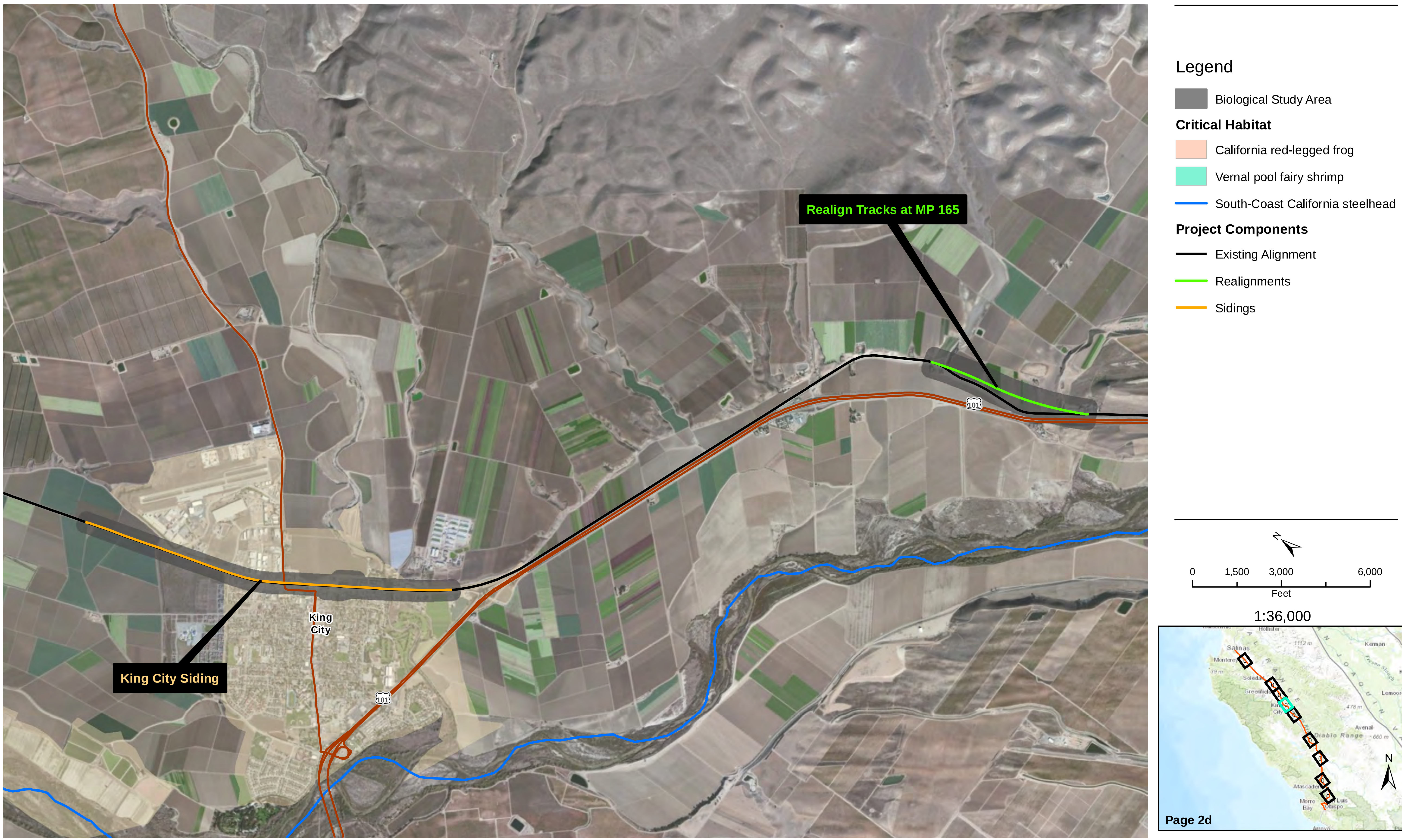


Critical Habitat Figure 3.13-2b



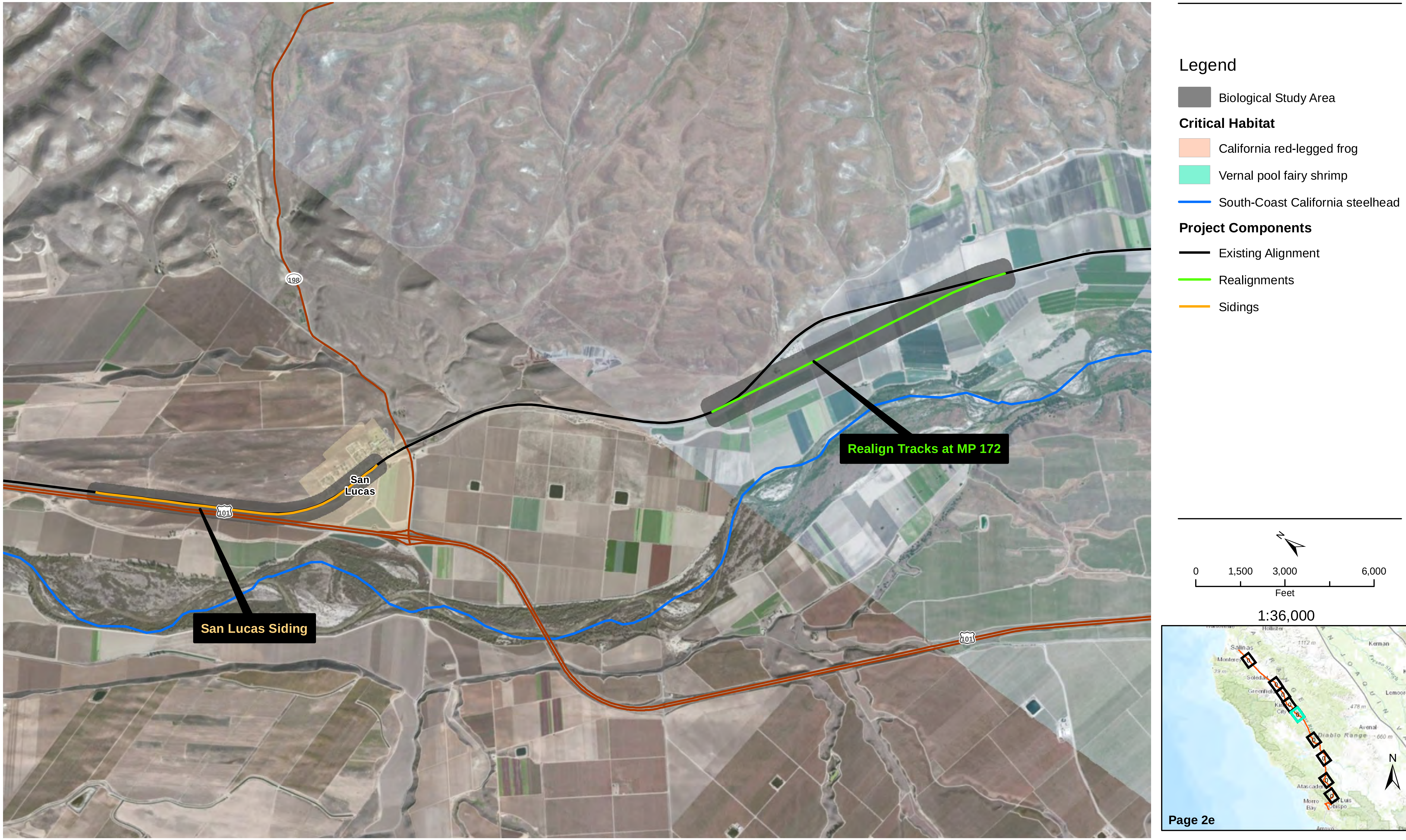
Critical Habitat Figure **3.13-2c**

Source: ICF International, 2013



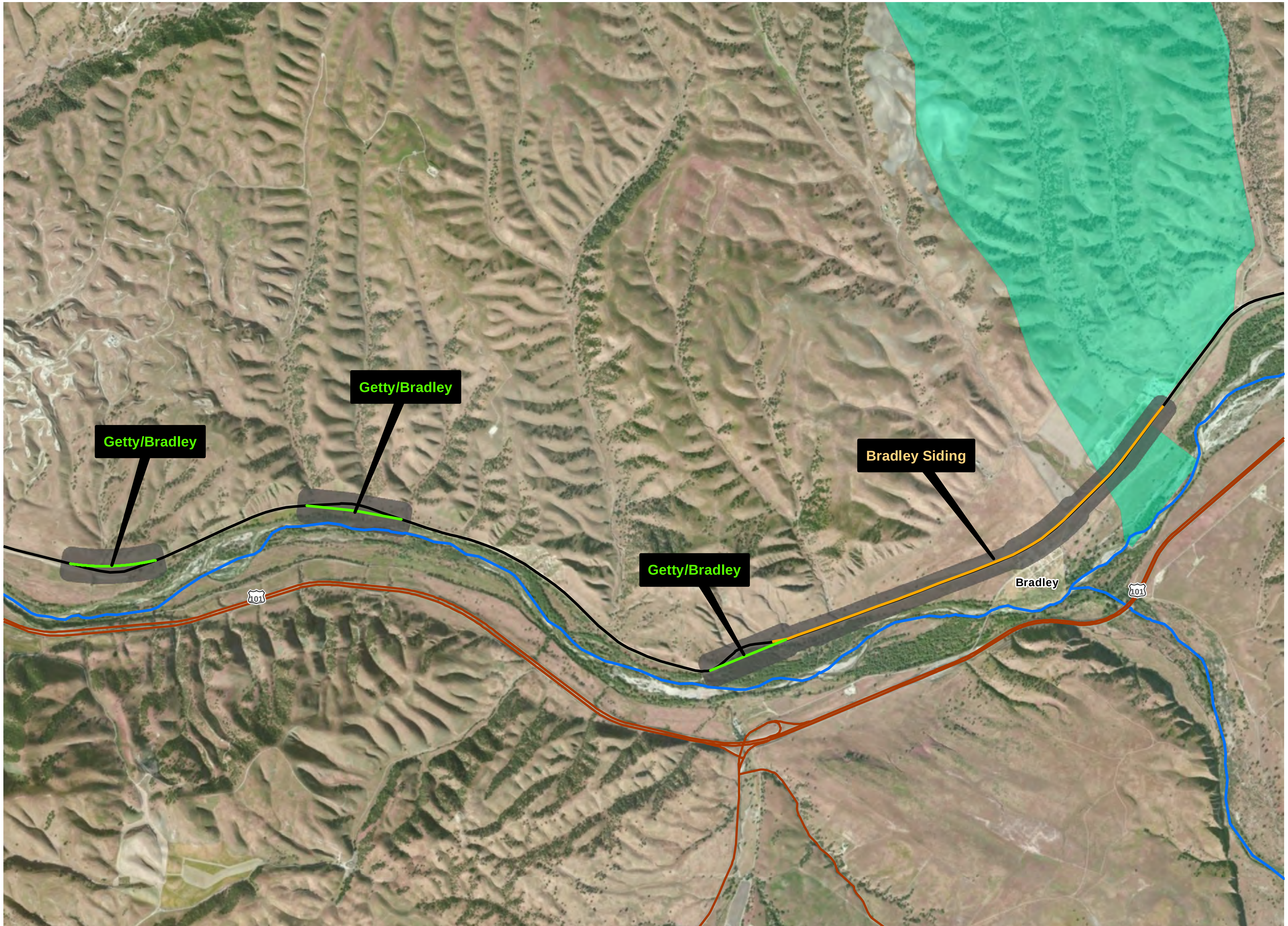
Critical Habitat Figure 3.13-2d

Source: ICF International, 2013



Critical Habitat
Figure 3.13-2e

Source: ICF International, 2013



Legend

- Biological Study Area

Critical Habitat

- California red-legged frog
- Vernal pool fairy shrimp
- South-Coast California steelhead

Project Components

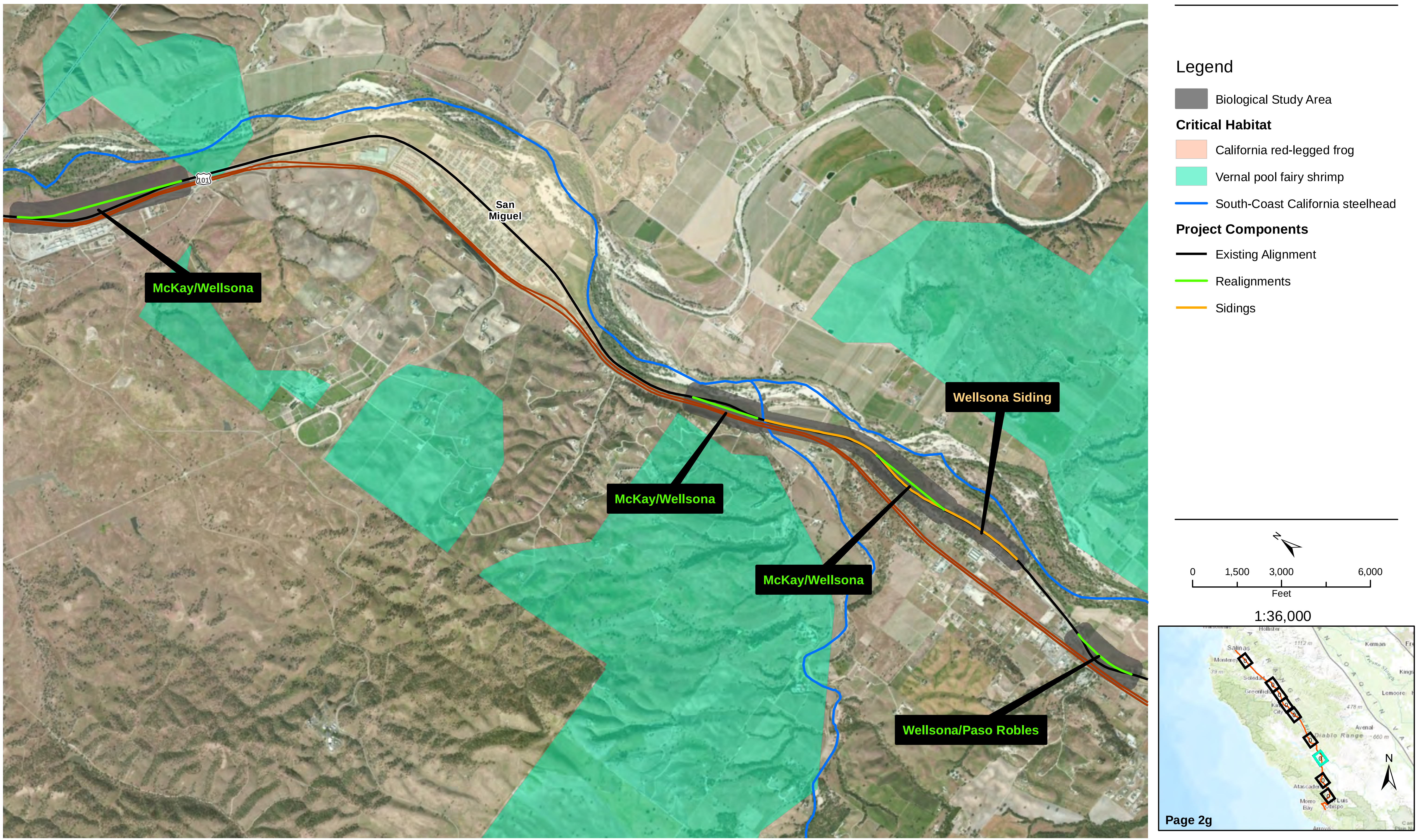
- Existing Alignment
- Realignments
- Sidings

0 1,500 3,000 6,000

Feet

1:36,000

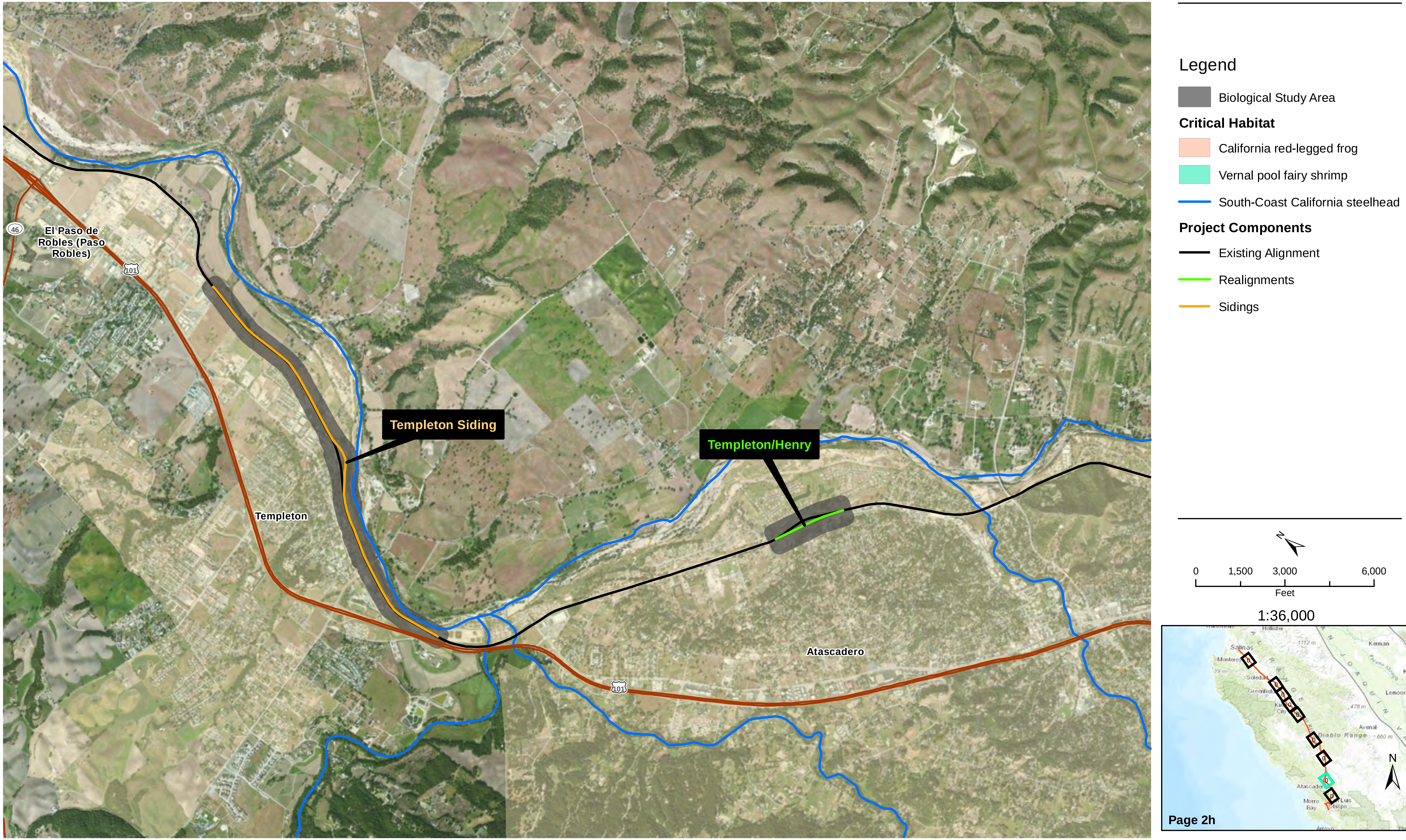
Critical Habitat Figure **3.13-2f**



Critical Habitat

Figure 3.13-2g

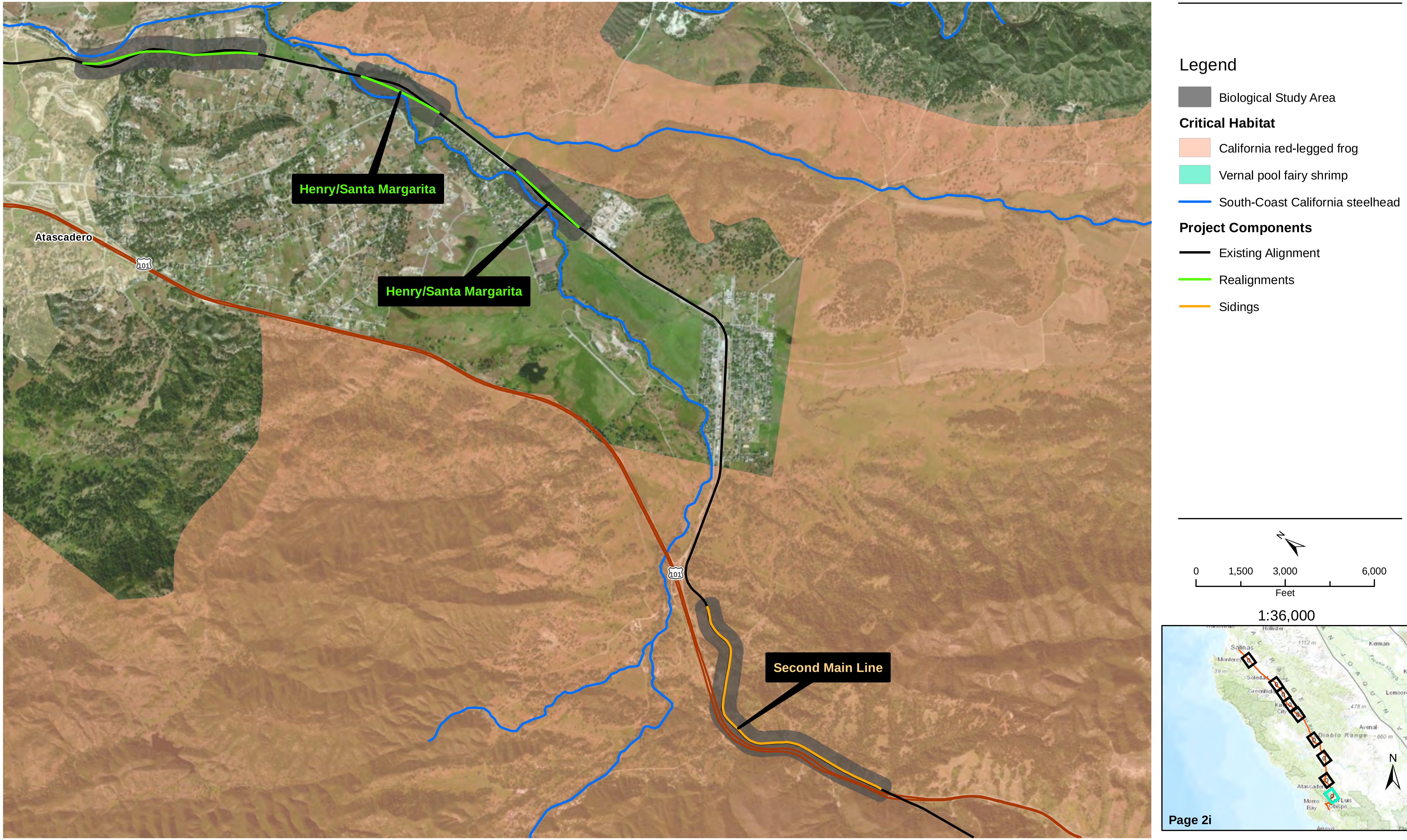
Source: ICF International, 2013



Critical Habitat

Figure 3.13-2h

Source: ICF International, 2013

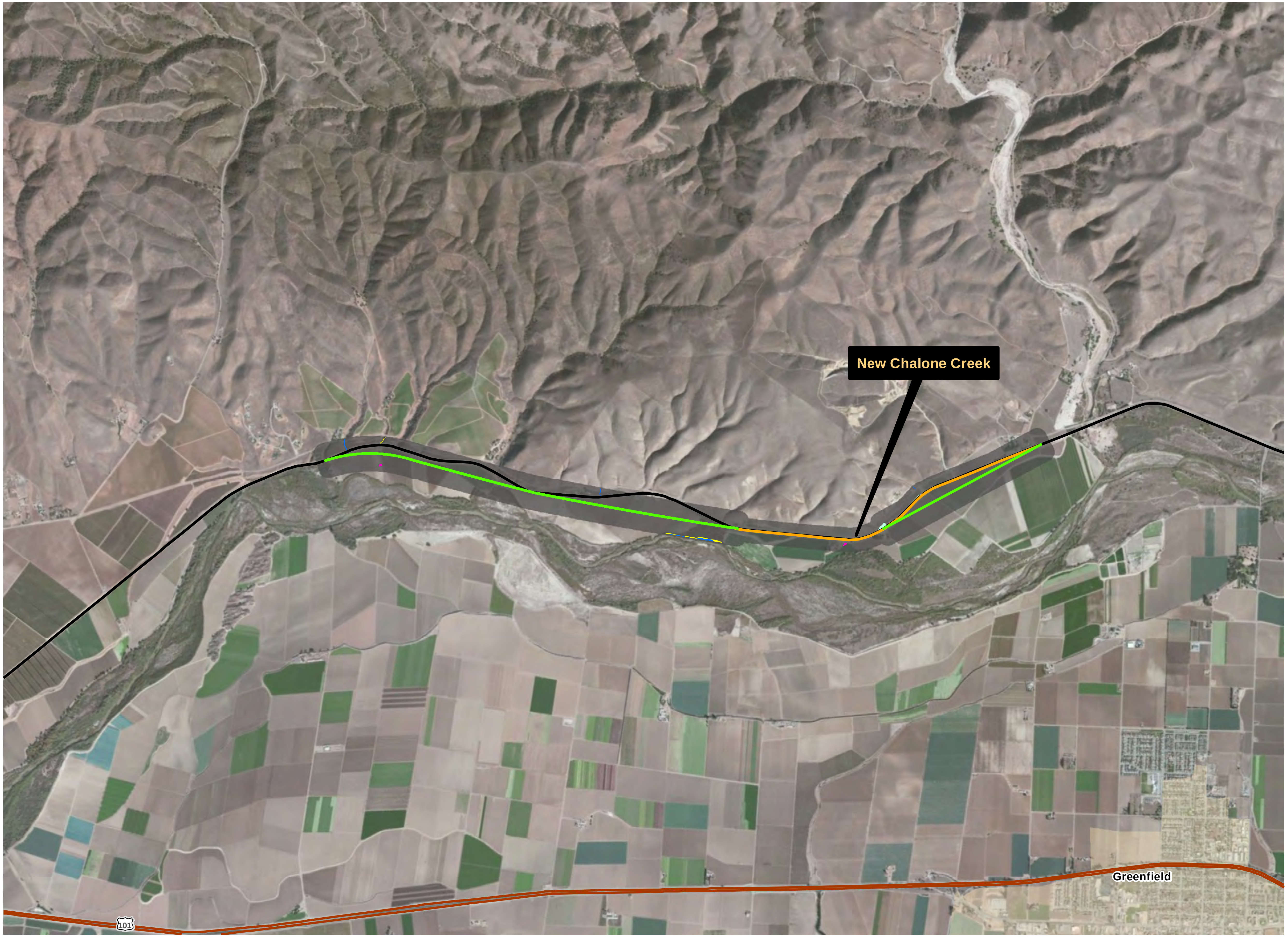


Critical Habitat Figure 3.13-2i

Wetlands and Jurisdictional Waters

Figure 3.13-3a

Source: ICF International, 2013



Wetlands and Jurisdictional Waters

Figure 3.13-3b

Source: ICF International, 2013

Legend

Biological Study Area

Wetlands

Freshwater Emergent Wetland

Freshwater Forested/ Shrub Wetland

Freshwater Pond

Riverine

Project Components

Existing Alignment

Realignments

Sidings

0 1,500 3,000 6,000
Feet

1:36,000

Wetlands and Jurisdictional Waters

Figure 3.13-3c

Source: ICF International, 2013

Legend

- Biological Study Area

Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/ Shrub Wetland
- Freshwater Pond
- Riverine

Project Components

- Existing Alignment
- Realignments
- Sidings

0 1,500 3,000 6,000
Feet

1:36,000

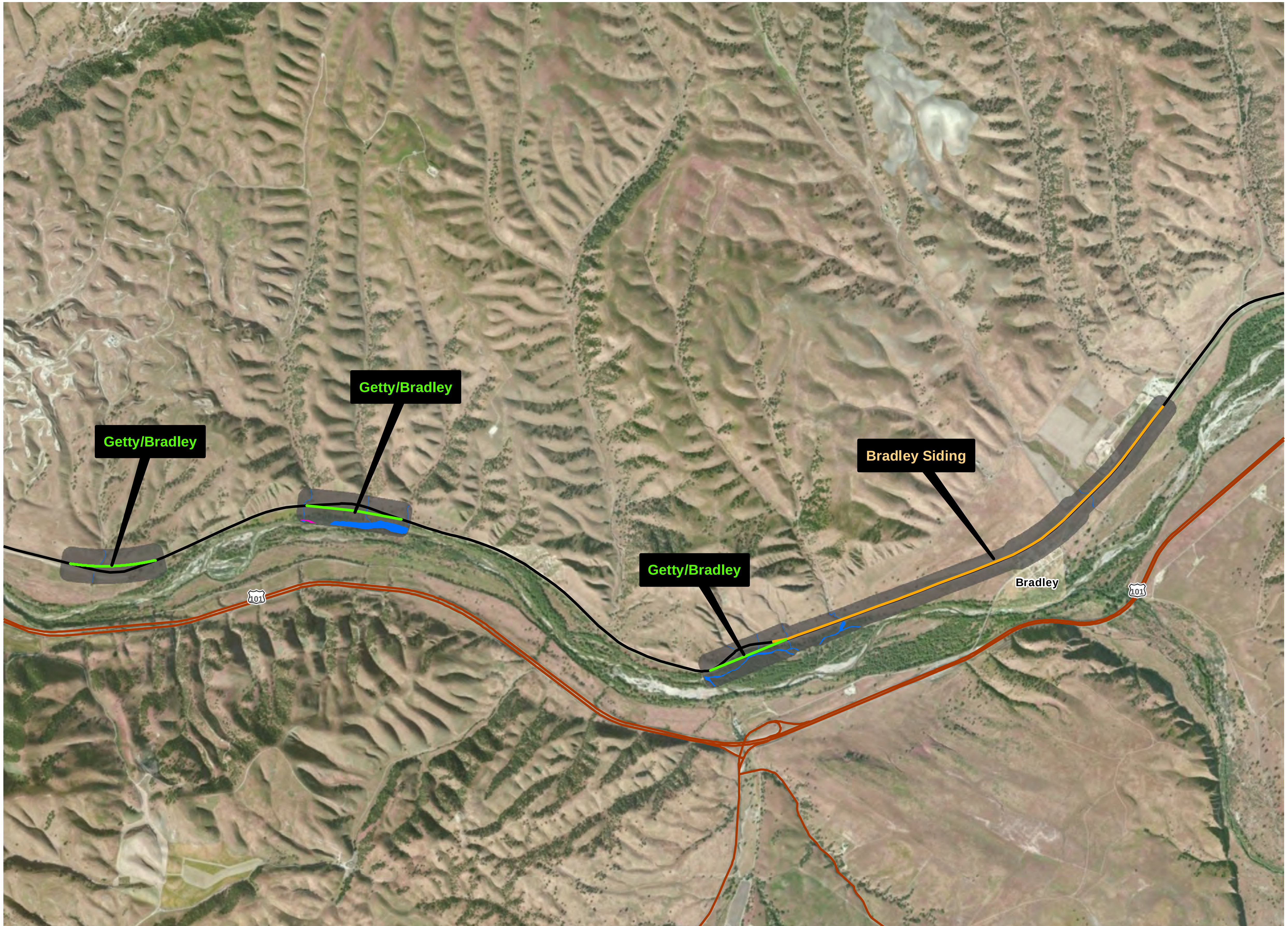
Wetlands and Jurisdictional Waters

Figure **3.13-3d**

Source: ICF International, 2013

Wetlands and Jurisdictional Waters

Figure 3.13-3e



Legend

Biological Study Area

Wetlands

Freshwater Emergent Wetland

Freshwater Forested/ Shrub Wetland

Freshwater Pond

Riverine

Project Components

Existing Alignment

Realignments

Sidings

0 1,500 3,000 6,000

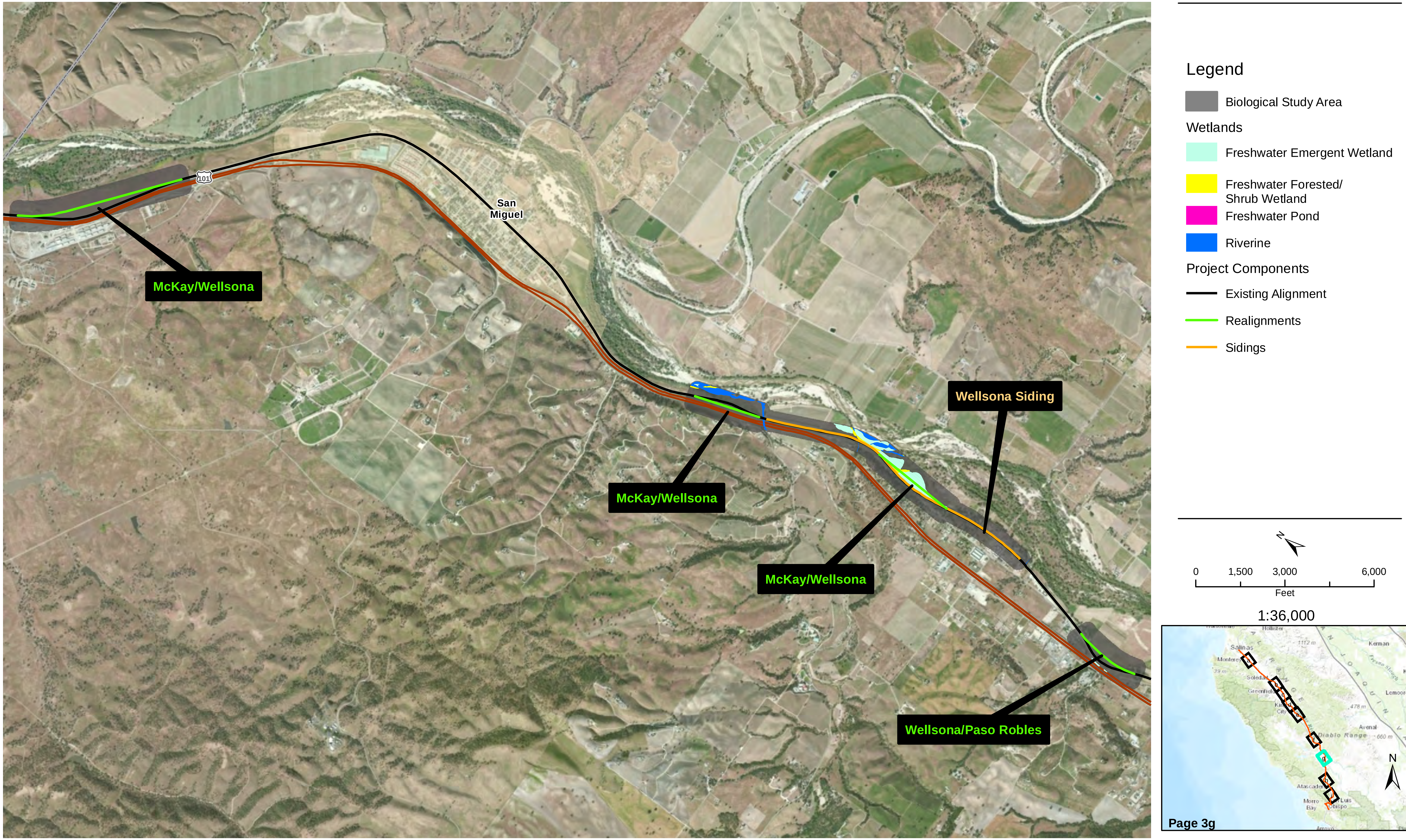
Feet

1:36,000

Wetlands and Jurisdictional Waters

Figure 3.13-3f

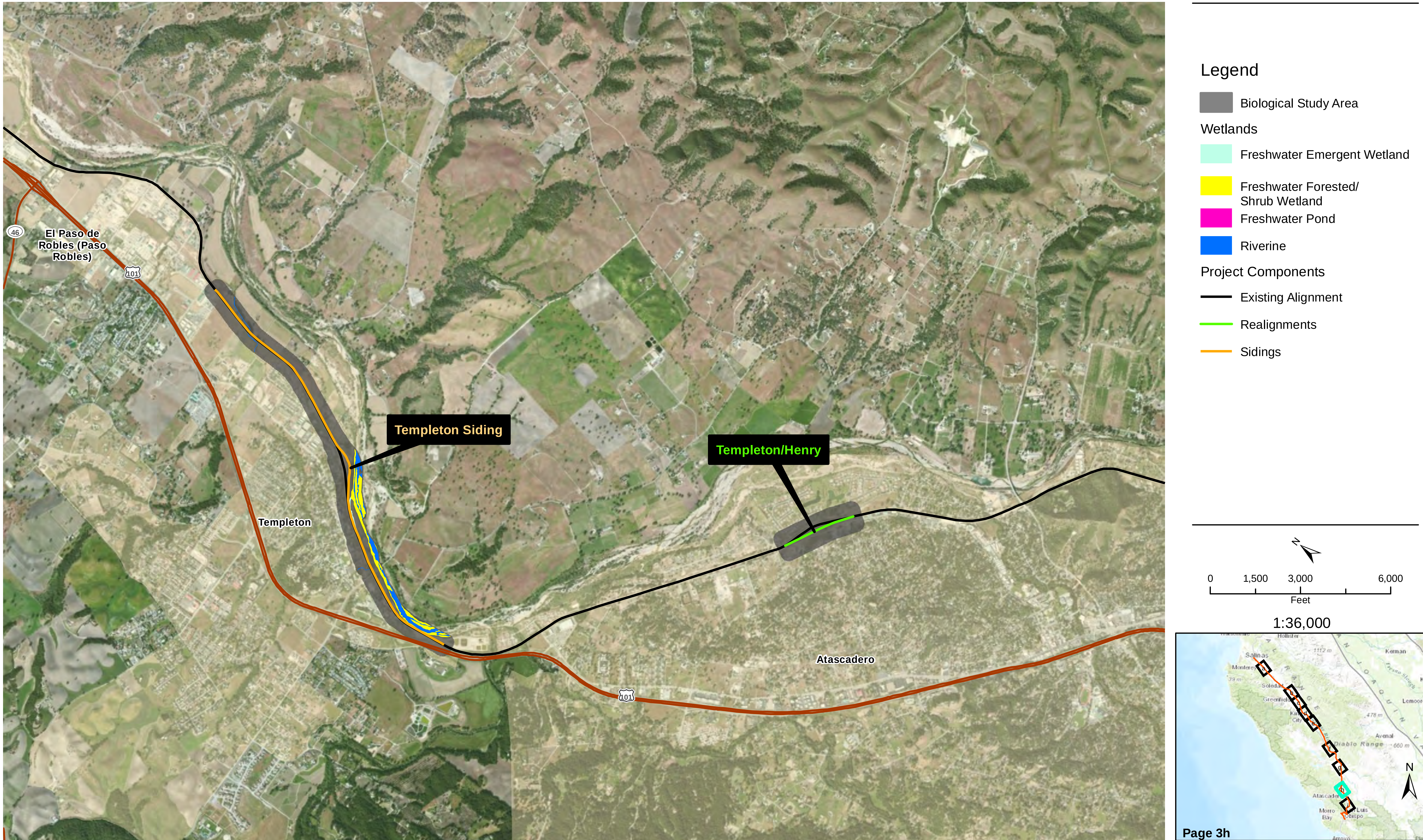
Source: ICF International, 2013



Wetlands and Jurisdictional Waters

Figure 3.13-3g

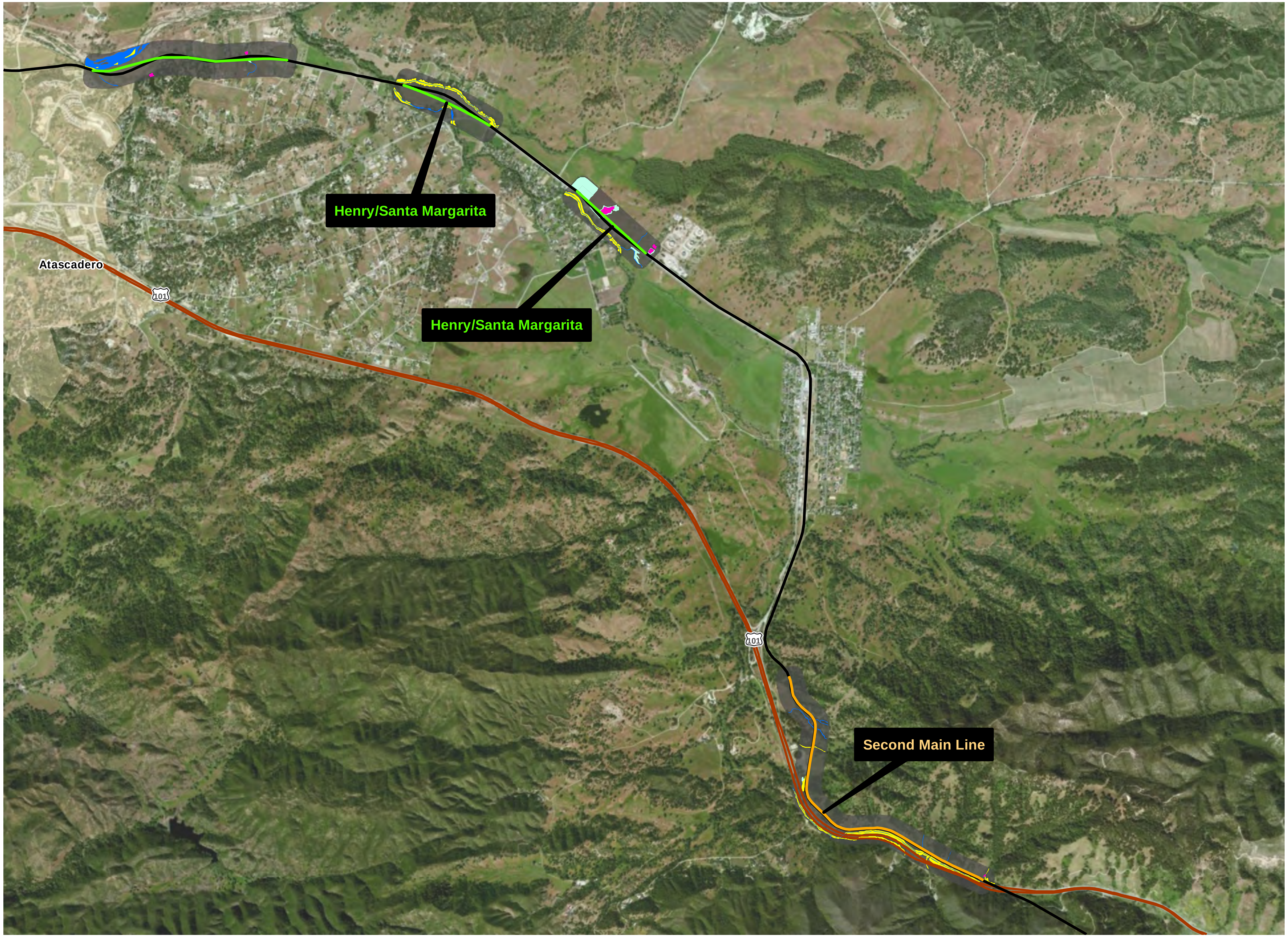
Source: ICF International, 2013



Wetlands and Jurisdictional Waters

Figure 3.13-3h

Source: ICF International, 2013



Legend

- Biological Study Area

Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/ Shrub Wetland
- Freshwater Pond
- Riverine

Project Components

- Existing Alignment
- Realignments
- Sidings

N

0 1,500 3,000 6,000
Feet

1:36,000

Wetlands and Jurisdictional Waters Figure **3.13-3i**

Source: ICF International, 2013

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3.14 GROWTH INDUCEMENT

This section discusses the potential growth-inducing effects that could result from the No Build Alternative and action alternatives ~~Build Alternative~~.

The analysis considers regional and local population and employment growth trends in evaluating the potential for the alternatives to influence these trends, either directly or indirectly. As population and employment growth are closely linked to land use regulations, please also refer to **Section 3.5, Land Use and Planning.**

Growth inducing effects of the ~~Build Alternative~~ action alternatives would be most prominent around existing and proposed stations, because these areas would see increases or new passenger ridership; it would have the potential to spur economic activity. As a result, this discussion is focused on the growth issues in areas immediately surrounding the existing and proposed stations (described in **Chapter 2.0, Alternatives**).

Chapter 5.0, Comments and Coordination, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. Of all comments received, 4 are related to the issue of growth in the Draft Program EIS/EIR (A-3.64 through A-3.66, and A-3.72). Specifically, all of these comments relate to elements of the Preferred Alternative, analysis of which is included in **Section 3.14.4.3**.

3.14.1 REGULATORY REQUIREMENTS

3.14.1.1 Federal

Federal Railroad Administration

Under its Procedures for Considering Environmental Impacts, FRA states that an EIS should address the number and kinds of available jobs to be affected by an alternative, impacts to local government services and revenue, and impacts on commerce in communities within the immediate study area. In cases where displacement of housing is involved, FRA stipulates an assessment of the availability and adequacy of relocation housing. FRA guidance also suggests analysis of the positive and negative consequences of each alternative on growth in the community and its surrounding metropolitan area, specifically near existing business districts and the immediate study area.

3.14.1.2 State

CEQA Guidelines Section 15126 states that an EIR shall "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment."

3.14.1.3 Local

Monterey County General Plan

The Monterey County General Plan contains goals and policies related to promoting appropriate and orderly growth and development. This includes growth areas in areas where adequate level of services and facilities exist or can be assured to be concurrent with growth and development. Policies also aim to encourage major industrial and commercial centers to accommodate future rail support facilities and to promote transit-oriented development around existing and future rail stations.[1]

City of Salinas General Plan

The City of Salinas General Plan (2002) contains policies aiming to maintain a circulation system that meets the current and future needs of the community, including collaboration with Amtrak to provide commuter rail service. Continued maintenance and expanded use of the City's Intermodal Transportation Center is included as a priority. Implementation of the Build Alternative would potentially increase ridership of the Coast Corridor, thus would allow for expanded usage of the existing Salinas Intermodal Transportation Center, consistent with city policy.

City of Soledad General Plan

The Soledad Downtown Specific Plan (2012) contemplated conceptual plans for a proposed new passenger rail station (identical to the station included here as part of the Build Alternative). In its environmental review of the specific plan as a whole, the city concluded that future placement of a multi-modal train station in Soledad would be consistent with the Coast Daylight Implementation Plan.[2] Furthermore, a train station would create an environment that attracts tourists and locals throughout the region.[3]

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[1] Monterey County, 2010, p. LU-3, CIRC-11

[2] City of Soledad,2012b, p. 4.4-9

[3] City of Soledad, 2012a, p. 2-2

City of King (King City) General Plan

King City adopted the First Street Corridor Master Plan, in which the city contemplated a number of land use changes, including conceptual plans for a passenger rail station. Accordingly, the city encourages the return of passenger service to King City as it would serve to benefit the community in terms of economic opportunities as well as reestablishing the historic downtown area.[4] As described in **Chapter 2.0, Alternatives**, since publication of the Draft EIS/EIR the City of King has adopted draft revised plans for the Multi-Modal Transportation Center – Conceptual Design ((MMTC) (2014)).

San Luis Obispo County General Plan

The San Luis Obispo General Plan includes goals and policies encouraging the use of strategic growth principles in development that create a range of housing choices, mixed land uses, preserve open space, and focus development in urban areas. Strategic growth strategies are to be implemented when planning and reviewing new development proposals.[5]

City of El Paso de Robles (Paso Robles) General Plan

The City of El Paso de Robles General Plan contains policies and action items aimed at establishing a safe, balanced, efficient, and multimodal circulation system, focusing on the mobility of people, and preserving the city's character. The expansion of Amtrak rail service is encouraged and included as an Action Item included within a policy to promote regional, interstate, and intra-state rail service.[6]

City of San Luis Obispo General Plan

The San Luis Obispo General Plan supports rail transportation as an energy efficient travel option. General plan policies support the increased availability of rail service for travel within the county, within the state, and among states. Daily train service with departures and arrivals in the morning and evening, connecting San Luis Obispo with points north and south is also encouraged within the general plan.[7]

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[4] City of King, 2013, p. 29, p. 82

[5] San Luis Obispo County, 2009, 4-4, 4-16

[6] City of El Paso de Robles, 2011

[7] City of San Luis Obispo, 2006

3.14.2 METHODS OF EVALUATION

This analysis qualitatively assesses the direct and indirect growth potential of the alternatives. The study area for this analysis is mostly focused on areas immediately surrounding existing and proposed station areas, as they are the railroad's "interfaces" where growth effects are most likely to be realized. However, other areas are also assessed. Please also refer to **Section 3.5, Land Use and Planning**, which addresses the potential for community impacts, a closely related consideration.

Direct growth effects are those caused by any alternative occurring at the same time and place. Direct growth effects include any permanent jobs directly associated with an alternative, as well as any displacement of housing ~~related to the~~ from construction or operation of the ~~proposed rail facilities~~ project components.

Indirect growth effects are considered to be reasonably foreseeable effects caused by the ~~Build Alternative~~ action alternatives, typically occurring later in time or further in distance from the project. These include positive or negative growth in population numbers and/or patterns, positive or negative growth in local or regional economic vitality, and associated alterations in land use patterns that could occur with implementation of the ~~Build Alternative~~ action alternatives. Removal of existing obstacles to growth would also be considered indirect growth effects. "Removal of obstacles to growth" would include the extension of public services and utilities to a previously undeveloped area, where the provision of such services could have a foreseeable increase in population and/or economic growth.

3.14.3 AFFECTED ENVIRONMENT

Monterey and San Luis Obispo Counties have experienced gradual population, housing, and employment growth over the past several decades. Local agricultural and tourism industries are leading employment sectors in these counties.

The ~~Build Alternative~~ action alternatives propose new passenger stations in the City of Soledad and King City and increased passenger rail activity at existing train stations in Salinas, Paso Robles, and San Luis Obispo. The stations are the only direct "interfaces" between the rail system and people and comprise the most realistic engines of growth. Therefore, this analysis focuses primarily on the station areas and their surrounding communities.

City of Salinas

According to the 2010 US Census, Salinas had a population of 150,498. The Salinas General Plan Final Program EIR (2002) projects the population at the time of buildout of the General Plan (between 2030 – 2040) to be approximately 213,063 living in 58,056 housing units, which is an increase of 49 and 48 percent, respectively, over existing conditions. Based on development assumptions and historic growth rates, it is projected that by 2020, approximately 184,000 people will reside in 50,100 dwelling units and that 90,300 employment opportunities will exist in the planning area.[8]

City of Soledad

According to the 2010 US Census, Soledad had a population of 25,738. A year earlier, the City's 2009 Housing Element Update projected the population to increase to 33,760 by 2020. The Soledad General Plan EIR build-out scenario determined there is potential for the city to grow to 57,000 people by the year 2040.[9] The city further projects a total of 22,000 jobs and 14,000 dwelling units by 2040.[10] A substantial complement of projected growth is associated with the city's Downtown Specific Plan, adopted in 2012. Existing development of the downtown area includes 437 housing units and 1,722 residents. Buildout of the Downtown Specific Plan is expected to yield 570 housing units and 1,828 people by the year 2032.[11]

City of King

According to the 2010 US Decennial Census, King City had a population of 12,874. King City anticipates the total population to increase to 24,726 people by 2035.[12] According to the First Street Master Plan, King City is growing at 4 percent per year, and is looking to add an additional 800 homes to the downtown area. Growth would encourage an increase manufacturing and service industries. A multi-modal transit center is also anticipated to spur commercial and retail developments on the First Street Corridor.[13]

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[8] City of Salinas, 2002b, Population and Housing

[9] City of Soledad, 2005b, p. IV-4

[10] City of Soledad, 2005b, p. 5.11-5

[11] City of Soledad, 2012b, p. 2-62-13

[12] City of King City. 2013,. First Street Corridor Master Plan. Pg32

[13] King City, 2013, p. 21

City of El Paso de Robles

According to the 2010 US Census, the City of Paso Robles population was 29,793 people. The Paso Robles Land Use Element population planning threshold for future development was 44,000 persons.[14] This number includes existing dwelling units plus all proposed maximum number of potential dwelling units authorized by the Land Use Element (with a 2.7 persons per household occupancy rate). Areas for housing growth have been identified in both the east and west sides of the city. The west region includes the city's historic core and the existing transit center station. As of December 2010, capacity for over 6,000 new units was identified for the areas.[15]

City of San Luis Obispo

According to the 2010 US Census, the City of San Luis Obispo population was 45,115 people. During workdays, the city's population increases to an estimated 70,000 persons, accounting for the largest concentration of jobs in the County. From 1992-2010 the rate of housing production in San Luis Obispo slightly exceeded the rate of population growth. Between 1990 and 2008, the city added about 2,700 residents, an increase of about seven percent. During the same period, the city's housing stock grew by about 1,400 units, and increase of about eight percent.[16] The San Luis Obispo Land Use Element anticipates a population of 56,750 people by 2029.[17]

3.14.4 ENVIRONMENTAL CONSEQUENCES

3.14.4.1 No Build Alternative

The No Build Alternative represents the continuation of existing operations and physical components, and assumes the perpetuation of existing freight and passenger service. The only proposed physical ~~improvement~~ component would be the implementation of PTC along the corridor, including modification to signaling and communications equipment. These PTC ~~related~~ changes are not expected to result in any growth related impacts because they would neither directly nor

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[14] City of El Paso de Robles, 2012, p. LU-1
[15] City of El Paso de Robles, 2011b,
[16] City of San Luis Obispo, 2010, Housing Element
[17] City of San Luis Obispo, 2010, pp. 1-23

indirectly lead to any substantial increases in jobs, housing, or other growth-related factors at existing or proposed station areas or other locations along the rail corridor.

According to the SDP, freight rail operations are likely to increase from 2 daily freight trains today to 4 daily trains in 2020 into 2040. Though not contemplated directly in the SDP, the proposed Phillips 66 Company Rail Spur Extension Project (pending approval by the County of San Luis Obispo), would, if constructed, allow for 5 weekly oil trains that would travel the entirety of the existing Salinas to San Luis Obispo rail corridor.

Implementation of these projects could occur regardless of whether or not any of the proposed physical components ~~improvements~~ comprising the ~~Build Alternative~~ action alternatives are ultimately constructed.

The No Build Alternative may result in regional job growth related to increased freight activity, but such growth would likely be negligible insofar as freight trains traversing the Salinas to San Luis Obispo corridor typically have start and endpoints outside this corridor.

3.14.4.2 Build Alternative

An adverse, direct growth effect would occur if the anticipated growth ~~associated with~~ from the Build Alternative would exceed growth projections at local and/or regional levels. An adverse indirect growth effect would occur if the Build Alternative would involve the removal of obstacles to growth, result in negative growth associated with local and/or regional economic vitality, and/or substantial positive or negative growth in population numbers or patterns.

Construction-Period Effects

Direct Impacts

Implementation of the Build Alternative would result in temporary employment opportunities associated with designing and constructing one or more of the ~~proposed improvements~~ project components. Possible job opportunities include contractor, engineer, management professional, and city planning-related positions. The anticipated ~~degree of~~ growth ~~such growth~~ of job opportunities ~~is likely correlated~~ correlates with the size and complexity of the Build Alternative components ~~improvement(s)~~ carried forward into design and construction (as well as any required environmental mitigation). Moreover, except for direct construction positions, many of these job opportunities could be fulfilled outside the Salinas to San Luis Obispo corridor area.

Some of the curve realignments included in the Build Alternative would require the temporary/permanent acquisition and/or conversion of various lands. These activities could have growth-related effects if residential lands are involved. Conversion of residential lands to a transportation use could have a negative effect on growth.

The Henry/Santa Margarita curve realignment ~~was identified as having the potential to~~ could potentially result in the acquisition of residential property if this particular component ~~improvement~~ is selected to move forward. In the event that the component ~~improvement~~ cannot be designed to avoid take of residential properties, minor growth~~-related~~ effects could occur. ~~Consequently, such effects would be considerable for affected property owners. However,~~ Any potential acquisition would require compliance with numerous federal and state property acquisition regulations. ~~Nevertheless,~~ The area of the Henry/Santa Margarita curve realignment is not densely populated and the growth~~-related~~ impacts would be low.

Indirect Impacts

Construction of the Build Alternative ~~in essence, is a direct project activity. Construction activities associated with the proposed improvements would not occur indirectly; therefore, there~~ would not result in any indirect construction growth-~~related~~ effects because all of the potential impacts are considered direct effects.

Operational Effects

Direct Impacts

Direct operational impacts of the Build Alternative are effects that would be directly caused by implementation of ~~proposed~~ project ~~improvements~~ components over the long-term.

The Build Alternative ~~proposes reinstitution~~ would reinstitute the Coast Daylight passenger rail service. The ~~additional~~ service would require several permanent jobs to operate and service trains, as well as to manage proposed new and existing stations.

No train service facility is located in the Salinas to San Luis Obispo portion of the Coast Corridor, so the potential creation of ~~would be minimal for~~ operations or service jobs ~~to be created between Salinas and San Luis Obispo~~ would be minimal. The closest maintenance area is in Los Angeles County. Potential new stations could introduce employment opportunities in Soledad and King City. Given the anticipated train schedule (2 daily trains initially increasing to 4 daily trains by 2040), there is ~~little likelihood of substantial~~ low potential for stations to directly affect employment ~~resulting~~.

In all, the passenger rail aspect of the Build Alternative would result in little direct ~~employment-related~~ growth effects in the Monterey and San Luis Obispo County areas.

The anticipated direct growth effects around the existing and proposed station areas might best be characterized as beneficial or at least community-desired effects. Both Soledad and King City have made the proposed stations centerpieces of adopted downtown revitalization strategies. Additionally, the Cities of Salinas, Paso Robles, and San Luis Obispo have supported intermodal transportation development to meet the current and future needs of the community. Therefore, the Build Alternative ~~proposed improvements~~ components are consistent with city goals to increase rail service and expand usage of transportation facilities. None of the proposed project components would have a substantial direct impact to growth; therefore, no growth inducement would occur under the Build Alternative.

Indirect Impacts

Implementation of the Build Alternative would result in indirect growth ~~related~~ effects, particularly in areas surrounding the new proposed stations in Soledad and King City, as well as in Salinas, Paso Robles, and San Luis Obispo.

The City of Soledad set forth goals to revitalize its downtown in its 2012 Downtown Specific Plan. The Specific Plan identifies a proposed passenger rail station site and also encourages opportunities for economic development to spur economic vitality in Soledad. Similarly, King City's First Street Corridor Master Plan includes conceptual plans for a proposed passenger rail station. As further described in **Chapter 2.0, Alternatives**, since publication of the Draft EIS/EIR the City of King has adopted draft revised plans for the Multi-Modal Transportation Center – Conceptual Design ((MMTC) (2014)). Accordingly, these plans have been incorporated into the Preferred Alternative and discussed in **Section 3.14.4.3** below.

New passenger stations ~~and increased service~~ and the Coast Daylight ~~Starlight~~ service throughout the corridor would attract additional passengers and potentially attract development in and around all station areas. As a result, the Build Alternative could indirectly result in increased economic activity around both existing and proposed new station areas. Increased economic activity in these areas may indirectly influence population growth, development patterns, and tourism~~ in the nearby area~~.

3.14.4.3 Preferred Alternative

The Preferred Alternative would include the same service as the Build Alternative and would retain all corridor-wide and almost all of the location-specific physical components. The only differences are that the Preferred Alternative incorporates revised draft plans for the King City station (includes a modified footprint for the King City siding extension, and would exclude each of the four curve realignments within San Luis Obispo County. Additionally, the Preferred Alternative explicitly includes the aforementioned 27 mile "island" of CTC between MP 202 and 229 (McKay to Santa Margarita).

Accordingly, effects to growth inducement for the Preferred Alternative would be the same as the Build Alternative except where the modified or excluded components are located. The discussions below assess traffic and travel effects of modified or excluded components.

Construction-Period Effects

Under the Preferred Alternative, construction activities would be similar to those described under the Build Alternative. Proposed curve realignments in San Luis Obispo County are excluded from the Preferred Alternative. Some of these curve realignments considered in the Build Alternative would have required the temporary/permanent acquisition and/or conversion of various lands. As described, these activities could have growth impacts to the effected residential properties. Conversion of residential lands to a transportation use could have a negative effect on growth. Accordingly, construction-period growth effects would be expected to be lower for the Preferred Alternative than the Build Alternative.

Operational Effects

In the Preferred Alternative, Coast Daylight service would operate in the same capacity as in the Build Alternative and would have the same potential to induce planned, beneficial growth as the Build Alternative. None of the modified or excluded components would have a substantial impact to growth; therefore, no new growth inducement would occur with the Preferred Alternative.

3.14.5 AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

~~The individual improvements comprising the Build Alternative should be designed to minimize direct and indirect adverse growth related effects along the Corridor. As noted above, the extent of adverse growth-related effects would be limited to any required acquisition and permanent conversion of residential lands into~~

~~transportation uses. As components of the Build Alternative move forward into design, avoidance/or minimization of such acquisitions should be an important consideration.~~

~~The following strategy has been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts.~~

The individual components should be designed to minimize direct and indirect adverse growth effects along the Corridor. The measure listed below is applicable to the Build and Preferred Alternatives and has been identified at this preliminary stage to avoid, minimize, and/or mitigate any potentially significant impacts. The identification and implementation of specific mitigation measures necessary for each project component will occur as part of subsequent project-level environmental review.

MIN-GR-1. New station development would be coordinated early in project-level reviews with local jurisdictions. This would ensure that land use plans and controls can be revised and implemented in conjunction with any new station development.

3.14.6 SUBSEQUENT ANALYSIS

Prior to implementing ~~any individual improvements~~ components of the ~~Build Alternative~~ action alternatives, site specific evaluation would ~~should~~ be conducted for the need for property acquisition, including the potential for displacement of homes or businesses or substantial conflict with locally adopted land use policies. Any homes or businesses with the potential for displacement could ~~will~~ be studied through a relocation impact analysis. Additional environmental assessment and design development to determine alignment options during future studies will ensure a more precise evaluation of site-specific impacts and mitigation effectiveness.

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3.15 CUMULATIVE IMPACTS EVALUATION

This section evaluates the potential for the ~~Build Alternative~~ action alternatives, in combination with other past, present and future reasonably foreseeable projects, to result in or contribute to cumulative environmental effects. A cumulative impact includes the total effect on a natural resource, ecosystem, or human community that is attributable to past, present, or reasonably foreseeable future activities/actions of federal, nonfederal, public, or private entities. Cumulative impacts may also include the effects of natural processes and events, depending on the specific resource in question. Cumulative impacts include the total of all impacts on a particular resource that have occurred, are occurring, and will likely occur as a result of any action or influence, including the direct and indirect effects of a federal activity. Accordingly, there may be different levels of cumulative impacts on different environmental resources.

Chapter 5.0, Comments and Coordination, includes all comments on the Draft Program EIS/EIR and provides responses to each comment. Of all the comments received, there were several reference issues pertinent to the cumulative analysis. Responses to each comment are provided in **Chapter 5.0**; this section includes analysis of the Preferred Alternative that responds to several of these comments.

3.15.1 REGULATORY REQUIREMENTS

Federal

Under NEPA, a cumulative impact on the environment results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts may result from individually minor but collectively significant actions taking place over a period of time.

State

Under CEQA, cumulative impacts are defined as two or more individual effects, which, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines Section 15355).

Consistent with Section 15130(a) of the CEQA Guidelines, the discussion of cumulative impacts in this ~~program-level~~ Program EIS/EIR focuses on significant and potentially significant cumulative impacts. Per Section 15130(b) of the CEQA Guidelines:

> "The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great a detail as provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

A project's contribution to a cumulative impact may be considered less than significant if it is implementing a plan or program designed to avoid the cumulative impact or if it will implement or fund its fair share of a mitigation measure designed to alleviate the cumulative impact.

3.15.1.1 Methods of Evaluation

The cumulative analysis describes the potential for the alternatives, in combination with related past, present and future projects, to result in cumulatively adverse environmental effects. Each analysis considers the area of cumulative analysis and identifies the relevant past, present, and future related to the potential cumulative impact. The evaluation identified whether the cumulative impact would be substantial and whether the contribution from a project alternative to a substantial cumulative impact would be considerable.

Past, Present, and Foreseeable Actions and Projects Considered in the Cumulative Analysis

Between Salinas and San Luis Obispo, the areas of the Coast Corridor and US 101 have served as important north-south routes for people and vehicles for more than two centuries. The relatively narrow and flat Salinas Valley facilitated the growth of El Camino Real dating back to the Mission Period in the late 18th century. Much of this historic route is now incorporated into either US 101 or nearby adjacent streets. The Coast Corridor railroad is located in ~~generally~~ close proximity to US 101 for much of its length, particularly between Salinas and Soledad. Railroads have operated along most of the Salinas Valley since the late 19th century. A continuous rail route from San Francisco to Los Angeles was completed just before the turn of the 20th century.[1]

This cumulative impacts discussion takes into account this past history, the proposed action, and other reasonably foreseeable future actions and projects. Given the programmatic nature of this analysis, the future foreseeable actions have been drawn from two main categories - land development and transportation projects.

Land development projects are likely to occur in and near the communities along the railroad. For the purposes of evaluating land development in the corridor between Salinas and San Luis Obispo, this analysis draws on the environmental reviews of the respective county General Plans (Monterey and San Luis Obispo) and, where more fine-grained analysis is appropriate, environmental reviews of locally adopted plans.

In addition, this analysis takes into account planned and programmed transportation improvement projects in the vicinity of the existing Coast Corridor rail alignment, US 101, and major local roadways. Therefore, proposed projects near US 101 are relevant to assess cumulative impacts for this program-level environmental document. These projects were obtained by review of federal and regional transportation improvement plans for Monterey and San Luis Obispo Counties.

Table 3.15-1 below summarizes the list of nearby projects assessed in this cumulative analysis. Since publication of the Draft Program EIS/EIR, one project has been added to the list of nearby projects included in the cumulative analysis.

It should also be noted that additional information has become available for one cumulative project, the Phillips 66 Rail Spur Extension Project. In November 2014, the County of San Luis Obispo published a recirculated Draft EIR for this project. Accordingly, the cumulative analysis in **Section 3.15.2** below includes updated information drawn from the recirculated Draft EIR for the Phillips 66 project.

[1] Ryan and Breschini, 2010

Table 3.15-1 Planned and Programmed Transportation Improvements, Monterey and San Luis Obispo Counties

ID Number	Project Title	Project Description	Project Location
Related Regional Projects			
NA	California High-Speed Rail	Construct a high-speed rail system running from San Francisco to Los Angeles/Anaheim via the Central Valley, and later to Sacramento and San Diego	San Francisco/Sacramento to Los Angeles/San Diego
NA	Phillips 66 Company Rail Spur Extension (Phillips 66) Project	Philips 66 proposes to modify the existing rail spur currently on the southwest side of the Santa Maria Refinery (SMR). The proposal would add up to 5 weekly trains that would likely from Utah, North Dakota, and/or Canada (based on market economics and other factors), entering the Coast Corridor somewhere from the north (likely Gilroy) and then arriving at the SMR.	Nipomo (San Luis Obispo County)
Monterey County			
<u>NA</u>	<u>Downtown Addition Specific Plan, City of King</u>	<u>Adopted specific plan for a 110 acre area immediately adjacent to proposed City of King passenger station calling for up to 650 housing units and over 190,000 square feet of retail development</u>	<u>Immediately adjacent to proposed City of King passenger station site on east side of railroad, downtown City of King</u>
CT014	US 101 - Airport Blvd. I/C East	Reconstruct interchange on the eastern portion of US 101/Airport Boulevard	US 101 at Airport Boulevard in Salinas
CT017	US 101 Improvements through Salinas	Analyze Salinas General Plan buildout traffic along the US 101 corridor through Salinas, determine mainline improvements to address long term needs and construct improvements.	Between Russell/Espinosa Road and Harris Road in Salinas

ID Number	Project Title	Project Description	Project Location
CT018	US 101 - Harris Road/Eastside Connector	Construct new Interchange on US 101 at Harris Road and construct 4 lane connector between Harris Road and Williams Road.	From US 101 at Harris Road to Williams Road in Salinas.
CT019	US 101 - South County Frontage Roads	Construct Frontage Roads from Harris Road to Chualar, then to Soledad	US 101 between Harris Road/Abbott Street (Salinas) and Soledad
GON008	Alta Street	Widen and reconstruct roadway	From Gonzales city limits to US 101 interchange – approx. 2 miles
GON012	US 101 5th St Bridge Widening	Widen 5th Street over US 101	US 101 at 5th Street, Gonzales
GON013	US 101/Gloria Road Interchange	Reconstruct US 101/Gloria Rd Interchange	US 101 at Gloria Rd., Gonzales
GRN019	US 101 – Walnut Avenue Interchange	Relocate and replace existing US 101/Walnut Avenue Interchange	US 101 at Walnut Avenue, Greenfield
GRN023	Pine Avenue Overcrossing at 101	Construct new bridge over US 101 to improve E-W traffic flow	US 101 at Pine Avenue, Greenfield
KCY013	US 101 – First street interchange	Extend San Antonio over railroad tracks from lone oak to US 101/First street interchange	King City
SNS045	Airport Boulevard Improvements	Widen Airport Blvd. from Elks Lodge to US 101 and extend bike lanes	Airport Blvd. from Elks Lodge to US 101, Salinas
SNS084	Salinas Intermodal Transportation Center Station Improvements	Upgrades to passenger service terminal and freight buildings	Salinas train station
SOL023	US 101 North Soledad Interchange	Modify North Soledad interchange on US 101 and construct ramp improvements	US 101 and Front Street (Moranda Road), Soledad
SOL024	US 101 South Interchange	Modify South Soledad interchange on US 101 and construct ramp improvements	US 101 and Front Street (Santa Lucia Drive) , Soledad

ID Number	Project Title	Project Description	Project Location
SOL025	US 101 – Camphoria Interchange	Install new interchange at Camphoria-Gloria Road	US 101 and Camphoria Gloria Road, Soledad
SOL026	SR 146- Bypass to US 101	Construct a new road from SR 146/Metz Road at City Limits to Los Coches Drive, to South US 101 interchange	City of Soledad
SOL036	Camphoria Gloria Road	Construct to 4 lanes	From US 101 to Orchard Lane Extension, Soledad
SOL044	Frontage Road	Construct to 4 lanes	From Front Street to Camphoria Gloria Road, Soledad
TAM018	Rail Capital Improvements	Includes station, platform, rail yard, track and parking improvements for the rail extension to Salinas project	Santa Clara, Santa Cruz, and Monterey Counties
TAM007	Rail Operations	Operating costs to run two round trips per day between Gilroy and Salinas	Santa Clara, Santa Cruz, San Benito, and Monterey Counties
San Luis Obispo County			
22300000243	Cuesta Grade to Santa Margarita Median Barrier	In SLO County, collision reduction project to install concrete median barrier and improve the intersection at Tassajara Creek Road to improve traffic safety and reduce cross median collisions.	US 101
22300000297	North Cuesta Grade Wildlife Fencing Project	On Route 101 From 0.1 mile south of the Cuesta Grade 0verhead to 1.5 miles north of the Santa Margarita Creek Bridge and on Highway 58 from the Route 101/58 Separation to 0.9 miles east of the Route 101/58 Separation, to install black vinyl clad chain link fencing for routing of wildlife to safe under highway culvert crossings for enhancing wildlife connectivity and reduce collisions.	US 101

ID Number	Project Title	Project Description	Project Location
22300000302	Paso Robles Median Barrier	Near Paso Robles, from South Paso Robles Overhead to Route 46; construct concrete median barrier.	US 101
22300000303	Cuesta Grade North Retaining Wall	Near San Luis Obispo, from 3.4 to 3.7 miles south of Route 58; construct retaining wall.	US 101
22300000331	101 Pavement Rehabilitation near Atascadero	In San Luis Obispo County, near Atascadero, rehabilitate 18.4 lane miles of pavement, dig out and repair areas of failure, seal cracks larger than 0.02 ft., and overlay existing pavement with 0.20 ft. conventional Asphalt Concrete (AC) along US 101 from north of Traffic Way UC to Vineyard Drive OC.	US 101
22300000340	North County Shoulder Improvements	Remove and replace shoulders from San Marcos Creek Bridge to San Luis Obispo/Monterey County lines.	US 101
22300000342	North Paso Robles Rehab	In San Luis Obispo county, in and near San Miguel, from San Marcos Creek Bridge to the Monterey County line, also in Monterey County (PM 0 - 1.9); pavement rehabilitation.	US 101
22300000438	US 101 Collision Reduction at Various Locations	In and near the city of San Luis Obispo, from Santa Maria River Bridge to Cuesta overhead at various locations; construct roadside paving, access gates, weed barriers and relocate facilities.	US 101
22300000439	US 101 Collision Reduction at Various Locations (North County)	In and near Atascadero, from Cuesta overhead to South Camp Roberts overhead, at various locations, construct roadside paving, access gates, weed barriers and relocate facilities.	US 101
22300000440	US 101 Roadway Preservation	In the city of San Luis Obispo, from San Luis Obispo Creek Bridge to 0.3 miles south of Santa Fe Bridge undercrossing, rehabilitate pavement.	US 101

ID Number	Project Title	Project Description	Project Location
22300000443	Tassajara Median Barrier Landscape Mitigation	In SLO County near Santa Margarita from 0.8 miles south to 0.7 miles north of Tassajara creek road; landscape mitigation.	US 101
22300000522	US 101 Highway Planting Rehabilitation	In SLO County, replace irrigation pressure and lateral supply lines, repair booster pump and motor covers and install appropriate replacement plantings on Route 101 at various locations from 0.2 mile south of Tefft Street Overcrossing to 0.2 mile north of Avila Road Overcrossing.	US 101
22300000523	US101/SR58 Off ramp reconfiguration	In SLO County, near Santa Margarita, reconfigure Route 101 southbound off-ramp to Route 58 to abate illegal left-turn movements at Route 101 southbound off-ramp terminus.	US 101

Sources: Transportation Agency for Monterey County, 2010; SLOCOG, 2013

3.15.2 CUMULATIVE IMPACT ANALYSIS

The cumulative impacts analysis follows the same order of environmental topics as **Chapter 3.0, Affected Environment**.

In considering cumulative effects at the program level, there is no substantial difference between the Build and Preferred Alternatives and, unless otherwise noted, for purposes of analysis the past and future projects are the same. In general, the Preferred Alternative would result in fewer/lesser impacts than the Build Alternative in the areas where components have been modified or excluded. For the purposes of this analysis, the following discussions summarize the effects of the action alternatives as equally applicable to both the Build and Preferred Alternatives unless otherwise noted.

The No Build Alternative is mentioned only when there are potential cumulative impacts that could result from not proceeding with either action alternative ~~the Build Alternative~~. Where the No Build Alternative would not result in impacts by 2020, or where the existing conditions would not change (or future conditions were considered too speculative to predict), the No Build Alternative is not addressed

3.15.2.1 Traffic and Travel

Area of Cumulative Analysis: The area of cumulative analysis for effects ~~related to~~ on traffic and travel include the US 101 corridor, the existing Coast Corridor railroad, roadways around existing and proposed train stations, and other major roadways between San Luis Obispo and Salinas.

Summary of ~~Build Alternative~~ Action Alternative Impacts: ~~The Build Alternative traffic and travel analysis determined that~~ Construction of many of the ~~proposed~~ physical ~~improvements~~ components would have potential to temporarily disrupt freight and passenger rail; but these effects would be ~~temporary~~ limited to active construction periods. Based on the analysis included in the SDP, the railroad between Salinas and San Luis Obispo can accommodate projected future levels of both freight and passenger traffic without significant disruption of on-time service.

Near existing and proposed passenger station areas, automobile traffic is anticipated to increase with the introduction of proposed Coast Daylight passenger rail service ~~near existing passenger stations in Salinas, Paso Robles, and San Luis Obispo, and at proposed stations in Soledad and King City~~. Despite these localized effects, increased passenger rail ridership is anticipated to result in small reductions in vehicle miles traveled/automobile traffic on US 101.

Present and Future Projects: Present and future projects that could affect traffic and travel include transportation and land development projects in Monterey and San Luis Obispo counties, including the Phillips 66 Project and the City of King's Downtown Addition Specific Plan, each of which are discussed in more detail below.

Potential for Cumulative Effects: The ~~Build Alternative~~ action alternatives, when combined with other transportation and land use development projects, may result in increased traffic levels near existing and proposed station areas that could worsen level of service at key intersections and thus cumulatively affect traffic in these locations. The potential for cumulative traffic impacts effects is considered below for land development projects, roadway transportation projects, and rail transportation projects. It should be noted that recommended mitigation and avoidance strategies outlined in **Section 3.1, Traffic and Travel** of this Final Program EIS/EIR would be incorporated in future development of any particular component of the action alternatives ~~Build Alternative~~ -to lessen any traffic or travel impacts. Similarly, the construction and operation of anticipated transportation and land development projects would likely be required to abide by similar environmental review processes as the ~~Build Alternative~~ action alternatives and would be expected to incorporate similar mitigation measures regarding traffic and travel. ~~Therefore, the Build Alternative would not contribute considerably to any cumulative impact related to traffic/transportation.~~

Land Use Projects: ~~In particular,~~ The City of Soledad identified cumulative traffic impacts ~~regarding~~ from new traffic in the downtown area generated as part of its Downtown Master Plan. This cumulative impact was based on the entire program of land development, one component of which was a rail passenger station and passenger train service identical to those elements of the action alternatives ~~Build Alternative~~ considered here. The action alternatives ~~Build Alternative~~ would not result in any new, not previously disclosed cumulative impact in the Soledad station area. ~~However, buildout of the Downtown Master Plan (including the new passenger station and additional service) would result in a cumulative traffic impact~~

Similarly, the City of King concluded that a cumulative traffic impact would result from implementation of the Downtown Addition Specific Plan. The Downtown Addition Specific Plan emphasizes residential and commercial uses that are intended to capitalize on its adjacency to the proposed City of King rail passenger station. In its EIR for the Downtown Addition Specific Plan (2008), the City of King concluded that buildout of the Downtown Addition area would result in a cumulative traffic impact at the intersection of Broadway Circle and the US 101 NB ramp (located approximately 1 mile west of the proposed City of King passenger station).

Additionally, as described in **Chapter 2.0, Alternatives**, since publication of the Draft EIS/EIR the City of King has adopted draft revised plans for the Multi-Modal Transportation Center – Conceptual Design ((MMTC) (2014)).

The action alternatives are focused on making rail system improvements. The Soledad and City of King land use projects were based in part of a presumption of passenger rail expansion and related rail system improvements. The key land use components of the action alternatives are the new station areas in Soledad and the City of King. Both cities identified potential cumulative effects on traffic resulting from buildout of respective downtown plans. The action alternatives -- assuming they incorporate expanded passenger rail service with stops in these cities -- would not be adding any intensity or density to these projects beyond that which has been previously analyzed at conceptual levels. Therefore, the action alternatives would not contribute considerably to any cumulative land development impact.

Roadway Transportation Projects: Other roadway projects in the vicinity entail operational- and safety-related improvements to US 101 and other major roadways. While construction may include impacts such as temporary detours and lane closures, most of the construction work would occur within or immediately adjacent to the roadway. Once these improvements are implemented, they would be consistent with existing roadway use. Therefore, the action alternatives ~~Build Alternative~~ combined with other transportation projects in the Central Coast region would not cumulatively affect traffic or travel in the study area.

Rail Transportation Projects: Phillips 66 ~~proposes to modify~~ has proposed to improve and make operational the existing rail spur to its Santa Maria refinery (SMR) near the community of Nipomo to ~~allow~~ accommodate up to five weekly trains delivering crude oil. It is anticipated that some of the oil trains would travel from points north and east, entering the Coast Corridor at San José and traveling south to the SMR. However, oil trains could also arrive at the SMR via a southern route that would not use any portion of the Coast Corridor between Salinas and San Luis Obispo.

~~It is expected that the majority of the trains would travel south on the Coast Corridor to the SMR, likely entering the corridor at San Jose. All but one existing siding (Templeton) are of sufficient length to accommodate the proposed Phillips 66 trains. A draft EIR for the Phillips 66 project did not identify any substantial impacts to on-time train performance and did not identify any need for any new physical rail facilities necessary in the Salinas to San Luis Obispo area. The additional freight traffic associated with the Phillips 66 proposal is consistent with anticipated long-term increases in freight traffic as considered in the Coast Corridor SDP. Given that the Build Alternative would improve elements of the existing rail infrastructure, and~~

~~would likely create and increase the length of multiple sidings, potentially including the Templeton Siding, the Build Alternative combined with the Phillips 66 Project and other potential increases in freight rail using the corridor, would not result in a cumulative impact.~~

The recirculated Draft EIR noted that three of the existing rail sidings between Salinas and San Luis Obispo (Bradley, McKay, and Templeton) are currently too short to accommodate the anticipated length of proposed oil trains. The action alternatives would extend the length of two of these insufficient sidings (Bradley and Templeton) such that oil trains could be accommodated. The recirculated Draft EIR concludes that there would be no cumulative rail traffic effect, the conclusion based in part on the SDP's analysis of future freight traffic on the Coast Corridor. Notwithstanding the lack of a cumulative or even project-level rail effect, the Draft EIR includes a mitigation measure calling for the project applicant (Phillips 66) to coordinate with UPRR in the scheduling of oil trains to minimize potential interference with all passenger trains on the Coast Corridor (existing Coast Starlight and Surfliner trains and prospective Coast Daylight).

Accordingly, since the action alternatives are intended to allow for expansion of passenger rail without disruption to existing or projected levels of freight traffic and the Phillips 66 project recirculated Draft EIR includes mitigation to coordinate with UPRR to reduce passenger rail conflicts, no cumulative effect regarding rail traffic would result.

3.15.2.2 Air Quality and Greenhouse Gas Emissions

Area of Cumulative Analysis: The area of cumulative analysis for effects to air quality and GHG emissions includes the North Central Coast and San Luis Obispo County Air Basins.

Summary of ~~Build Alternative~~ Action Alternative Impacts: The action alternatives would be constructed in two different air basins that are in attainment for most criteria pollutants, but are both subject to substantial emissions from previously developed roadway and railroad systems. The ~~Build Alternative~~ action alternatives would potentially result in new air quality and GHG emissions from construction of any or all of the physical components ~~improvements~~ and from increased train operations (locomotive emissions). These emissions would be somewhat lower for the Preferred Alternative compared to the Build Alternative because it would exclude four curve realignment areas in San Luis Obispo County. However, ~~the Build~~

~~Alternative~~ both action alternatives would potentially offset some of these emissions over time as increased rail passenger ridership ~~associated with~~ on the Coast Daylight would result in small reductions in regional air pollutant emissions and GHGs.

Present and Future Projects: Present and future projects that could affect air quality include other land development and transportation projects within the cumulative analysis area (the respective air basins), the construction or operation of which would result in increased regional emissions.

Potential for Cumulative Effects: With regard to regional effects, neither County concluded that General Plan buildout would result in cumulative air quality or GHG emissions impacts.

In the EIR for its Downtown Specific Plan, the City of Soledad concluded that specific plan buildout (which included -- but was not limited to -- the proposed passenger station and reinstitution of railroad passenger service) would contribute considerably to a cumulative adverse impact on regional air quality. Because this previously identified cumulative impact is directly related to proposed station area and railroad service included as part of the ~~Build Alternative~~ action alternatives, the action alternatives would not contribute any further to this cumulative impact.

The recirculated Draft EIR for the Phillips 66 project concluded that operations of new oil trains accessing the Santa Maria Refinery would result in cumulatively considerable emissions of NO_X and GHGs. As described in **Section 3.2**, the action alternatives would result in reduced regional VMT and would decrease regional emissions of air pollutants.

Overall, the ~~Build Alternative~~ action alternatives, when combined with planned and programmed transportation improvement projects, may affect air quality and GHG emissions in the two counties and the larger region over time. The planned and programmed transportation improvements are heavily focused on capacity optimizations of existing roadways in the project vicinity. No widening or other physical expansion of US 101 is planned, although some local streets in the vicinity of US 101 are planned to be widened or expanded. Operations of improved roadways could result in an increase in VMT and correlating increases in vehicle emissions.

Construction of these transportation improvements ~~as well as of~~ and anticipated land development projects would entail one-time, construction-period emissions of air pollutants and GHGs. Project-specific environmental reviews of these components ~~improvements~~ would likely incorporate conditions of approval and/or mitigation measures intended to limit construction~~-related~~ period emissions. Therefore, there would not likely be a cumulative impact related to construction emissions. ~~Operations of improved roadways could result in an increase in vehicle miles traveled (VMT) and related increases in vehicle emissions.~~

As noted above, the ~~Build Alternative presents some~~ action alternatives ~~-~~are likely to result in some small potential reductions in emissions of air pollutants and GHGs through an expected mode shift from automobile to passenger rail. Passenger rail has considerably lower GHG emissions per passenger mile than other modes, including aircraft, passenger cars and light-duty trucks.

Recommended mitigation and avoidance strategies outlined in **Section 3.2, Air Quality and Greenhouse Gas Emissions**, would be incorporated in future design and environmental documentation of any particular component of the ~~Build Alternative~~ action alternatives moved forward for construction. Similarly, the construction and operation of anticipated transportation and land development projects would likely be required to abide by similar environmental review processes as the ~~Build Alternative~~ action alternatives and would be expected to incorporate similar mitigation measures for air quality and GHG emissions.

Therefore, the ~~Build Alternative~~ action alternatives would not contribute considerably to any cumulative impact related to air quality or GHG emissions.

3.15.2.3 Noise and Vibration

Area of Cumulative Analysis: The area for cumulative analysis includes approximately a ¼-mile radius from individual components of the ~~Build Alternative~~ action alternatives. This area is based on the extent to which potentially significant noise and vibration can travel from the existing railroad and ~~proposed~~ physical ~~improvements~~ components.

Summary of ~~Build Alternative~~ Action Alternative Impacts: Existing roadways and railways are major contributors to ambient noise and vibration levels. Generally, noise will continue to grow as population increases and use of these existing highways and railroads increases. The ~~Coast Corridor study area travels through many agricultural areas with low population density as well as urban and developed areas~~ action alternatives would increase noise and vibration levels to sensitive receptors in these areas, ~~owing to expanded passenger rail service and physical improvements~~ particularly when trains sound their horns, travel at faster speeds, or where the tracks are realigned closer to residential areas. The Build and Preferred Alternatives differ notably in the potential to result in noise on nearby sensitive receptors. The Preferred Alternative excludes four curve realignments in populated areas of San Luis Obispo County; the Draft Program EIS/EIR concluded the potential for these curve realignments to result in potential noise effects.

Present and Future Projects: Present and future projects that have noise and vibration impacts include other land development and transportation projects within the cumulative analysis area, where the construction or operation of which would result in increased noise and vibration. The City of King's Downtown Addition Specific Plan noted the potential for a cumulative effect to result from automobile traffic noise along San Antonio Drive approximately 1/2-mile north of the proposed passenger station. Given this distance, the action alternatives would be unlikely to contribute considerably to this cumulative effect.

Potential for Cumulative Effects: A substantial portion of the existing railroad alignment between Salinas and San Luis Obispo is located within ¼ mile of US 101, so rail and traffic noise can combine to result in cumulative effects.

Similar to the ~~Build Alternative as a whole~~ components of the action alternatives, proposed transportation improvements, and planned land development projects would be phased in over time. Construction noise associated with any ~~Build Alternative~~ action alternative components selected for implementation along with noise associated with the construction of transportation improvements and land development projects would be unlikely to combine into cumulatively significant impacts.

In terms of operational impacts, the proposed transportation improvements would likely facilitate higher traffic volumes and would result in higher noise levels at locations in close proximity to US 101. Where these improvements are in close proximity to both the railroad/proposed improvements and sensitive receptors, there is the potential for railroad and highway noise to combine into a cumulatively significant impact.

The ~~Build Alternative's~~ action alternatives' major noise contribution would be the noise associated with passing trains - 2 per day in the opening year and up to 4 per day in the horizon year of 2040. From any point along the railroad, train passings would be relatively short duration events - about 1 minute per train, or up to 4 minutes per day. If constructed, the Phillips 66 project could add 5 weekly oil trains (of about 80 cars in length) to the portion of the Coast Corridor between Salinas and San Luis Obispo. These passings would be longer than those of shorter passenger trains, but were not found to result in cumulative noise effects per the recirculated Draft EIR. In contrast, roadway transportation noises increases would likely occur for much longer durations - potentially several hours. Given the short duration of passing trains and associated noise, the ~~Build Alternative's~~ action alternatives' contribution would likely not be cumulatively considerable.

Similarly, train activity at the existing and proposed stations would result in changes in the noise and vibration environment at these locations. However, trains would be traveling at relatively low speeds in and out of the station areas for relatively few, short durations and would thus be unlikely to result in any cumulatively significant effect.

Avoidance, minimization, and mitigation measures consistent with the strategies outlined in **Section 3.3, Noise and Vibration** would likely be incorporated in future development of any particular component of the ~~Build Alternatives~~ action alternatives to lessen any noise or vibration-related impacts. Similarly, the construction and operation of anticipated transportation and land development projects would likely be required to subject to CEQA and/or NEPA environmental review and would thus be expected to incorporate feasible measures to avoid or lessen any identified noise and vibration impacts.

Therefore, the ~~Build Alternative~~ action alternatives would not contribute considerably to any cumulative impact related to noise or vibration.

3.15.2.4 Energy

Area of Cumulative Analysis: The area of analysis for energy cumulative effects includes Monterey and San Luis Obispo Counties and the Central California region as a whole.

Summary of ~~Build Alternative~~ Action Alternative Impacts: The ~~Build Alternative~~ action alternatives would result in construction energy usage for the manufacture of materials and the use of heavy equipment, construction worker travel to and from active work sites, and potential construction-related detours. The ~~Build Alternative~~ action alternatives would also include expansion of passenger rail service, which would require energy resources (petroleum products) for locomotive power.

Present and Future Projects: Present and future projects that could have energy impacts include any other development projects within the cumulative analysis area, where the construction or operation of which would result in the consumption of energy.

Potential for Cumulative Effects: The ~~Build Alternative~~ action alternatives, along with existing and anticipated transportation and land development projects would result in the consumption of energy resources.

Monterey and San Luis Obispo Counties have planned and programmed several transportation improvement projects that would require energy resources for construction and would facilitate increased operational energy consumption through increased road VMT. Planned land use development projects would require energy resources during both construction and operation. Together, the ~~Build Alternatives~~ action alternatives with other transportation and land use development projects could constitute significant cumulative energy impacts.

However, the ~~Build Alternative~~ action alternatives would ultimately reduce transportation energy consumption by increasing passenger ridership and by increasing the efficiency of the existing railroad operations.

Recommended mitigation and avoidance strategies outlined in **Section 3.4, Energy** would be incorporated in the design and development of any particular component of the ~~Build Alternative~~ action alternatives to lessen any energy consumption impacts. Similarly, the construction and operation of anticipated transportation and land development projects would likely be required to abide by similar environmental review processes as the action alternatives and would thus be expected to incorporate similar mitigation measures.

Therefore, the ~~Build Alternative~~ action alternatives would not contribute considerably to any cumulative impact related to energy usage.

3.15.2.5 Land Use and Planning

Area of Cumulative Analysis: The area of cumulative analysis for effects to land use and planning includes Monterey and San Luis Obispo Counties, particularly the communities in proximity to the existing railroad and the ~~Build Alternative~~ action alternatives (including Salinas, Chualar, Gonzales, Soledad, Greenfield, King City, San Ardo, Bradley, San Miguel, Paso Robles, Atascadero, Templeton, Santa Margarita, and San Luis Obispo).

Summary of ~~Build Alternative~~ Action Alternative Impacts: Land use patterns along the Salinas to San Luis Obispo portion of the railroad have been generally stable for several decades. Development has largely been focused within established communities. With a few notable exceptions, outside existing communities, lands are generally in agricultural/viticultural use, institutional use, or open space. Construction activities could result in temporary land use impacts and could include road closures and traffic detours, which could in turn disrupt access to public facilities, emergency vehicle access, and pose potential physical barriers to communities and business districts.

All curve realignments, as well as several sidings and extensions, would require acquisition of lands outside the existing railroad ROW and the conversion of these lands to railroad use. Acquisition of adjacent agricultural, residential, and open space lands would result in an incompatible land use, and could result in environmental justice impacts.

Present and Future Projects: Present and future projects that could affect land use and planning include transportation and land development projects in Monterey and San Luis Obispo counties.

Potential for Cumulative Effects: The ~~Build Alternative~~ action alternatives, in combination with related transportation and land development projects could contribute to cumulative impacts to land use, communities, property, and environmental justice.

In terms of *land use compatibility*, the ~~Build Alternative~~ action alternatives would help foster planned development around proposed station areas in Soledad and King City. Increased passenger rail service could also help reinforce the visitor-serving land uses patterns around existing train stations in Salinas and Paso Robles. The San Luis Obispo station area is primarily residential in character, but also includes some visitor-serving mixed-use development along Osos Street, which could be reinforced by ~~the Build Alternative~~ the increased passenger rail activity that the action alternatives would introduce. Therefore, within established communities, the action alternatives ~~Build Alternative~~ would have complementary and beneficial effects to land use compatibility.

Outside of established communities, curve realignments and siding improvements could result in the permanent conversion of lands from agricultural, residential, or open space uses into transportation use. Some siding improvements and the bulk of other physical components ~~improvements~~ would be constructed immediately along the existing rail line or within the railroad ROW.

In contrast, planned land development and transportation projects are less likely to result in land use conversions. Land development projects face generally well-defined urban growth boundaries and/or local limitations on the conversion of agricultural lands. Planned transportation improvements primarily involve operational enhancements that would not require substantial additional ROW or direct conversion of residential, commercial, or agricultural land uses to transportation uses.

~~As the extent to which the Build Alternative might~~ The Draft Program EIS/EIR noted that the Build Alternative could result in a cumulatively significant land use impact ~~if one or more of the curve realignments is ultimately constructed and would convert substantial residential~~ related to the possible construction of curve realignments, particularly those that would result in substantial conversion of residential and/or agricultural lands to a transportation use. The Preferred Alternative excludes four curve realignments in San Luis Obispo County that had potential to incorporate residential and agricultural lands into transportation use. Accordingly, the Preferred Alternative would result in somewhat less potential for cumulative effects than the Build Alternative. The Preferred Alternative retains curve realignments in Monterey County. Other sections of this Final Program EIS/EIR note the potential for the Monterey County curve realignments to result in substantial effects on agricultural lands. Project-level design refinements and ~~funding availability~~ would determine if ~~any of~~ any carried forward curve realignments would ultimately result in conversion to non-agricultural use and if any cumulative impact would occur.

Similarly, *property* impacts are unlikely for most of the anticipated land development and ~~programmed~~ transportation projects ~~improvements~~. Land development projects generally proceed only with the consent of the property owner and would be unlikely to result in the use of private property. Programmed transportation projects are ~~set~~ planned to generally occur within or immediately adjacent to the area's existing transportation facilities. As no major roadway expansion projects are included in the list of ~~programmed improvements~~ transportation projects, the potential for substantial conversion of private property is minimal.

In contrast, certain components of the ~~Build~~ action alternatives have a much greater potential to require property acquisition. These components include curve realignments and other features for which only schematic plans have been developed; final plans could require acquisition of land outside the existing railroad ROW. Since the extent to which the ~~Build~~ action alternatives might result in property acquisition is unknown, it is assumed the ~~Build~~ action alternatives could result in a cumulatively significant property impact if one or more of the curve realignments are deemed necessary and property acquisition proceeds accordingly. As noted above, the Preferred Alternative omits four San Luis Obispo County curve realignments, thus substantially reducing the need for land acquisition/property impacts in San Luis Obispo County. Project-level design refinements and funding availability will determine if any of the curve realignments would ultimately result in private property acquisition and if any cumulative impact would occur.

3.15.2.6 Aesthetics and Visual Resources

Area of Cumulative Analysis: The area of cumulative analysis for effects to visual resources and aesthetics includes the viewshed, or the visible environment, surrounding the ~~Build Alternative~~ action alternatives' study area. The ~~Build Alternative~~ action alternatives entail about 130 miles of railroad and existing/proposed station areas, all in relative proximity to the US 101 corridor between Salinas and San Luis Obispo.

Summary of ~~Build~~ Action Alternative Impacts: The visual analysis determined that construction and operation of some of the ~~proposed~~ physical components ~~improvements~~ could result in visual impacts. In general, construction impacts include the temporary visual presence of construction equipment, light and glare impacts from any nighttime construction work, and disturbed natural land cover that would recover to its original undisturbed form once construction is complete. Operational impacts include physical changes to the additional passenger and freight rail cars over time, existing land cover, particularly where new track alignments would convert existing land cover in residential and open space areas to railroad use.

~~The Build Alternative, in combination with related transportation and land development projects could contribute to cumulative visual impacts.~~

Present and Future Projects: Present and future projects that could affect aesthetics and visual resources include transportation and land development projects in Monterey and San Luis Obispo counties.

Potential for Cumulative Effects: According to the Monterey County General Plan EIR, future growth within Monterey County would result in intensification of existing urban ~~land~~ uses, as well as conversion of open space into urban land uses. The General Plan EIR concluded that the conversion of undeveloped land to urban uses, future land development projects would obstruct views of scenic areas and would result in a significant cumulative impact to visual character and quality in the County.

In considering the potential of the ~~Build Alternative~~ action alternatives to combine with land development and transportation projects to result in cumulative visual impacts, it is important to note that ~~proposed~~ the transportation projects would have negligible visual impacts because the improvements would largely occur within or immediately adjacent to existing transportation corridors, resulting in relatively little overall change in visual character or quality. The Phillips 66 project could result in additional rail transport activity, but ~~such~~ these activities are consistent with the visual context of the rail corridor and would be unlikely to result in substantial/significant visual effects. Additionally, ~~Build Alternative~~ action alternative ~~improvements~~ components such as track and signal upgrades, new powered switches, and new sidings and siding extensions, would also largely occur within or adjacent to the existing railway ROW and would result in minimal visual effects.

However, curve realignments would result in some conversion of agricultural, open space, and residential lands to rail transportation use. ~~Such~~ This conversion could permanently alter the visual character of affected areas. Recommended mitigation and avoidance strategies outlined in **Section 3.6, Aesthetics and Visual Resources,** would be incorporated in the design and development of any particular component of the Build Alternative to lessen any visual character/quality impacts. The Preferred Alternative excludes four curve realignments in San Luis Obispo County, thereby reducing the potential of the Preferred Alternative to result in cumulative visual impacts between McKay and Santa Margarita.

Since both the Build and Preferred Alternatives retain curve realignments in Monterey County, ~~as the extent to which the Build Alternative might result in such conversion is unknown,~~ it is assumed here that the ~~Build Alternative~~ action alternatives could result in a cumulatively significant visual impact if one or more of the curve realignments is ultimately constructed and would convert substantial areas of residential or agricultural land to a transportation use. Project-level design refinements and funding availability would determine if any of the curve realignments would ultimately result in such conversion and if any cumulative impact would occur.

Recommended mitigation and avoidance strategies outlined in **Section 3.6, Aesthetics and Visual Resources** would be incorporated in the design and development of any particular component of the action alternatives to reduce any visual character/quality impacts. Similarly, the construction and operation of anticipated transportation and land development projects would likely be required to abide by similar environmental review processes as the Build Alternative and would be expected to incorporate similar mitigation measures.

3.15.2.7 Agricultural and Forest Resources

Area of Cumulative Analysis: The area considered for cumulative impacts to farmlands includes Monterey and San Luis Obispo Counties, as described in **Section 3.7, Agricultural and Forest Resources.**

Summary of ~~Build~~ Action Alternative Impacts: Many of the components of the ~~Build Alternative~~ action alternatives would require construction outside the existing railroad ROW outside urban areas and, in several locations, would require the temporary use of farmland during construction and/or the permanent conversion of farmland.

Summary of Present and Future Projects: Present and future projects that could affect agriculture and forest resources include transportation and land development projects in Monterey and San Luis Obispo counties, particularly those occurring outside of urban areas.

Potential for Cumulative Effects: According to the Monterey County General Plan EIR, buildout of the General Plan would cumulatively contribute to conversion of Important Farmland to non-agricultural uses. Some farmland conversion is also anticipated in San Luis Obispo County, but very little Prime Farmland conversion is expected in either county, owing to strong farmland protection measures each county has adopted. The City of King identified a cumulatively considerable effect on agriculture in its EIR for the Downtown Addition Specific Plan. The City found that implementation of the Specific Plan could considerably contribute to the conversion of agricultural lands. In addition, the recirculated Draft EIR for the Phillips 66 project identifies a potential significant and unavoidable effect on agricultural lands. In the event of an oil train derailment and/or spill, the effect would occur along the UPRR mainline (including, but not limited to, the portion between Salinas and San Luis Obispo).

The action alternatives would not contribute considerably to either of these effects. In the City of King, the action alternatives include a passenger station that would be located within the urbanized area of the City and would not result in any conversion of farmland. The revised draft plans for the City of King's siding extension have the potential to indirectly affect agricultural lands north of the City, but these effects would be limited or avoided entirely if the siding extension can be located within the railroad ROW.

The action alternatives contemplate expanded passenger rail service along the Coast Corridor. The risk of agricultural damage resulting from the potential derailment of a passenger train would be far less than that which could result from the derailment of an oil train. This is because an oil train would carry up to 80 rail cars of crude oil or related products; a passenger train would typically carry only enough fuel to power the locomotive. Accordingly, a passenger train derailment presents far less risk to adjacent agricultural lands than an oil train derailment or spill; the action alternatives would not contribute considerably to this cumulative impact.

Proposed transportation ~~improvements~~ projects would largely take place within the footprint of US 101 or other adjacent roadways in the region and would be unlikely to combine with the ~~Build Alternative~~ action alternatives to result in any significant cumulative effect to agricultural or forest lands. Furthermore, ~~Build Alternative~~ the action alternatives' components, ~~improvements~~ such as track and signal upgrades, new powered switches, sidings and siding extensions, would also largely occur within or adjacent to the existing railway ROW and would have little effect to agricultural land.

Curve realignments would result in conversion of agricultural lands to rail transportation use. The conversion would permanently alter the affected areas and could contribute to agricultural conversion effects from other land development projects in the region. The action alternatives include differing levels of curve realignments. The Preferred Alternative has four fewer curve realignments than the Build Alternative. Both action alternatives include curve realignments in Monterey County. All of the proposed curve realignments in Monterey County would be located in highly agricultural areas; the conversion of any Monterey County farmland would be considered a significant and unavoidable impact. The extent to which the ~~Build Alternative~~ action alternatives might result in conversion is unknown, it is assumed here that the ~~Build Alternative~~ action alternatives could result in a cumulatively significant impact on farmlands if one or more of the curve realignments is ultimately constructed and would convert substantial areas of agricultural land to a transportation use. Project-level design refinements and funding availability would determine if any of the curve realignments would ultimately result in such conversion and if any cumulative impact would occur.

Recommended mitigation and avoidance strategies outlined in **Section 3.7, Agricultural and Forest Resources**, would be incorporated in the design and development of any particular component of the ~~Build Alternative~~ action alternatives to lessen any farmland ~~related~~ impacts. However, loss of Prime Farmland impacts cannot be mitigated to a less-than-significant level even though conservation easements and other measures may lessen the impact.

3.15.2.8 Public Utilities and Services

Area of Cumulative Analysis: The area considered for cumulative effects to utilities and public services correspond to the service areas of the particular utility and public service (police and fire) providers.

Natural gas providers PG&E and SCE ~~respectively~~ serve substantial portions of northern and southern California. Electricity is provided by PG&E, whose service area extends from Shasta County to Santa Barbara County. Water and wastewater services are provided by a combination of local special districts and private companies whose service areas extend well beyond the immediate boundaries of the project study area. Police and fire services are provided either by County agencies, whose jurisdiction spans the entirety of the affected counties, or by local agencies, who serve incorporated communities along the project corridor.

Summary of Action Alternative Impacts:

Utility conflicts: Proposed new and/or extended sidings, along with the proposed second mainline, have the potential to conflict with existing utility transmission facilities in and around the existing railroad ROW.

Utility usage: Some components of the ~~Build Alternative~~ action alternatives would require connections to public utilities such as water, electricity, and natural gas. Proposed new stations would likely be the most utility intensive ~~Build Alternative~~ components; powered switches and signaling mechanisms would also require electricity.

Public service demand generation: The vast majority of physical components ~~improvements~~ comprising the ~~Build Alternative~~ action alternatives, such as railroad sidings/extensions or curve realignments, would have a neutral effect on increasing demand for public services like fire and police. In contrast, proposed new stations could require increased police and fire services; increased ridership at existing stations could also increase demand for public services.

Present and future projects that could affect utilities and public services include transportation and land development projects not only in Monterey and San Luis Obispo counties, but potentially points well beyond when considering gas and electric providers, which operate across multiple regions in the state.

Present and Future Projects: Present and future projects that could affect public utilities and services include transportation and land development projects in Monterey and San Luis Obispo counties.

Potential for Cumulative Effects: In terms of utility conflicts, the components of the action alternatives ~~Build Alternative~~ that would require construction of new linear facilities either inside or outside the railroad ROW may conflict with existing pipelines, electrical transmission lines, communication facilities, or other linear utilities. The severity of these impacts can usually be lessened substantially through a combination of careful design, avoidance, and/or protection-in-place policies, as called for in the mitigation strategies ~~discussion presented here in~~ discussed in **Section 3.8, Public Utilities and Services**. Similarly, future transportation projects may require construction/grading in or near existing transportation facilities like US 101, where similar utility conveyances can be found. ~~As it is reasonable to expect that~~ Because other projects would be subject to similar mitigation to avoid or minimize any utility conflicts, there would be no cumulatively significant impact regarding utility conflicts.

Regarding electric and gas utilities, the ~~Build Alternative~~ action alternatives would, in combination with planned/anticipated land development in the Central Coast region, result in additional demand for electricity and natural gas. The ~~Build Alternative~~ action alternatives would require additional utilities primarily at proposed stations and electric power specifically for signal upgrades and switching equipment. ~~Similarly,~~ Demand for water and wastewater services would also increase as a result of planned land development combined with the ~~Build Alternative~~ action alternatives.

Demand for police and fire services would likely increase from both planned transportation and land development projects. Proposed transportation ~~enhancements~~ projects would facilitate additional vehicle travel on US 101 and adjacent roadways ~~thus increasing~~. This increase in vehicle travel has the potential to result in an increased frequency of accidents on US 101 due to a heavier flow of traffic, and thus could lead to an increased demand for emergency response services. Additional railroad freight traffic ~~as well as all~~ and land development called for in adopted local plans would similarly increase demand for emergency response. In particular, the Phillips 66 project, per its recirculated Draft EIR, would result in significant and unavoidable project-level and cumulatively considerable effects on emergency response services in the event of an oil train derailment, spill, or similar emergency.

Individual rail components ~~improvements~~, such as curve realignments and the second mainline, would have no foreseeable connection to increased demand for public services. New or expanded station areas could incrementally contribute to increased demands for public services (police response, emergency services, etc.). However, the anticipated increase in station area activity would be modest, even in the two communities where new stations are planned. Neither of the environmental documents for the Soledad or King City station area/downtown plans indicated any significant effect to public services as a result of plan implementation. Anticipated increases in passenger activity at the Salinas and San Luis Obispo stations are not at such high levels that substantial public services impacts could occur. ~~even in the two communities where new stations are planned. Neither of the environmental documents for the Soledad or King City station area/downtown plans indicated any significant effect to public services as a result of plan implementation. Anticipated increases in passenger activity at the Salinas and San Luis Obispo stations are not at such high levels that substantial public services impacts could occur.~~ It is unlikely that implementation of the ~~Build Alternative~~ action alternatives in conjunction with other planned development projects would result in a cumulative impact to emergency services; however, future project-level review will include coordination with emergency service providers to ensure no significant impacts would occur.

Disruption of utility services could occur as a result of potential conflicts with electric transmission lines, natural gas pipelines, oil pipelines, wastewater and water utilities, and other utilities during construction of other roadway improvement projects (US 101 and local roads). However, measures would be taken to avoid potential conflicts in advance to the extent feasible and practical; therefore, few additional conflicts are expected from future transportation improvements.

Recommended mitigation and avoidance strategies outlined in **Section 3.8, Public Utilities and Services,** of this Final Program EIS/EIR would be incorporated in future development of any particular component of the ~~Build Alternative~~ action alternatives to lessen impacts on utilities and public services. Similarly, the construction and operation of anticipated transportation and land development projects would likely be required to abide by similar environmental review processes as the ~~Build Alternative~~ action alternatives and would be expected to incorporate similar mitigation measures ~~regarding~~ for utilities and public services. Therefore, the cumulative impact ~~related~~ to utilities and public service providers operating in the Central Coast region would not be substantial.

3.15.2.9 Hazardous Materials and Wastes

Area of Cumulative Analysis: The area of cumulative analysis considered for hazardous materials effects includes the areas identified within 1/8-mile radius around the ~~Build Alternative~~ study area, including major roadways between Salinas and San Luis Obispo.

Summary of ~~Build Alternative~~ Action Alternative Impacts: Overall, there is potential risk to uncover hazardous materials near roadways and agricultural areas within the entire Coast Corridor study area, because of the potential for aerially deposited lead and particulate matter deposited from vehicles (both automobiles and trains), as well as pesticide use along the railroad and along roadways. As a result, construction activities may encounter contaminated soil containing pesticide or herbicide residue, aerially deposited lead, or other soil or groundwater contaminants. Furthermore, database searches identified both active- and closed-status hazardous sites within the study area.

The ~~Build Alternative~~ action alternatives would not result in sustained, long-term, routine transportation of hazardous materials. However, the Phillips 66 project proposes increased use of the railroad for transport of crude oil, a potentially hazardous substance if mishandled. Since the action alternatives would not routinely transport hazardous materials, they would not contribute considerably to any related cumulative effect.

Present and future projects that would cumulatively risk exposure to hazardous materials or wastes include other transportation and land use development projects. The construction of both types of projects, similar to the ~~Build Alternative~~ action alternatives, would require the use of materials that could be considered hazardous if used, stored, or transported improperly. Such materials are strictly regulated by federal, state, and local laws specifically to ensure they do not result in a gradual increase in toxins in the environment. Both counties reinforce these regulations by requiring that construction and operation be conducted ~~pursuant to~~ in accordance with applicable standards and regulations. These are implemented as part of normal development review and construction permitting procedures and typically reduce project-specific impacts to a less-than-significant level.

Present and Future Projects: Present and future projects that could have hazardous material and waste impacts include transportation and land development projects in Monterey and San Luis Obispo counties, as well as the Phillips 66 project.

Potential for Cumulative Effects: Compliance with federal, state, and local regulations concerning the storage and handling of hazardous materials and waste would reduce the potential for significant public health and safety impacts from hazardous materials to occur. Therefore, future development would not affect the number of people exposed to risks of hazardous materials.

Risks of encountering a recorded hazardous waste site are location-specific and would not contribute to (in an additive sense) the impacts on other sites. The present and future projects within close proximity to the study area are generally geographically disperse and it is not anticipated that they would use quantities of hazardous materials that would combine in a way that would endanger human or environmental health. However, other transportation projects may encounter contaminated soil containing pesticide or herbicide residue, aerially deposited lead, or other soil or groundwater contaminants along major roadways.

The Phillips 66 project, if approved, would add up to five weekly freight trains carrying crude oil through the entirety of the Salinas to San Luis Obispo corridor. This would be in addition to existing freight traffic that includes periodic transport of oil from San Ardo south to refineries in the Los Angeles area. The action alternatives would not transport large quantities of hazardous materials by rail and would not contribute considerably to any cumulative effect. ~~The Build Alternative would not contribute to any increase in freight rail or more specifically the transport of hazardous materials by rail.~~

Overall, hazardous materials are regulated by state and federal laws specifically to ensure that they do not result in a gradual toxification of the environment. Recommended mitigation strategies identified in **Section 3.9, Hazardous Materials**

and Wastes, would lessen the adverse effects to hazardous materials ~~as a result.~~ Similar mitigation measures would be implemented as part of the present and future projects to alleviate potential adverse effects to hazardous materials. Each individual project would be required to conduct subsequent environmental analysis to investigate and report any findings of contaminated soil or groundwater. Therefore, it is not anticipated that there would be any cumulative impact ~~related~~ to hazardous materials or wastes.

3.15.2.10 Cultural and Paleontological Resources

Area of Cumulative Analysis: The cumulative context for cultural resources are transportation and land use development projects in both counties that could potentially affect archaeological, historical, or paleontological resources.

Summary of ~~Build Alternative~~ Action Alternative Impacts: The ~~Build Alternative~~ action alternatives propose physical components ~~improvement~~s near potentially historic and archaeological sites, ~~as well as some~~ and paleontological sensitive areas.

Present and Future Projects: Present and future projects that would cumulatively affect cultural and/or paleontological resources include other transportation and land use development projects that would affect the same cultural or paleontological sites as the ~~Build Alternative~~ action alternatives.

Potential for Cumulative Effects: Both County General Plan EIRs concluded that build out (encompassing both land development and circulation improvements) would not result in any significant cumulative impact to cultural resources. Cumulative impacts to cultural ~~historical~~ resources can occur when development of an area results in the removal of a substantial number of historic structures, archaeological sites, or paleontological resources that when taken in combination could degrade the physical historical record of an area.

Cultural resources - both known and unknown-- are protected by a number of federal, state, and local regulations, reinforced by goals, policies, and mitigations associated with each county's general plan as well as the planning documents of county transportation agencies. Furthermore, recommended mitigation and avoidance strategies outlined in **Section 3.10, Cultural and Paleontological Resources,** of this program ~~level~~ EIS/EIR would be incorporated in future development of any particular component of the ~~Build Alternative~~ action alternatives to lessen any impacts on these resources. Similarly, the construction and operation of anticipated transportation and land development projects would be required to abide by similar environmental review processes as the ~~Build Alternative~~ action alternatives and would be expected to incorporate similar mitigation measures. Therefore, there would be no cumulatively significant impact to cultural resources.

3.15.2.11 Geology, Soils, and Minerals

Area of Cumulative Analysis: The area considered for cumulative effects ~~related to~~ for geology and soils includes any proposed land development or transportation projects in the vicinity of the ~~Build Alternative~~ action alternatives.

Summary of ~~Build Alternative~~ Action Alternative Impacts: Geology and soils-~~related~~ hazards exist within and near the Coast Corridor rail alignment, as well as where ~~Build Alternative~~ physical components ~~improvements~~ are proposed. These hazards include varying degrees of surface fault rupture, ground shaking, liquefaction, corrosive and/or expansive soils, and landslides. The ~~Build Alternative~~ action alternatives are not expected to have any significant impacts ~~related~~ to geology and soils with the implementation of avoidance and minimization measures.

Present and Future Projects: As environmental effects to geology and soils are located in the same geologic setting, both present and future transportation and land development projects would be exposed to similar hazards.

Potential for Cumulative Effects: The respective General Plan EIRs noted that future build-out and urbanization would result in greater exposure of persons and property to geologic and soil hazards, but that adherence to goals and policies, as well as County and local building codes and other mitigation measures, would not combine to result in a cumulative impact ~~related~~ to geology and soils.

~~Cumulative geology and soils impacts could occur if a significant number of people and/or a significant amount of property would be exposed to any one or more geologic/soils hazards, landslides, seismic shaking, ground failure, and many others.~~

It is unlikely that the ~~Build Alternative~~ action alternatives, in combination with projected land development and transportation projects, would result in a cumulatively significant impact ~~related~~ to geology/soils hazards or mineral resources. This is due to the enactment of a number of federal, state, and local regulations, as well as several adopted goals, policies, and mitigations ~~associated with~~ in local general plans that individually and collectively aim to reduce geology and soils ~~related~~ impacts on all land development and transportation projects. Similarly, mineral resources are protected at the local level. Future transportation projects are generally planned for existing transportation corridors and land use projects for urbanized areas; as such, neither type of project would be likely to result in limitation of access to important mineral resources.

Recommended mitigation and avoidance strategies outlined in **Section 3.11, Geology, Soils, and Minerals,** of this Final Program EIS/EIR would be incorporated in future development of any particular component of the ~~Build Alternative~~ action alternatives to lessen any impacts on these resources. Similarly, the construction and operation of anticipated transportation and land development projects would likely be required to abide by similar environmental review processes as the ~~Build Alternative~~ action alternatives and would be expected to incorporate similar mitigation measures. Therefore, there would be no cumulatively significant impact to geology, soils, or minerals.

3.15.2.12 Hydrology and Water Resources

Area of Cumulative Analysis: The area of cumulative analysis for hydrology resources includes the ~~Build Alternative~~ action alternatives study area ~~identified plus~~ and nearby and related watersheds. These include the Salinas River and its tributary drainages. In addition, regional groundwater basins are also part of the cumulative study area.

Summary of ~~Build Alternative~~ Action Alternative Impacts: The ~~Build Alternative~~ action alternatives could result in potential impacts to surface waters through runoff during construction activities, operation-related pollution in areas immediately adjacent to surface waters, and potential surface water crossings as further described below. The ~~Build Alternative~~ action alternatives would have relatively little potential to deplete groundwater resources or impede groundwater recharge.

Present and Future Projects: Present and future projects that could contribute to cumulative impacts to the identified water resources within the area of cumulative analysis include transportation and development.

Potential for Cumulative Effects: According to the Monterey County General Plan EIR, general plan buildout would result in significant and unavoidable cumulative hydrological impacts ~~related to~~ from the loss of area available for groundwater recharge, water quality deterioration, and water supply. In contrast, the EIR for the San Luis Obispo County Conservation and Open Space Element (COSE) reduced the amount of allowable development from what had been previously allowed ~~thereby reducing potential~~ in order to reduce impacts ~~related~~ to groundwater depletion and other water quality impacts.

In evaluating whether the ~~Build Alternative~~ action alternatives would contribute considerably to cumulative hydrological impacts, it is important to note that ~~the Build Alternative~~ neither action alternative would ~~not~~ directly result in any major new demand for water resources because they would not create any new housing units, ~~any new~~ maintenance facilities, or new commercial or industrial users, all of which could be substantial users of water. Moreover, the ~~Build Alternative's~~ action alternatives' effects to surface waters can be avoided or minimized through careful design. The ~~Build Alternative~~ action alternatives would not result in a substantial number of new stream crossings. The Preferred Alternative, in its inclusion of the revised draft plan for the City of King siding extension, reflects the proposed design. The revised draft plan would extend the siding only on the north side of the existing siding, avoiding a southern extension which would have required a stream crossing and be located within a 100-year flood plain. Recommended mitigation and avoidance strategies outlined in **Section 3.12, Hydrology and Water Resources,** of this ~~program level~~ Program EIS/EIR would be incorporated in future development of any particular component of the ~~Build Alternative~~ action alternatives to lessen any impacts on these resources. Similarly, the construction and operation of anticipated transportation and land development projects would be required to abide by similar environmental review processes as the ~~Build Alternative~~ action alternatives and would be expected to incorporate similar mitigation measures. Therefore, there would be no cumulatively significant impact to hydrology and water resources.

3.15.2.13 Biological Resources and Wetlands

Area of Cumulative Analysis: The area of cumulative analysis for biological resources includes the study area identified for the ~~Build Alternative plus~~ action alternatives and any immediately adjacent lands and waterways containing sensitive biological resources (sensitive habitats or protected plant or animal species).

Summary of ~~Build Alternative~~ Action Alternative Impacts: The biological resources and wetlands analysis determined that the ~~Build Alternative~~ action alternatives would have a heightened potential to result in temporary or permanent impacts directly proportional to the extent to which components ~~of the Build Alternative~~ diverge substantially from the existing railroad ROW onto lands that include sensitive vegetation, special-status species, critical habitat for protected species, wetlands, or non-jurisdictional waters. For example, ~~one of the proposed curve realignments could~~ the Build Alternative includes a proposed curve realignment (McKay/Wellsona) that could entail use of lands within a designated wildlife area (Big Sandy) along the Salinas River near Camp Roberts. ~~However, if some or all of this curve realignment can be designed to avoid or minimize its intrusion into the~~

~~wildlife area, the extent of potential impact would be reduced considerably.~~ The Preferred Alternative omits this entire curve realignment and would avoid an intrusion on the wildlife area.

Present and Future Projects: Present and future projects that could contribute to cumulative impacts to the identified biological resources within the area of cumulative analysis include planned transportation and development projects.

Cumulative Effects: Neither County's general plan EIR identified any significant cumulative impact related to buildout of their respective general plans. However, the ~~Build Alternative~~ action alternatives, in combination with other land development and transportation projects in the area, could result in significant threats to protected plant or animal species or their habitats if significant new barriers to wildlife movement were created or if substantial areas of wetlands were converted or otherwise compromised.

Cumulative impacts to these resources are highly unlikely to occur in part due to a broad array of federal, state, and local regulations, as well as several adopted goals, policies, and mitigations ~~associated with~~ in local general plans that individually and collectively aim to protect biological resources ~~like these~~ from harm, degradation, or other diminishment. Moreover, the ~~Build Alternative~~ action alternatives and other transportation projects in the area are planned in areas that are largely previously developed - existing roadways and railroads. Land development projects are generally concentrated within urbanized areas, away from both biological and agricultural resources. The aforementioned federal, state, and local regulations would act together to avoid or minimize ~~such effects~~ cumulative impacts to biological resources including wetlands.

Wildlife movement in the vicinity of the ~~Build Alternative~~ action alternatives occurs within and along the major waterways, including the Salinas River and tributaries. The ~~Build Alternative~~ action alternatives in combination with future transportation ~~improvements~~ projects would primarily affect existing linear facilities and would not create new barriers to wildlife movement. Land development projects that are concentrated in urban areas would have the least potential to interfere with wildlife movement; however, certain types of projects outside urban areas (solar farms, oil and gas fields, and other large-scale projects) could result in new barriers to wildlife movement. A review of projects in planning stages in each county indicates that some ~~such~~ of these facilities are ~~being~~ proposed but at substantial distances (at least 25 miles east) from the railroad ROW.[2] Furthermore, even if these large-scale developments were to result in a significant cumulative impact, the contribution of the ~~Build Alternative~~ action alternatives would not be considerable ~~for the reasons articulated herein,~~ including because of their distance from the railroad ROW.

As elements of the ~~Build Alternative~~ action alternatives move forward for further design and construction, they would be subject to the recommended mitigation and avoidance strategies outlined in **Section 3.13, Biological Resources and Wetlands,** of this Program EIS/EIR in the form of project-specific mitigation measures. Similarly, the construction and operation of anticipated transportation and land development projects would be required to abide by similar environmental review processes ~~as the Build Alternative~~ and would be expected to incorporate similar mitigation measures. Therefore, there would be no cumulatively significant impact to biological resources and wetlands.

3.15.2.14 Growth Inducement

Area of Cumulative Analysis: The area for cumulative analysis of growth inducing impacts includes all three existing stations in the study area (Salinas, Paso Robles, and San Luis Obispo), as well as the two proposed station areas in King City and Soledad. This area is centered around existing and proposed stations insofar as stations comprise the main potential for a passenger railroad project to directly or indirectly affect population, employment, or economic growth.

Summary of ~~Build Alternative~~ Action Alternative Impacts: The ~~Build Alternative~~ action alternatives would have the potential to result in minor but beneficial growth~~-related~~ effects in and around the existing and proposed station areas. The proposed new stations would be located in communities that have endorsed the stations as components of larger downtown revitalization and growth plans (including Soledad's Downtown Specific Plan and the City of King's Downtown Addition Specific Plan, First Street Corridor Master Plan, and West Broadway Master Plan). Given the nature of existing and proposed passenger rail service, such growth is more likely to be within the realm of visitor-serving and tourism ~~related~~ uses. Existing and proposed passenger rail service would not have schedules suited to

[2] In Monterey County, the proposed California Flats Solar project would create a 280 megawatt solar energy facility on 1,900 acres in the southeastern corner of Monterey County. This project area is about 25 miles northeast of Paso Robles. Additionally, a 550 megawatt solar power plant is proposed and a 250 megawatt solar power plant has been approved in the Carrizo Plain area of San Luis Obispo County. The Carrizo Plain area is separate from the Coast Corridor rail alignment by more than 50 miles and rugged mountain terrain.

commuting; therefore, there would be relatively little potential for substantial transit-oriented development associated with access to major employment centers. However, increased rail activity as a result of the reintroduction of Coast Daylight service would also bring about locally-desired, visitor-serving activity and growth potential in the existing Salinas, Paso Robles, and San Luis Obispo station areas.

Present and Future Projects: A project would be considered growth inducing to the extent it facilitated new population or employment growth beyond itself. For example, a single residential development would result in a larger population within a community but would be considered growth-inducing only if it included elements that had the potential to further increase population or employment growth, such as extended transportation or service infrastructure.

Potential for Cumulative Effects: The proposed transportation improvements are expected to improve operations on US 101 and existing/adjacent roadways without any substantial physical expansion. Other minor roadway improvements would be similarly focused on operational enhancements. However, it is envisioned that commuter rail service (Capitol Corridor) will eventually be extended to Salinas. The advent of commuter service would have the potential to increase the attractiveness of the Salinas area to workers in the Silicon Valley area attracted to the generally lower housing prices in the Salinas valley relative to those in greater San José. The environmental review for the commuter rail extension noted that the potential growth~~-related~~ effects would be beneficial insofar as growth would likely be concentrated in and around the proposed station area and the commuter rail service would help reduce area transportation ~~related~~ effects. Additionally, the Downtown Addition Specific Plan within the City of King projects future development near the station area to include an additional 650 housing units and over 190,000 square feet of retail. As discussed in **Section 3.14, Growth Inducement**, none of the project components would have a substantial direct impact to growth; therefore, no growth inducement would occur under the action alternatives. New passenger stations and the Coast Daylight service throughout the corridor would attract additional passengers and potentially attract development in and around all station areas leading to a possible indirect effect on growth. However, such growth is planned for in city documents as cities have made the proposed stations the centerpieces of adopted downtown revitalization strategies.

Taking all of the above into account, there would be no significant and adverse cumulative impact ~~related to~~ of growth inducement.

3.16 NEXT STEPS IN PROJECT DEVELOPMENT

NEPA

~~This program-level EIS/EIR assesses environmental impacts that could potentially result from implementation of improvements to the Coast Corridor. As outlined in **Chapter 2.0, Alternatives,** the Build Alternative proposes improvements to the existing railway and contemplates expanded passenger service (i.e., Coast Daylight between Salinas and San Luis Obispo. Of these improvements, some, all, or none may eventually be constructed. As such, future project-level environmental analysis would be required for any selected improvement prior to permitting, construction, and operation.~~ This combined Record of Decision (ROD) and Final Program EIS/EIR serves two major purposes. The Final Program EIS/EIR includes a complete program level assessment of environmental impacts that could potentially result from implementation of any of the alternatives and identifies appropriate mitigation strategies that will be refined in project-level environmental analysis. The ROD selects the Preferred Alternative. ~~Consequently, once approved by the state and federal lead agencies, this program-level EIS/EIR would serve as an important source of corridor-wide information, particularly with regard to the potential for various components of the Build Alternative to result in substantial costs associated with the avoidance, minimization, or mitigation of environmental effects.~~ Together, the ROD and Final Program EIS/EIR complete the programmatic NEPA review for the Coast Corridor Improvements project.

~~Lead Agency Roles~~

~~SLOCOG and FRA have mutually commenced this program-level EIS/EIR to comply with NEPA and CEQA. FRA is the NEPA lead agency; SLOCOG is the CEQA lead agency.~~

~~Any future decisions related to advancing and ultimately constructing the proposed rail improvements may constitute a federal action if federal funding or other federal permits are required and may thus require additional project-level environmental review under NEPA. Other federal agencies in addition to FRA may also rely on these project-level environmental reviews to support future decision making. In preparing this environmental document, FRA has coordinated with the US EPA, USAC), the US Army, and the USFWS, among others.~~

~~The preparation, circulation, and review of a draft Program EIS/EIR provides for the evaluation of the No Build Alternative and Build Alternative; the assessment of all~~

~~significant/adverse environmental impacts; and the opportunity for public and agency input and comments to help inform the decision-making process.~~

CEQA

~~After the final Program EIS/EIR is complete, according to CEQA Guidelines § 15090, SLOCOG, as the lead CEQA agency, shall certify that:~~ <u>Regarding programmatic CEQA review, as CEQA lead agency, SLOCOG is anticipated to certify the following:</u>

- The Final Program EIS/EIR was completed in compliance with CEQA;
- The Final Program EIS/EIR was presented to the decision-making body of the lead agency, and that the decision-making body reviewed and considered the information contained in the final EIR prior to approving the project; and
- The Final Program EIS/EIR reflects the lead agency's independent judgment and analysis.

~~Similarly to the CEQA process, the NEPA lead agency, FRA, shall comply with FRA's Procedures for Considering Environmental Impacts (64 FR § 28545) and may issue a Record of Decision (ROD). The ROD is the final step in the NEPA process.~~

<u>If SLOCOG makes the above certifications and approves the Preferred Alternative as the project, SLOCOG will issue a Notice of Determination (NOD). Issuance of the NOD would complete the programmatic CEQA process.</u>

<u>Of the components that comprise the Preferred Alternative, some, all, or none may eventually be constructed. The partner agencies will continue to coordinate with the owner of railroad to determine the extent of components needed to allow for expanded passenger rail service. The decision to advance specific components will be prioritized by funding availability, the efficacy of the given component, and timeframe.</u>

~~Future Implementation~~

<u>Any required project-level environmental analysis under NEPA and/or CEQA will precede the permitting, construction, and operation of any individual Preferred Alternative component</u>. ~~Future implementation of Build Alternative improvements would require further design and potentially site-specific environmental review. At such a time, this Program EIS/EIR would support future approvals and potential financing decisions necessary to implement the proposed improvements by identifying environmental constraints that influence development techniques, construction recommendations, and mitigation strategies.~~

~~Future projects would potentially include one or more of the Build Alternative components noted in this Program EIS/EIR. As indicated in the Service Development Plan, decisions to move specific components forward would be prioritized by funding availability, the efficacy of the given improvement, and timeframe. One or more improvements could constitute a project-level proposed action under NEPA if a federal action was involved and a project under CEQA. Any proposed project would require a detailed project description, construction plans, staging areas, and potential property acquisitions in advance.~~

Once a project component begins ~~is formalized and begins~~ the project-level environmental review process, local agencies, resource planners, and permitting authorities ~~would need to be~~ will be involved to ensure that the project's ~~footprint~~ impacts are adequately assessed. The ~~applicant~~ project proponent would also need to provide appropriate public outreach ~~programs to provide~~ and opportunities for input on issues, concerns, potential design refinements, and environmental impacts ~~processes~~.

As determined by site-specific circumstances, future project-level analysis could require consultation and involvement of USFWS, CDFW, EPA, USACE, RWQCB, the California Department of Parks and Recreation, SHPO, NAHC, and others as appropriate.

According to CEQA Guidelines § 15168(e), when a law other than CEQA requires public notice when the agency later proposes to carry out or approve an activity within the program and to rely on the Program EIR for CEQA compliance, the notice for the activity shall include a statement that:

- The activity is within the scope of the program approved earlier, and
- The Program EIR adequately describes the activity for the purposes of CEQA.

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3.17 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS/CEQA CONCLUSIONS

This Final Program EIS/EIR represents the first ~~conceptual planning~~ stage of a tiered environmental evaluation that analyzes a broad range of potential ~~railway~~ physical components ~~improvements~~ and expanded passenger service. Implementation of ~~improvements~~ project components would require further site-specific environmental analysis. ~~once detailed project descriptions and work plans are composed. At the conclusion of the environmental review process~~ Following this Program EIS/EIR, SLOCOG, FRA, TAMC, and the railroad owner, ~~Union Pacific Railroad~~ UPRR, are expected to continue discussions and negotiations towards an agreement regarding what, if any, physical components ~~improvements~~ are necessary to allow for the proposed expansion of passenger rail service.

Each ~~technical chapter~~ resource in this document identifies potential environmental impacts that could occur should one or more ~~elements~~ components of the ~~Build Alternative~~ action alternatives be constructed. ~~The **Summary** describes these general findings.~~

The ~~Build~~ Preferred Alternative ~~looks at the entire~~ comprises a program of physical and rail service components ~~improvements~~. In many cases, one or more individual ~~improvements~~ components ~~are the 'trigger'~~ result in potential environmental impacts, with other ~~improvements~~ components having lesser capacity for potentially adverse/significant effects. Careful design of physical components ~~improvements~~ can potentially avoid/minimize the vast majority of the effects discussed in this document. Many potentially adverse/significant impacts described in this document can be avoided or minimized by selecting ~~an alignment option~~ a component that avoids or minimizes impacts on environmental resources through refinement to the design or specific location ~~of various track improvements or station areas or~~ through incorporation of mitigation measures.

Overall, expanded passenger rail service may decrease regional emissions of air pollutants and GHGs ~~greenhouse gases~~, while decreasing transportation~~-related~~ energy use. However, construction of proposed physical components ~~improvements~~ would result in temporary, localized emissions and one-time energy consumption.

New passenger service stations in King City and Soledad may affect circulation on local roadways, which may increase congestion, as further discussed below. Additionally, much of the Monterey County within the study area is ~~Prime and~~ protected farmland, as designated by the state. Other land uses include habitat for special-status species, protected forest, or wetlands. ~~New alignment options~~ Certain physical improvements may traverse land use types and alter the designated use. ~~Lastly, several of the alignment options and proposed improvements may potentially displace residences or businesses.~~

Whether any of these potential effects will occur depends on the type, number, and timing of proposed physical or service components ~~improvements~~. As these components ~~improvements~~ move forward for further design or other refinements, the extent to which any of them could result in substantial and/or adverse environmental effects will be analyzed through pertinent requirements of CEQA and/or NEPA. In essence, all significant effects can potentially be avoided, minimized, or mitigated depending on final design plans.

CEQA and NEPA Significance

Use of the term "significant" differs between NEPA and CEQA. According to CEQ, the NEPA determination of significance is based on context and intensity. The magnitude of the impact is evaluated and described in the environmental document. The Program EIS reports all impacts and discusses feasible mitigation. Under CEQA, identification on each significant effect on the environment is required, according to the CEQA Guidelines § 15126.2. The discussion should include relevant specifics of the affected area, resources involved, physical changes, significant environmental effects the project might bring, and feasible mitigation.

According to CEQ, the manner in which the differences between the two processes are addressed must take into account that NEPA does not compel mandatory findings of significance, and that some impacts determined to be significant under CEQA may not be necessarily be determined significant under NEPA. As such, mitigation strategies outlined in this program-level EIS/EIR may be appropriate under NEPA, but the potential impacts they address may not be considered under CEQA.

3.17.1 UNAVOIDABLE POTENTIALLY SIGNIFICANT IMPACTS

Traffic and Travel

The ~~Build~~ Preferred Alternative contemplates two new passenger stations in King City and Soledad. As noted here and in environmental documents adopted/certified by these cities, buildout of the station areas (which includes the opening of the stations themselves, increased passenger rail activity, and buildout of surrounding planned land uses) would result in increased traffic on local streets.

Land Use and Planning, Communities and Neighborhoods, Property and Environmental Justice

Curve realignments and siding extensions that require substantial land conversion/acquisition outside of the railroad ROW ~~associated with the Preferred Alternative~~ would commit the land uses and natural resources for an expanded and realigned railway in some areas. Future implementation of components ~~improvements~~ outside the existing ROW and in populated areas would have the largest effect on existing land uses and communities. Some of the ~~proposed~~ physical components ~~improvements~~ would ~~involve displacement of existing residents and businesses, many within an environmental justice community, or would convert land uses~~ convert land uses to be incompatible with the general plan. The proposed design and engineering aspects of each ~~improvement~~ component are conceptual at this time and if carried forward in the future, could be refined to avoid some or all potential impacts on existing land uses and communities.

Agricultural and Forest Resources

~~Improvements~~ Components requiring land outside of the existing railroad ROW, such as curve realignments, new sidings, and siding extensions associated with the ~~Build~~ Preferred Alternative would convert Prime Farmland and other protected types of farmland to nonagricultural uses. Prime Farmlands are protected by the state due to the soil quality and irrigation status of the land. In CEQA, the conversion of Prime Farmland to a non-agricultural use cannot be mitigated below a level of significance. Thus, any conversion of Prime Farmland to a non-agricultural use would be considered an unavoidable impact.

If the proposed second mainline is carried forward for construction and additional ROW is needed, some or all of the additional ROW (up to 12 acres in all) could include forest land within the Los Padres National Forest .

Biological and Wetland Resources

As further described in **Section 3.13, Biological Resources and Wetlands**, certain proposed curve realignments, new sidings, and siding extensions have the potential to entail the use of lands outside the existing railroad ROW that are critical habitat areas for several protected species (including California red-legged frog and vernal pool fairy shrimp), habitat of special-status species, sensitive vegetation communities, and wetlands. The evaluation in this document is based on a review of highly conceptual plans for ~~proposed rail improvements~~ the project components. Design refinements may be able to avoid some or all of the aforementioned potential effects.

Hydrology and Water Quality

As further described in **Section 3.12**, **Hydrology and Water Resources**, certain proposed new sidings and siding extensions, curve realignments, and the second mainline have the potential to intersect surface waters, potentially resulting in hydrological and/or water quality effects. Design refinements of the ~~conceptual plans~~ components ~~used in this evaluation~~ could potentially avoid some of all of these hydrology and/or water quality impacts.

Conclusion

Overall, only general statements of potential impacts can be made at this program-level of review, because ~~since~~ there is considerable uncertainty as to which, if any, ~~elements~~ components of the ~~Build~~ Preferred Alternative will ultimately be carried forward for further design, funding, and eventual construction and operation. As noted throughout this document, many of these ~~elements~~ components have only conceptual designs to date. Therefore, the analysis herein is based on a review of potential effects to considerably sized "buffer" areas, in only a small portion of which any actual physical components ~~improvements~~ might be constructed.

3.17.2 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Implementation of ~~proposed rail improvements~~ project components may result in property acquisitions, conversion of Prime Farmland, and potential disruption of biological and wetland resources during construction and operation. Future project-level environmental review would consider these factors in more detail if any specific components ~~improvements~~ are carried forward. While some of the

~~proposed improvements~~ project components may disrupt the existing conditions of the area, short- and long-term benefits would also result and should be considered accordingly.

The Coast Corridor region is faced with transportation challenges associated with anticipated population growth, constrained travel options, aging rail infrastructure, safety issues, and a need for increased travel capacity without impacting air quality and natural resources. These challenges are likely to continue in the future as ~~continued~~ growth in population, employment, and tourism activity is expected to generate increased travel demand.

In the short-term, construction activities would likely increase employment opportunities, as well as locally purchased materials and services. In the long-term, ~~proposed improvements~~ implementation of the project components would likely increase the frequency, speed, and reliability of passenger rail while fostering greater passenger connectivity to the proposed ~~California High-Speed Rail~~ CA HSR System and enhancing safety with minimal or no disruption to existing and proposed freight rail operations. Implementation of the ~~Build~~ Preferred Alternative would help to create an interconnected, multimodal solution allowing for better mobility throughout the Coast Corridor region, providing added capacity in response to increased travel demand between Los Angeles and San Francisco.

3.17.3 SIGNIFICANT UNAVOIDABLE ADVERSE EFFECTS UNDER CEQA

As discussed, this Program ~~level~~ EIS/EIR evaluates the potential for significant effects to occur from any of the ~~proposed~~ ~~Build~~ Preferred Alternative ~~improvements~~ components. Additionally, if any of the ~~proposed improvements~~ components are carried forward, this analysis offers mitigation strategies that could potentially avoid or minimize impacts to resources through project design or other measures. Accordingly, this Program ~~level~~ EIS/EIR only generally identifies potentially significant unavoidable impacts ~~as such consideration~~ because detailed consideration would take place during project-level review.

Table S-1, in the **Summary** of this document, describes the environmental resources and potential impacts as a result of the proposed Coast Corridor improvements. Depending on which, if any, physical ~~proposed~~ components ~~improvements~~ are carried forward, potentially significant and unavoidable impacts may occur at various locations within the corridor. Portions of land immediately adjacent to the Coast Corridor are habitat for several protected species; therefore, some of the ~~proposed improvements~~ components could potentially encroach into ~~such land~~ this habitat. Additionally, ~~proposed project improvements~~ project components may require property acquisition and conversion of Prime Farmland. ~~Such occurrences~~ This could result in future conclusions of significant and unavoidable impacts under CEQA.

The No Build Alternative represents the continuation of existing rail operations and physical components, and assumes the perpetuation of existing freight and passenger service between Salinas and San Luis Obispo. The only physical component ~~improvement~~ expected under the No Build Alternative would be the installation of PTC along the Corridor, which would provide increased safety for freight and passenger trains. No specific plans have been identified, but anticipated PTC ~~related~~ improvements outside train-based equipment would most likely take the form of communications apparatus (e.g., antennas, signal upgrades). Such improvements are anticipated to be placed within the existing railroad ROW and would be assumed to have minimal or no effect upon adjacent areas to the railroad ROW. As a result, significant and unavoidable impacts would not likely occur under the No Build Alternative.

3.17.4 CEQA ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines §15126.6(e)(2) requires the selection of an environmentally superior alternative. Based on the analysis presented in the Program EIS/EIR (described in **Table S-1** in the **Summary**), the No Build Alternative would be the environmentally superior alternative because it would have no potential to result in any substantial construction period ~~related~~ effects, or acquisition/incorporation of any agricultural or biologically valuable land into the railroad corridor. However, ~~as further described below~~, the No Build Alternative does not offer the same potential air quality and transportation benefits as the action alternatives.

CEQA Guidelines §15126.6(e)(2) states that where the No Build Alternative is considered the environmentally superior alternative, the EIR shall identify another environmentally superior alternative. Accordingly, this Program EIS/EIR also considered the Build and Preferred Alternatives. The Build and Preferred Alternatives offer similar rail operation components that would result in similar levels of reduced regional VMT and reduced emissions of air pollutants. Both would also collectively enhance rail safety and improve overall rail service reliability through a program of corridor-wide track and signal improvements. Both would foster connectivity with the CA HSR system. ~~While the Build Alternative would potentially entail the incorporation of agricultural and/or biologically valuable land~~

~~into the railroad corridor, various components of the Build Alternative would (individually and collectively) enhance safety and enable greater reliability for both passenger and freight rail traffic.~~

~~Additionally, the Build Alternative would provide increased capacity to assist in meeting mobility challenges and travel demand between San Francisco and Los Angeles. Under the No Build Alternative, current and projected future system congestion would continue to result in reduced reliability, slower travel speeds, increased travel times, and deteriorated air quality. The Build Alternative would assist in fostering improved rail connectivity to the proposed California High-Speed Rail system and would augment the highway system, creating an interconnected, multimodal solution, allowing for enhanced mobility throughout the corridor. As demonstrated in this document, the Build Alternative would offer modest but measurable improvements in regional air quality insofar as increased rail ridership would lead to fewer automotive vehicle miles traveled (VMT) in the corridor. Therefore, the Build Alternative has been identified as the environmentally superior alternative.~~

The main difference between the Build and Preferred Alternatives is that the Preferred Alternative excludes four curve realignment areas in San Luis Obispo County. These curve realignments were not found to offer speed or travel time improvements, but the curve realignments had the potential to result in several unique and substantial physical environmental effects. Removal of these curve realignments reduces substantially the overall potential of the Preferred Alternative to result in significant environmental impacts. Therefore, the Preferred Alternative is the environmentally superior alternative.

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