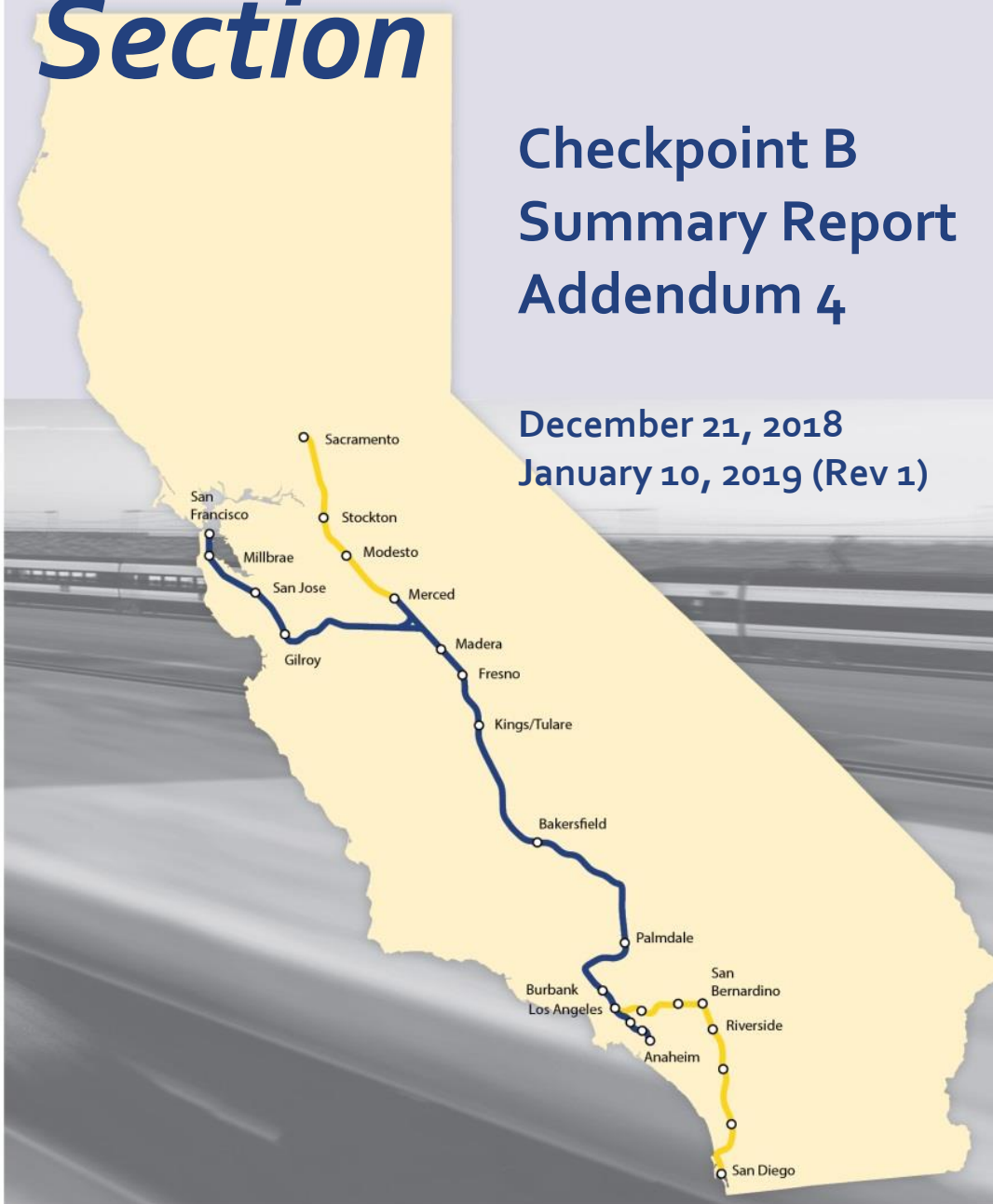


California High-Speed Rail Authority

# *San Jose to Merced Project Section*

## Checkpoint B Summary Report Addendum 4

December 21, 2018  
January 10, 2019 (Rev 1)





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## ACRONYMS AND ABBREVIATIONS

2013 Checkpoint B Summary Report	<i>Checkpoint B Summary Report in Support of the San Jose to Merced Section Section 404(b) (1) Analysis and Draft Environmental Impact Report/Environmental Impact Statement</i>
2017 Checkpoint B Addendum 3	<i>San Jose to Merced Project Section: Draft Checkpoint B Summary Report Addendum 3</i>
2018 Business Plan	<i>California High-Speed Rail Authority 2018 Business Plan</i>
ATC	Automatic train control
Authority	California High-Speed Rail Authority
FEMA	Federal Emergency Management Agency
FHZ	Flood Hazard Zones
FRA	Federal Railroad Administration
HSR	high-speed rail
I-	Interstate
LAFCO	Local Agency Formation Commission
MOIS	maintenance of infrastructure siding
MOWF	maintenance of way facility
MT	Mainline Track
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PAA	Preliminary Alternatives Analysis
PG&E	Pacific Gas and Electric Company
SHPO	State Historic Preservation Officer
SR	State Route
TPSS	traction power substation
UPRR	Union Pacific Railroad
US	U.S. Highway
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

## 1 INTRODUCTION

The primary purpose of Checkpoint B is to identify the range of high-speed rail (HSR) alternatives for environmental review under the California Environmental Quality Act and the National Environmental Policy Act. This addendum proposes the addition of a fourth alternative (Alternative 4) to the San Jose to Central Valley Wye project extent of the San Jose to Merced High-Speed Rail Project Section, augmenting the three alternatives that were defined in the *San Jose to Merced Project Section: Draft Checkpoint B Summary Report Addendum 3 (2017 Checkpoint B Addendum 3)*. Alternative 4 would implement blended electrified passenger rail infrastructure and operations between San Jose and Gilroy. *Blended service* means service that combines HSR operations with electrified Caltrain operations. Blended service is currently proposed for the San Francisco to San Jose Project Section. Under Alternative 4, blended infrastructure and service would extend past the current endpoint for blended operations at San Jose Diridon Station to Gilroy Station. This service would occur largely at grade and within the existing Caltrain and Union Pacific Railroad (UPRR) rights-of-way, as described in the *California High-Speed Rail Authority 2018 Business Plan (2018 Business Plan)* (Authority 2018a).

The concept of extending blended electrified passenger rail infrastructure and operations from San Jose to Gilroy is currently under discussion between the California State Transportation Agency, the California High-Speed Rail Authority (Authority), and UPRR. The parties have advanced the concept sufficiently that the Authority has determined that this alternative merits study as at least potentially feasible at this time and would it reduce certain impacts relative to the other alternatives previously advanced for study.

### 1.1 Previous Development of Alternatives

In 2013, the Authority and the Federal Railroad Administration (FRA) developed the *Checkpoint B Summary Report in Support of the San Jose to Merced Section 404(b)(1) Analysis and Draft Environmental Impact Report/Environmental Impact Statement (2013 Checkpoint B Summary Report)*, largely drawn from the work completed for the Preliminary Alternatives Analysis (PAA) and Supplemental Alternatives Analysis prepared between June 2010 and July 2011. The 2013 Checkpoint B Summary Report was submitted for review by the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA). The USACE and USEPA concurred with the range of alternatives identified in the 2013 Checkpoint B Summary Report (Authority and FRA 2013) in August and September 2014, respectively.

In late 2015 the Authority split development of alternatives for the San Jose to Merced Project Section from the alternatives connecting San Jose to the Central Valley Wye. The Central Valley Wye consists of the alignments that connect north-south traffic between Merced and Fresno to east-west traffic between San Jose and Merced. The alternatives between San Jose and the Central Valley Wye are called the *San Jose to Central Valley Wye Project Extent*. This report describes the proposed addition of a new alternative to the San Jose to Merced Project Extent. The relationship of this project extent to the end-to-end project section (i.e., the project section from San Jose to Merced in its entirety) is further described in Section 2.1, Description of Proposed Project and Alternatives.

In 2017 the Authority and FRA developed the 2017 Checkpoint B Addendum 3 to narrow the range of alternatives to three end-to-end alternatives for the project extent (Figure 1-1). The USACE and USEPA concurred with the range of alternatives in the 2017 Checkpoint B Addendum 3 (Authority and FRA 2017) on October 20, 2017.

Subsequent to the agency concurrence in 2017, the Authority continued to evaluate those three end-to-end alternatives and has since developed a fourth alternative, Alternative 4, as described above. The project extent contains five subsections: San Jose Diridon Station Approach, Monterey Corridor, Morgan Hill and Gilroy, Pacheco Pass, and San Joaquin Valley. All four alternatives are identical in the Pacheco Pass and San Joaquin Valley Subsections. In the other three subsections, each of the alternatives is characterized by a particular set of features (i.e., profiles and alignments) generally referred to as *design options*. This report describes the relative

impacts on environmental and other key resources for each alternative in the three subsections where the alternatives vary.

## 1.2 Benefits of Alternative 4

Alternative 4 would minimize resource and property displacements, and noise impacts on existing local communities, and it would benefit rail operations. In addition, because the alternative would be built at grade and would occupy an existing railroad right-of-way, it would avoid the visual and spatial disruption associated with constructing a dedicated guideway on embankment or viaduct. Tall embankments and viaducts have significantly greater visual impacts compared to tracks located at grade.

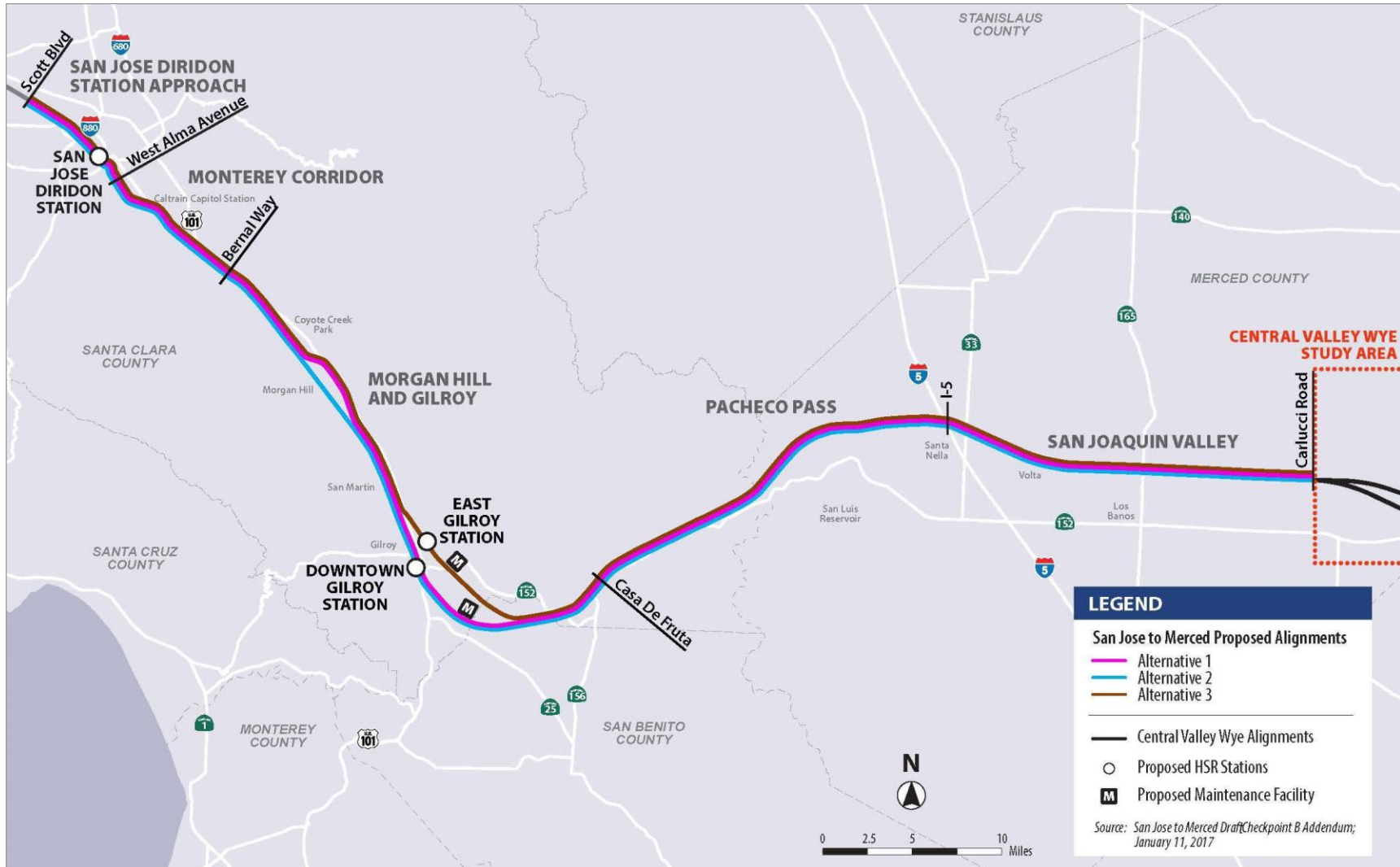
The blended, at-grade infrastructure between Santa Clara and Gilroy would allow operational speeds up to 110 miles per hour. For comparison, the dedicated HSR infrastructure of Alternatives 1, 2, and 3 would allow speeds greater than 125 miles per hour. Trains moving at the lower maximum speed of Alternative 4 would generate substantially lower sound levels than the other alternatives, which would to operate at higher speeds on dedicated infrastructure.

Local jurisdictions have indicated that Alternative 4 is responsive to community preferences for placement of HSR within the existing railroad corridor. The Cities of Morgan Hill and Gilroy support the alternative, as does Santa Clara County and the Santa Clara Valley Water District, because the blended, at-grade alternative would require less acquisition of right-of-way outside the railroad corridor than would the other three alternatives, thus displacing fewer existing or planned land uses and infrastructure. Alternative 4 would also include continuous access-restriction fencing along the blended rail right-of-way and four-quadrant gates with lane channels for all at-grade roadway crossings. These features would substantially improve the safety of the existing railroad corridor for vehicular, bicycle, and pedestrian travelers, in keeping with local community preferences.

Extending blended, electrified rail infrastructure from San Jose to Gilroy, beyond that contemplated by the Caltrain Peninsula Corridor Electrification Project, would increase capacity of the corridor for passenger train operations. The 2018 Business Plan anticipates up to eight HSR trains per hour per direction between San Jose and Gilroy. Infrastructure improvements proposed under Alternative 4 would allow for up to 12 trains per hour per direction. The additional track capacity would also accommodate the extension of Caltrain electrified operations to Gilroy. Moreover, the blended electrified rail infrastructure would enable Caltrain to eliminate emissions associated with diesel-electric traction power and encourage a travel mode shift from passenger vehicles in the increasingly congested South County transportation corridor. These changes are consistent with the Authority's 2018 Business Plan goals, which include expansion of electrical train service from the peninsula to Gilroy with the potential for express service to enhance transit options in the region (Authority 2018a).

Blended, at-grade infrastructure would also avoid the aesthetic and visual impacts of viaducts and high embankments. Under Alternatives 1, 2, and 3, the embankments would be up to 40 feet above grade in some places, while viaducts would be up to about 100 feet above grade. These profile types would introduce a new and visually intrusive feature into landscapes that include urban, suburban, and rural settings.





Source: Authority and FRA 2017

DRAFT: November 2018

Figure 1-1 Three End-to-End Alternatives with Agency Concurrence

## 2 PROJECT DESCRIPTION

### 2.1 Description of Proposed Project and Alternatives

The San Jose to Merced Project Section would provide HSR service between Diridon Station in downtown San Jose and the city of Merced. The project section includes a station in Gilroy, either in downtown Gilroy or east of Gilroy, and a station in downtown Merced. The project section consists of three project extents:

- From Scott Boulevard in Santa Clara to Carlucci Road in Merced County, at the western terminus of the Central Valley Wye
- The Central Valley Wye, which connects the east-west portion of HSR from the Bay Area to the Central Valley with the north-south portion from Merced to Fresno
- The northernmost portion of the Merced to Fresno Project Section, from the northern limit of the Central Valley Wye (Ranch Road) to the Merced Station

The project would connect San Jose to the Central Valley portion of the HSR system at the Central Valley Wye in Merced County, which in turn connects to the portion of the system running north to Merced and south to Fresno and Southern California. Because the portion of the project section between Carlucci Road and Merced has been analyzed in the *Merced to Fresno Section Final Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)* (Authority and FRA 2012) and the *Merced to Fresno Section: Central Valley Wye Supplemental EIR/EIS* (in development), this document and the EIR/EIS that is forthcoming focus on the project extent from San Jose to Carlucci Road.

The area between Scott Boulevard and Carlucci Road constitutes approximately 90 miles of the approximately 145-mile-long project section, which includes station locations at San Jose Diridon and Gilroy; a maintenance of way facility (MOWF) in the Gilroy area; and an additional maintenance of infrastructure siding between Turner Springs Road and Carlucci Road in the Central Valley. HSR stations at San Jose Diridon and Gilroy would support transit-oriented development, provide an interface with regional and local mass transit services, and provide connectivity to the South Bay<sup>1</sup> and Central Valley highway network.

The project contains the following five subsections:

- **San Jose Diridon Station Approach**—Extends approximately 6 miles from north of San Jose Diridon Station at Scott Boulevard in Santa Clara to West Alma Avenue in San Jose. This subsection includes Diridon Station and overlaps the southern portion of the San Francisco to San Jose Project Section.
- **Monterey Corridor**—Extends approximately 9 miles from West Alma Avenue to Bernal Way in the community of South San Jose. This subsection is entirely within the city of San Jose.
- **Morgan Hill and Gilroy**—Extends approximately 30 miles from Bernal Way in the community of South San Jose to Casa de Fruta Parkway/State Route (SR) 152 in the community of Casa de Fruta in Santa Clara County.
- **Pacheco Pass**—Extends approximately 25 miles from Casa de Fruta Parkway/SR 152 to east of Interstate (I-) 5 in unincorporated Merced County.
- **San Joaquin Valley**—Extends approximately 20 miles from I-5 to Carlucci Road in unincorporated Merced County.

### 2.2 Description of Alternative 4

Alternative 4 consists of a blended system from north of the San Jose Diridon Station to downtown Gilroy. The alignment transitions into a fully dedicated system south of the Gilroy

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<sup>1</sup> *South Bay* refers to Santa Clara County.

MOWF, then proceeds east through the Pacheco Pass to Carlucci Road, the western boundary of the Central Valley Wye (Figure 2-1). This section describes in detail the design options that characterize Alternative 4 by subsection. These design options pertain only to the San Jose Diridon Station Approach, Monterey Corridor, and Morgan Hill and Gilroy Subsections. All four project alternatives are identical through the Pacheco Pass and San Joaquin Valley Subsections.

## **2.2.1 San Jose Diridon Station Approach**

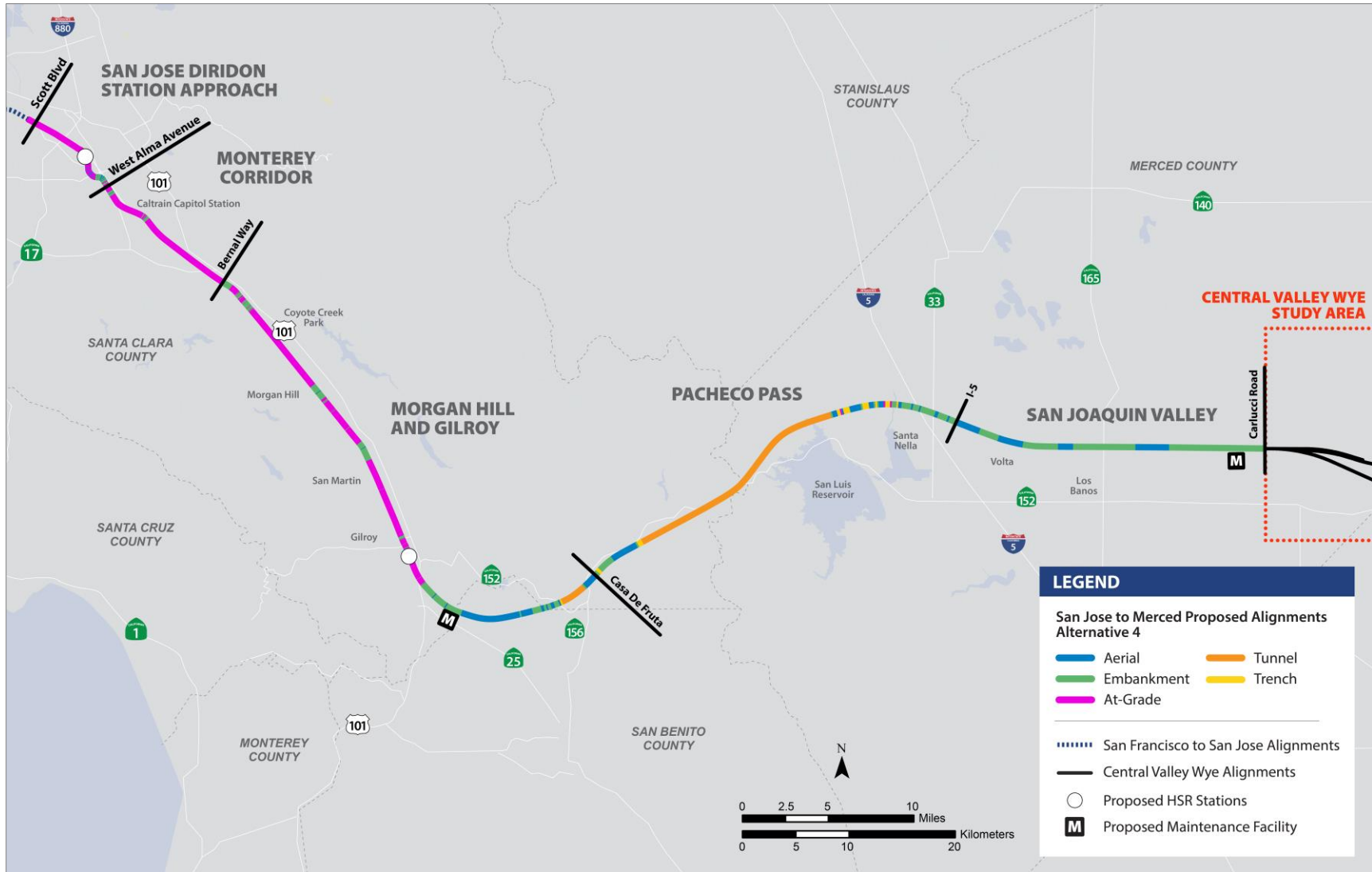
The San Jose Diridon Station Approach Subsection extends approximately 6 miles from Scott Boulevard in Santa Clara to West Alma Avenue in San Jose through the cities of Santa Clara and San Jose. The existing Caltrain track in this subsection consists of predominantly two-track and three-track at-grade alignment. South of De La Cruz Boulevard, UPRR tracks from the east converge with the Caltrain corridor and continue south adjacent to the east side of the corridor. Caltrain's Centralized Equipment Maintenance and Operations Facility, north of the San Jose Diridon Station, comprises three mainline tracks, a maintenance building, and nine yard tracks.

### **2.2.1.1 Blended, At-Grade Option**

This design option for Alternative 4 would begin at Scott Boulevard in blended service with Caltrain on an at-grade profile following Caltrain Mainline Track (MT) 2 and MT3 south along the east side of the existing Caltrain corridor. The existing Lafayette Street pedestrian overpass would remain in place, as would the De La Cruz Boulevard and Hedding Street roadway overpasses. Beginning at Control Point Coast, a new track would be built for the UPRR. A new College Park Caltrain Station would be constructed just north of Emory Street on the west side of the Caltrain Corridor. Both legs of the UPRR Warm Springs Subdivision Lenzen Wye would undergo minor track adjustments, and a new bridge would be built over Taylor Street for UPRR to tie into the Lenzen Wye.

The blended at-grade alignment would continue along MT2 and MT3 to enter new dedicated HSR platforms at grade at the center of San Jose Diridon Station. The existing Santa Clara Street underpass would remain, but the track in the throat and yard would require modification. There would be no need for modifications to the (Santa Clara) Valley Transportation Authority light rail.

Continuing south on an at-grade profile, the blended at-grade alignment would remain in the Caltrain right-of-way while crossing beneath the existing underpass at Park Avenue and the existing overpass at San Carlos Street. The alignment would continue across Los Gatos Creek on the existing Caltrain bridge and would cross Auzerais Avenue at grade within new four-quadrant gates (with lane channels). The alignment would cross over I-280 on the existing Caltrain bridge and a new single-track bridge. The alignment would traverse the Gardner neighborhood within the Caltrain right-of-way. Four quadrant gates with channelization would be built at West Virginia Street. The existing underpasses at Bird Avenue and Delmas Avenue would be reconstructed. New standalone bridges over Prevost Street, SR 87, the Guadalupe River, and Willow Street would be built for MT3. MT1 and MT2 would remain on the existing structures.



Source: Authority 2018b

DRAFT OCTOBER 2018

Figure 2-1 Alternative 4

### **2.2.1.2 Traction Power Sites and Power Connections**

One new traction power substation (TPSS) would be built on the east side of the Caltrain corridor at one of two alternate sites located just south of I-880 in San Jose (just southeast of the I-880 overcrossing or at Lenzen Avenue). This facility would encompass approximately 42,000 square feet (210 by 200 feet) to accommodate three high-voltage power transformers and an approximately 450-square-foot control room. The TPSS site would have a 20-foot-wide access road (or easement) from the street access point to the protective fence perimeter.

Power would be supplied by Pacific Gas and Electric Company (PG&E) transmission lines. PG&E has indicated that existing lines may need to be reducted to serve the project. Under Alternative 4, HSR would use the automatic train control (ATC) sites included as part of Caltrain's Peninsula Corridor Electrification Project. One standalone communications radio site would be constructed at one of two alternative locations, both south of Scott Boulevard along the east side of the Caltrain corridor.

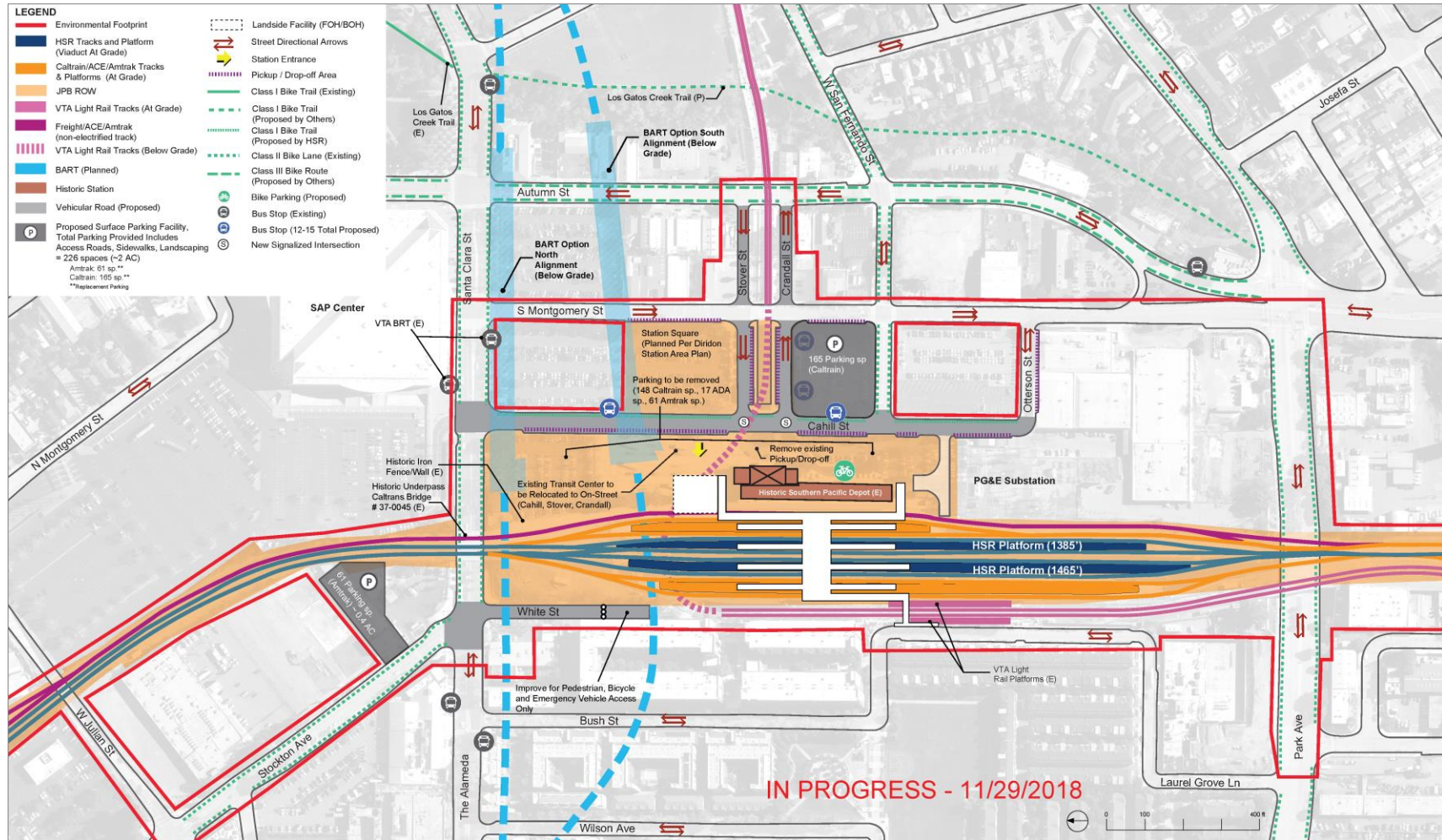
### **2.2.1.3 San Jose Diridon Station**

The station would entail a four-track at-grade alignment through the center of the existing Diridon station, with 1,385- and 1,465-foot platforms centered between Santa Clara Street and Park Avenue (Figure 2-2). The existing historic train station would remain in place. A pedestrian concourse would be built above the yard to provide access to the platforms below. The concourse would consist of a pedestrian walkway above the existing Caltrain tracks and below the HSR platforms, with two entrances on the east side and one on the west.

Existing parking spaces (226) at Cahill Street would be displaced and replaced 1:1 with a new parking structure between Cahill and Crandall Streets and new parking areas at Stockton and Alameda Streets. The existing on-site/off-street bus transit center would be relocated to an on-street facility on Cahill, Stover, and Crandall Streets. Street improvements would include reconfiguring and extending Cahill Street from Santa Clara Street to Otterson Street, and converting Cahill, Stover, and Crandall Streets to a transit street with 12 to 15 bus stops. New two-way cycle tracks would be installed on the east side of Cahill Street. New signals and pedestrian crossings would be developed at Cahill, Otterson, Montgomery, Stover, and Crandall Streets.

### **2.2.1.4 Maintenance Facility**

No maintenance facilities are proposed for this subsection.



Source: Authority 2018b

DRAFT OCTOBER 2018

Figure 2-2 Diridon Station Site Plan

## 2.2.2 Monterey Corridor

The Monterey Corridor Subsection is approximately 8 miles long and is located entirely within San Jose city limits. From the San Jose Diridon Station Approach Subsection at West Alma Avenue just south of the Caltrain Tamien Station, the Monterey Corridor Subsection continues primarily southeast to Bernal Way.

### 2.2.2.1 *Blended, At-Grade Design Option*

Alternative 4 would be in blended service with Caltrain on an at-grade profile within the Peninsula Corridor Joint Powers Board and UPRR right-of-way. HSR and Caltrain would operate on the electrified MT2 and MT3 tracks, while UPRR would operate on MT1. New standalone bridges over West Alma Avenue and Almaden Road would be constructed for MT3, while MT1 and MT2 would remain on the existing structures. The existing pedestrian overpass at Communications Hill and the existing Capitol Expressway overpass would remain in place. Four-quadrant gates with channelization would be built at Skyway Drive, Brannan Lane, and Chynoweth Avenue. The existing Blossom Hill Road overpass and adjacent pedestrian overpass would remain in place. South of the Blossom Hill Caltrain Station, Great Oaks Parkway would be realigned for approximately 1,350 feet. SR 85 and Bernal Road overpasses would remain in place.

### 2.2.2.2 *Traction Power Facilities*

One traction power paralleling station would be constructed in the subsection on the west side of the Caltrain Corridor north of the Blossom Hill Caltrain Station. Five ATC sites would be constructed in the subsection.

### 2.2.2.3 *Stations*

No new HSR stations are proposed for this subsection. The existing Tamien Caltrain Station would remain in place, but track modifications would be required for Michael Yard.

Capitol Caltrain Station would be reconstructed with a new center platform between MT2 and MT3. The platform would be reached by a new pedestrian overpass built on the north end of the platform.

The Blossom Hill Caltrain Station would be reconstructed; the existing pedestrian overpass and platform would be removed and a new center platform constructed between MT2 and MT3. The platform would be reached by a new pedestrian overpass built on the south end of the platform.

### 2.2.2.4 *Maintenance Facility*

No maintenance facilities are proposed for this subsection.

## 2.2.3 Morgan Hill and Gilroy

The Morgan Hill and Gilroy Subsection is south of the Monterey Corridor Subsection. From Bernal Way in South San Jose, the Morgan Hill and Gilroy Subsection would include the Downtown Gilroy Station. South of the station site, the subsection would curve generally east across the Pajaro River floodplain and through a portion of northern San Benito County before entering a tunnel (Tunnel 1) at the base of the Diablo Range. It would exit the tunnel at Casa de Fruta Parkway/SR 152 in unincorporated eastern Santa Clara County, where it would transition to the Pacheco Pass Subsection.

### 2.2.3.1 *Blended, At-Grade to Downtown Gilroy Design Option*

Beginning at the southern limit of the Monterey Corridor Subsection, the alignment would continue in blended service with Caltrain on an at-grade profile predominantly within the UPRR right-of-way and parallel to Monterey Road. HSR and Caltrain would operate on the electrified MT2 and MT3 tracks, while UPRR would operate on MT1. A new triple box culvert would be installed between Tulare Hill and the riparian corridor of Coyote Creek to facilitate wildlife crossing. The culverts on Fisher Creek at Tulare Hill would be reconstructed. The existing Bailey Avenue overpass would remain in place. Another culvert on Fisher Creek in Morgan Hill and the

Monterey Road underpass would be reconstructed. The Morgan Hill Caltrain Station would be reconstructed where two new side platforms would be built on the outside of MT2 and MT3. The platforms would be reached by a new pedestrian overpass constructed at the north end of the platform. The existing Butterfield Boulevard overpass would remain. Upper Llagas Creek bridge would be reconstructed. The existing bridge at Miller Slough would be replaced with a triple-cell box. The blended at-grade alignment would continue along MT2 and MT3 to enter new HSR platforms at grade in downtown Gilroy. From east to west, the tracks are assigned as follows:

- UPRR siding
- MT1 for UPRR and nonelectrified passenger rail
- Northbound station track
- MT2 and MT3 for blended through service
- Southbound station track.

Blended service would end just south of Gilroy Station, where Caltrain would have access to turn-back and stabling tracks. HSR would continue east over an extended culvert for Prince Valley Channel and then under the U.S. Highway (US) 101 overpass, which would remain in place. Past the Industry spur, HSR would ascend onto embankment before bridging over the UPRR. Two bridges would be built: one for MT2 and MT3 and one for the MOWF lead track. HSR MT2 and MT3 would descend from the embankment before crossing over Bloomfield Road on a new structure. Four-quadrant gates would be installed at Bloomfield Road for the MOWF lead track and UPRR service track. UPRR Hollister subdivision would be realigned to provide access to the MOWF. HSR would continue east over Llagas Creek on a new structure. At 1922+90, Alternative 4 would match up with Alternative 2 as previously described in the 2017 Checkpoint B Addendum 3.

Four-quadrant gates with channelization would be built at all at-grade crossings. To minimize impacts on wildlife movement, new wildlife crossings would be constructed underneath the blended at-grade right-of-way south of Metcalf Avenue, south of Fisher Road, at Richmond Avenue, at Fox Lane, near Paquita Espana Court, north of Kalana Avenue, and south of Live Oak Avenue. Additionally, wildlife intrusion deterrents and wildlife exit features would be constructed at at-grade crossings. Wildlife intrusion deterrents would be constructed at each at-grade crossing at Blanchard Road, Palm Avenue, Live Oak Avenue, and Bloomfield Road to minimize the potential for animals to enter the railway. Wildlife exit features would be placed near the at-grade crossings to provide opportunities for wildlife to escape the railway in the event wildlife find entry into the fenced rail corridor.

### **2.2.3.2 Traction Power Facilities**

One new TPSS, Site 4—Gilroy, would be constructed at one of two alternate locations on the east side of the alignment: south of Buena Vista Avenue or north of Cohansey Avenue. At this site, one new utility switching station could be co-located with the TPSS. Communication facilities would also be required to support the electrical interconnections connecting the TPSS to a new utility switching station or to existing PG&E facilities, typically within tie-line/utility corridors.<sup>2</sup>

A traction power switching station would be constructed west of the HSR alignment at Richmond Avenue. Three traction power paralleling stations would be constructed adjacent to the guideway.

PG&E would reinforce the electric power distribution network to meet HSR traction and distribution power requirements by replacing (i.e., reconductoring) approximately 11.1 miles of existing power line associated with the Spring to Llagas and Green Valley to Llagas 115-kilovolt power lines. The existing power lines to be reconducted (reusing the poles and towers) begin at the Morgan Hill Substation on West Main Avenue in Morgan Hill, then cross the east side of Peak

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<sup>2</sup> These communications facilities would be redundant—they would entail either two underground fiber optic cables or one underground and one installed overhead on existing power poles.



Avenue and Dewitt Avenue, spanning West Dunne Avenue, Chargin Drive, Spring Avenue, and several residences. The alignment would continue south across an open space area, then follow Sunnyside Avenue for approximately 0.5 mile. The alignment would continue south for approximately 4 miles, spanning additional open-space areas of wineries and the Corde Valley Golf Course. The alignment would then turn east along the north side of Day Road before heading south for approximately 2.5 miles and terminating at the Llagas Substation in Gilroy.

A permanent overhead distribution electrical power line from TPSS Site 4—Gilroy to the Tunnel 1 portal location would provide power to the tunnel boring machine during construction and the tunnel fire-life-safety system during operations.

Twenty ATC sites and five standalone communications radio sites would be constructed.

### **2.2.3.3 Stations**

The station approach would be at grade with dedicated HSR tracks to the west of UPRR between Old Gilroy Street/7th Street, which would be closed, and 9th Street. A new HSR station with 800-foot platforms would be constructed south of the existing Caltrain station. A pedestrian concourse would be built above the UPRR and Caltrain tracks to provide access to the platforms below.

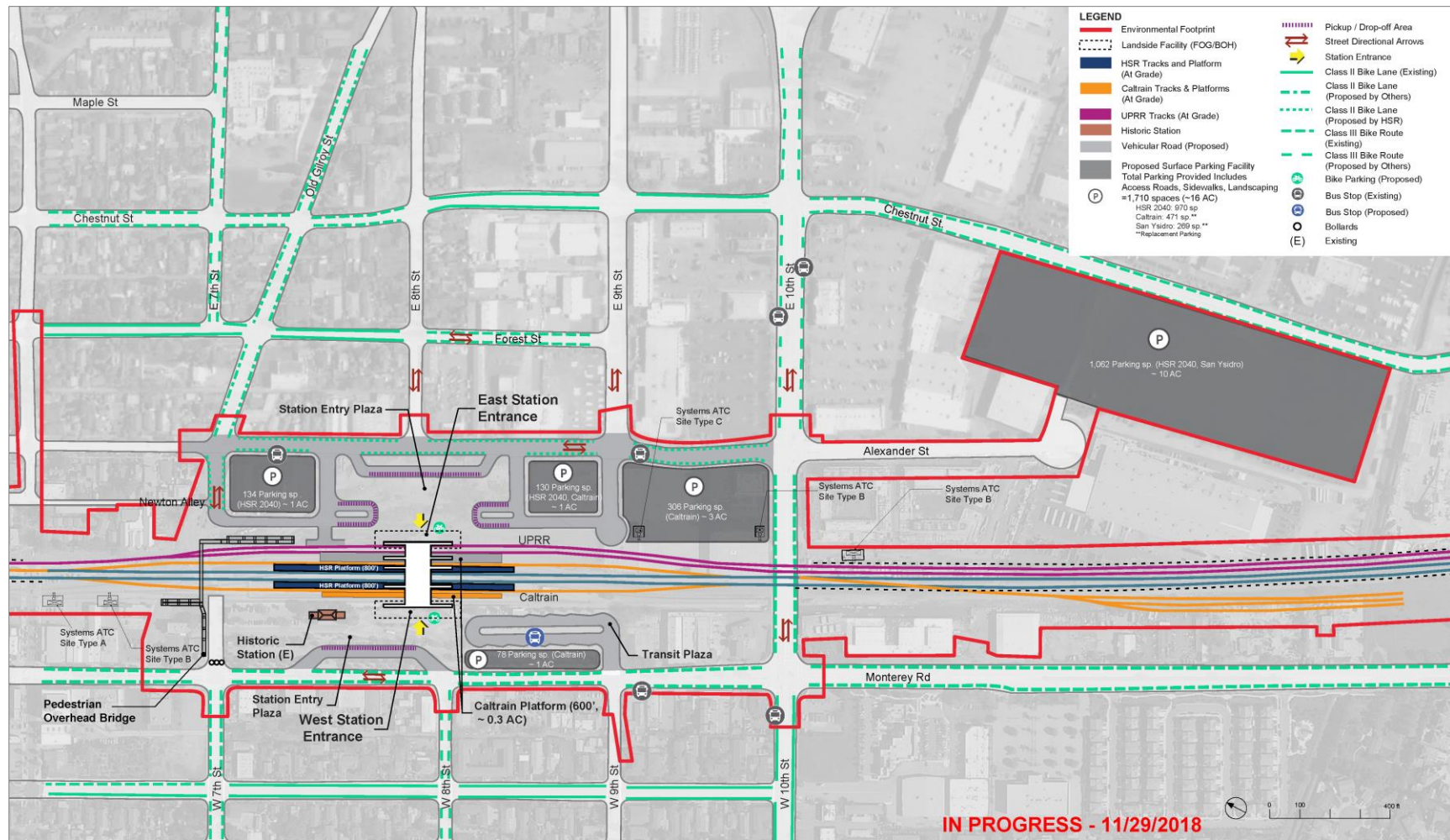
The existing 489 Caltrain parking spaces on the west side of the station would be replaced 1:1 in parking lots on the east and west sides of the alignment. The existing 269 San Ysidro housing development parking spaces would be replaced 1:1 with new surface parking at the south end of Alexander Street. HSR parking demand would be 970 spaces in 2040, for a total of 1,728 aggregated parking spaces in 2040. The station site plan provides 970 new parking spaces in five areas. One site would be located west of the station along Monterey Road at 9th Street. The other four would be on the east side of the station along Alexander Avenue at 7th Street, 9th Street, 10th Street, and Banes Lane. A multimodal access plan would be developed prior to design and construction of the station. The plan would be developed in coordination with local agencies and would include a parking strategy that would confirm the location, amount, and phasing of parking.

A total of eight bus bays would be provided, adding one bay to the existing seven. East 7th Street would be closed and East 10th Street would be modified with quadrant gates and channelization. A pedestrian overcrossing would be installed to provide access between East and West 7th Street. A 4,000-square-foot bicycle facility would be constructed. Class II bike lanes would be provided on 7th Street and Alexander Avenue. Figure 2-3 illustrates the conceptual at-grade Downtown Gilroy Station.

The San Martin Caltrain Station would be reconstructed where the existing platform would be removed and a new center platform would be constructed between MT2 and MT3. The platform would be reached by a new pedestrian overpass constructed at the south end of the platform.

### **2.2.3.4 Maintenance Facilities**

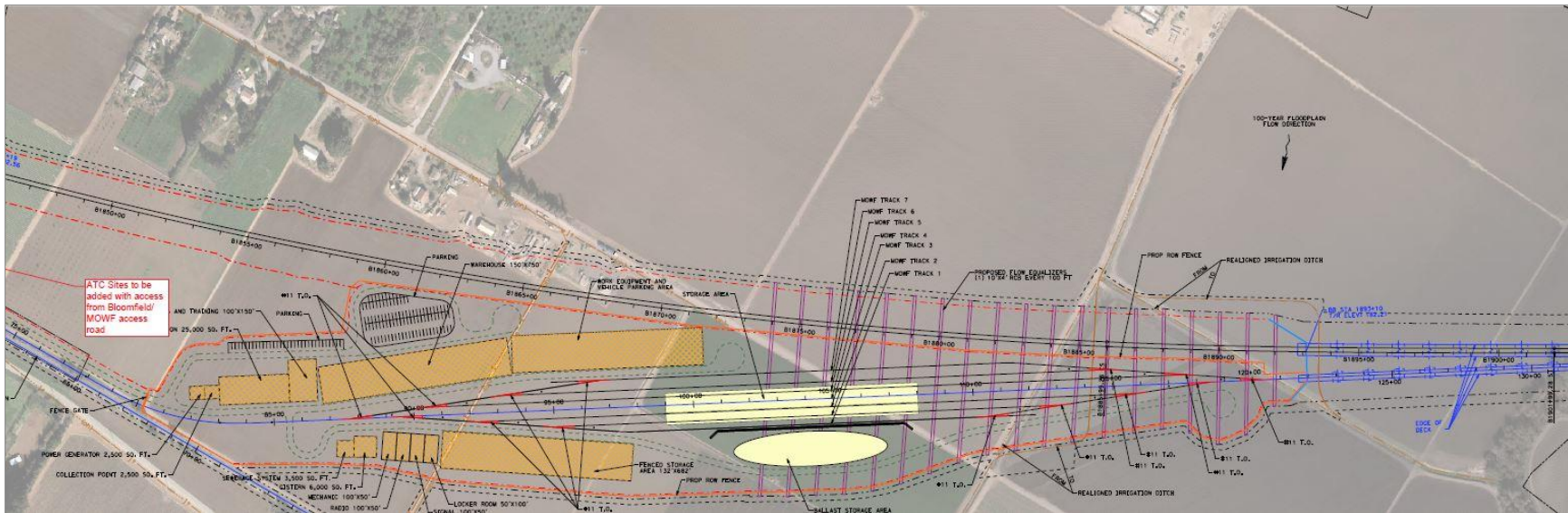
An MOWF is where HSR passenger trains are stored and have light maintenance performed, and where the vehicles (both rail vehicles and trucks) are based for maintenance of the HSR tracks and right-of-way. The MOWF under consideration for Alternative 4—Maintenance Facility South of Gilroy D—would be located near Bloomfield Road and would extend south to just west of the Pajaro River on the west side of the HSR alignment, as illustrated on Figure 2-4. The facility would encompass approximately 100 acres along the HSR mainline, with a maximum width of 700–1,100 feet. Most of the area would be for storage of rail vehicles on tracks parallel to the HSR mainline.



Source: Authority 2018b

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Figure 2-3 Downtown Gilroy Station Site Plan—Blended, At-Grade Option



Source: Authority 2018b

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Figure 2-4 Maintenance of Way Facility South of Gilroy

### **2.2.4 Pacheco Pass**

The single design option in this subsection is the same under all four alternatives. The Pacheco Pass Subsection extends approximately 25 miles from Casa de Fruta Parkway/SR 152 at the west end of the Pacheco Creek Valley to I-5 at Santa Nella Village in Merced County. The alignment generally follows the existing SR 152 corridor for approximately 17 miles, where it diverges around the northern edge of the San Luis Reservoir before terminating at I-5. Because there are no changes to the design option in this subsection, this document does not discuss it any further.

### **2.2.5 San Joaquin Valley**

The single design option in this subsection—Henry Miller Road—is the same under all four alternatives. The San Joaquin Valley Subsection extends 18 miles from I-5 just north of Santa Nella Village to Carlucci Road in Merced County, where it follows the south side of Henry Miller Road and connects with the Central Valley Wye. Refer to the 2017 Checkpoint B Addendum 3 (Authority and FRA 2017) for more information on this subsection. Because there are no changes to the design option in this subsection, this document does not discuss it any further.

### 3 AQUATIC RESOURCES

Aquatic resources in the study area were identified based on 2016 National Wetlands Inventory data and are categorized as freshwater emergent wetlands, freshwater forested/shrub wetlands, riverine/channels, freshwater ponds, and lakes/reservoirs. For the purposes of this analysis, freshwater emergent wetlands and forested/shrub wetlands are considered wetlands, and riverine/channels, freshwater ponds, and lakes/reservoirs are considered nonwetland waters. The aquatic resources identified may be subject to regulation under federal and/or state law. This chapter defines the study area as it relates to aquatic resources, briefly describes the existing conditions, details the methods and data sources used in the analysis, and compares impacts on aquatic resources across alternative by subsection.

#### 3.1 Scope of Analysis

For the purposes of this analysis, the study area for aquatic resources is the combined project footprint of the alternatives in the San Jose Diridon Station Approach, Monterey Corridor, and Morgan Hill and Gilroy Subsections. Because there are no differences among alternatives in the Pacheco Pass and San Joaquin Valley Subsections, this document does not address them for comparative analysis. The analysis reflects the maximum area of direct disturbance for each alternative.

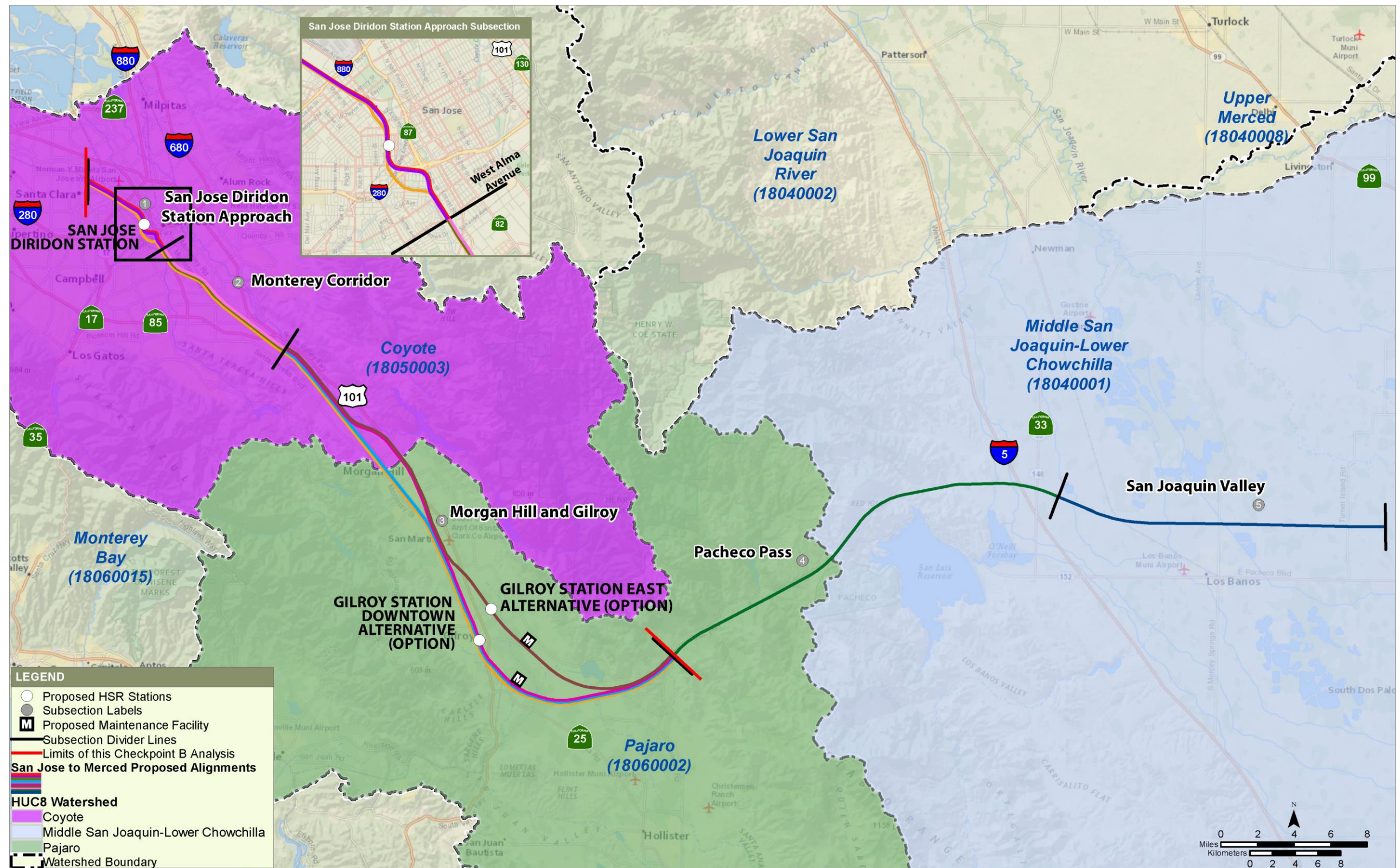
For the purposes of this analysis, impacts on aquatic resources within the footprint of each design option associated with an end-to-end alternative were evaluated. The footprint encompasses the maximum area of direct effect for each alternative. These impacts were assumed to be direct and permanent because the proportion of the impacts that would be temporary is not currently known. Consequently, the actual impacts on aquatic resources would likely decrease from those identified in this report as project design advances. Although the methods used in this document likely overestimate impacts, they provide a means of comparing the relative effects of the various design options on aquatic resources. The USACE has not verified aquatic resources in the study area. For more information on study area and methods, refer to the 2017 Checkpoint B Addendum 3.

Aquatic resource impacts associated with each alternative are expressed quantitatively (i.e., total area), because detailed aquatic resource delineations and California Rapid Assessment Method data describing the relative quality, functions, and services of aquatic resources are not currently available.

##### 3.1.1 Existing Conditions

There is some variation in the relative quantity and characteristics of aquatic resources across the three subsections. For more information on the existing conditions of aquatic resources in the study area, refer to the 2017 Checkpoint B Addendum. Watersheds overlapping with all subsections are illustrated on Figure 3-1. All subsections are illustrated on Figure 3-2; however, the focus of this addendum is on the San Jose Diridon Station Approach, Monterey Corridor, and Morgan Hill and Gilroy Subsections.



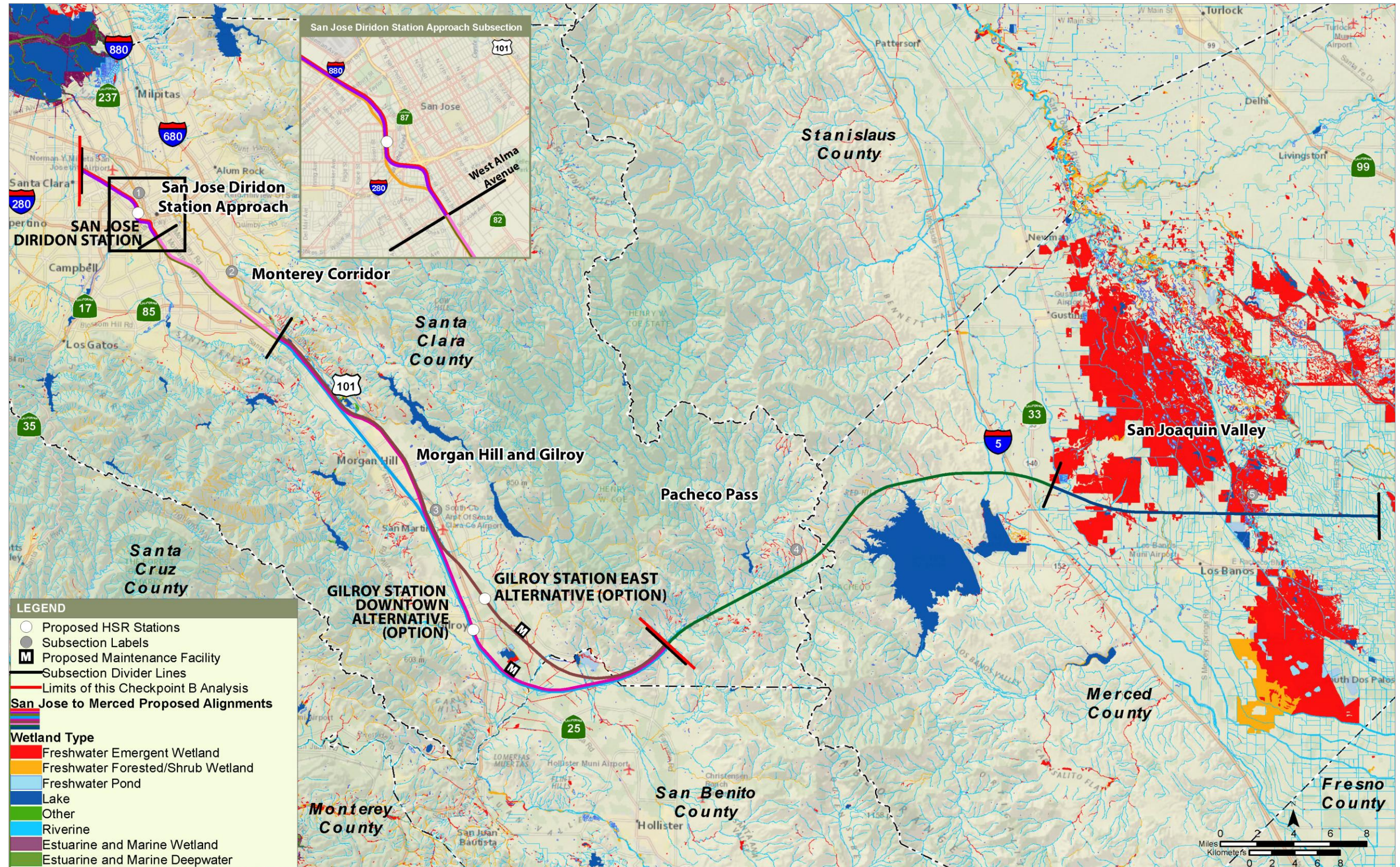


Source: HNTB 2018; ESRI/National Geographic 2016; USGS 2016

Note: Watersheds relative to the project are discussed in Section 3.8, Hydrology and Water Resources, of the San Jose to Merced Draft EIR/EIS.

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Figure 3-1 Watersheds in the Study Area



Source: HNTB 2018; ESRI/National Geographic 2016; USFWS 2016a  
 Note: Aquatic resources are discussed in Section 3.7, Biological and Aquatic Resources, of the San Jose to Merced Draft EIR/EIS.

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Figure 3-2 Aquatic Resources in the Study Area



### 3.2 Impacts of Alternatives on Aquatic Resources

Direct impacts on aquatic resources resulting from construction of the design options for each alternative in the three subsections are shown by subsection in Table 3-1 and Table 3-2.

#### 3.2.1 San Jose Diridon Station Approach

In the San Jose Diridon Station Approach Subsection, the two design options associated with Alternatives 1, 2, and 3 would each result in approximately 0.3 acre of impact on freshwater forested/shrub wetland, while the blended option associated with Alternative 4 would result in approximately 0.5 acre of impacts on freshwater forested/shrub wetland. Table 3-1 shows the impacts on aquatic resources from each design option in the San Jose Diridon Station Approach Subsection.

**Table 3-1 Impacts on Aquatic Resources in the San Jose Diridon Station Approach Subsection (acres)<sup>1</sup>**

Aquatic Resource	Aerial to Scott Blvd. (Alts. 2, 3)	Aerial to I-880 (Alt. 1)	Blended, At-Grade (Alt. 4)
<b>Wetlands</b>			
Freshwater emergent wetland	–	–	–
Freshwater forested/shrub wetland	0.3	0.3	0.5
<b>Nonwetland Waters</b>			
Riverine/channel	–	–	–
Freshwater pond	–	–	–
Lake/reservoir	–	–	–
<b>Total aquatic resource impacts</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>

Source: HNTB 2018; USFWS 2016a

<sup>1</sup> Note that all resource impacts are presented for the purposes of providing a high-level *estimate* of the impacts of each alternative. These estimates are based on a preliminary level of design; a more refined level of design will be used in Checkpoint C and the EIR/EIS.

#### 3.2.2 Monterey Corridor

The Monterey Corridor Subsection design options associated with all four alternatives would not result in impacts on aquatic resources because their footprints do not intersect any aquatic features.

#### 3.2.3 Morgan Hill and Gilroy

The design options for all four alternatives in the Morgan Hill and Gilroy Subsection would result in impacts on aquatic resources, ranging from 12.9 to 17.0 acres. Alternative 4 would result in greater total impacts on aquatic resources in the Morgan Hill and Gilroy Subsection than the other three alternatives. The four alternatives are similar in wetland impacts, with minor additional impacts for Alternative 4 associated with numerous culverts at creek crossings and in the Soap Lake region just south of Gilroy where the MOWF would be on the west side of the alignment. Impacts on aquatic resources resulting from each design option in the Morgan Hill and Gilroy Subsection are shown in Table 3-2.

**Table 3-2 Impacts on Aquatic Resources in the Morgan Hill and Gilroy Subsection (acres)**

Aquatic Resource	Embankment to Downtown Gilroy (Alt. 2)	Viaduct to Downtown Gilroy (Alt. 1)	Viaduct to East Gilroy (Alt. 3)	Blended, At-Grade to Downtown Gilroy (Alt. 4)
<b>Wetlands</b>				
Freshwater emergent wetland	1.8	1.6	5.0	2.8
Freshwater forested/shrub wetland	4.4	4.3	2.5	4.0
<b>Nonwetland Waters</b>				
Riverine/channel	8.2	7.2	4.9	8.5
Freshwater pond	1.7	1.6	0.1	1.7
Lake/reservoir	0.1	0.4	0.4	–
<b>Total aquatic resource impacts</b>	<b>16.2</b>	<b>15.1</b>	<b>12.9</b>	<b>17.0</b>

Source: HNTB 2018; USFWS 2016a

## 4 BIOLOGICAL RESOURCES

This section defines the study area as it relates to biological resources, details the methods and data sources used in the analysis, briefly describes the existing conditions, and compares impacts on biological resources across the alternatives by applicable subsection. Biological resources are assessed in the study area on the basis of listed species habitat.

### 4.1 Scope of Analysis

For the purposes of this analysis, the study area for biological resources is the combined project footprint of all design options in each subsection associated with each of the alternatives, thereby reflecting the maximum area of direct disturbance for each alternative. This report relies on the total acreage within each footprint as a measure of the relative effect on biological resources. This method likely overestimates the extent to which the project may affect biological resources, because some impacts would be permanent and some would be temporary. For more information on study area and methods, refer to the 2017 Checkpoint B Addendum 3.

#### 4.1.1 Existing Conditions

There is variation in the relative quantity and characteristics of biological resources across the subsections. For more information on the existing conditions of biological resources in the study area, refer to the 2017 Checkpoint B Addendum 3.

### 4.2 Impacts of Alternatives on Biological Resources

In general, impacts on biological resources are most extensive in the Morgan Hill and Gilroy Subsection, while the San Jose Diridon Station Approach and Monterey Corridor Subsections would result in minimal impacts on biological resources.

#### 4.2.1 San Jose Diridon Station Approach

Alternative 4 would have fewer impacts on most potentially occurring species in this subsection. Impacts on steelhead would be slightly greater under Alternative 4 than under Alternatives 1, 2, and 3. Impacts on biological resources associated with each design option are shown in Table 4-1.

**Table 4-1 Impacts on Biological Resources in the San Jose Diridon Station Approach Subsection (acres)**

Biological Resource	Viaduct to Scott Blvd. (Alts. 2, 3)	Viaduct to I-880 (Alt. 1)	Blended, At-Grade (Alt. 4)
<b>Listed Wildlife Species<sup>1</sup></b>			
California red-legged frog (FT)	0.6	0.6	–
California tiger salamander (FT)	–	–	–
Least Bell’s vireo (FE, SE)	4.2	4.2	1.0
Swainson’s hawk (ST)	–	–	–
Tricolored blackbird (CT)	0.4	0.2	–
Steelhead—Central Valley DPS, South-Central California Coast DPS (FT)	1.8	1.8	2.2
Bay checkerspot butterfly (FT)	–	–	–
Vernal pool tadpole shrimp (FE)	–	–	–
San Joaquin kit fox (FE, ST)	–	–	–

Biological Resource	Viaduct to Scott Blvd. (Alts. 2, 3)	Viaduct to I-880 (Alt. 1)	Blended, At-Grade (Alt. 4)
<b>Listed Plant Species<sup>1</sup></b>			
Metcalf Canyon jewelflower (FE)	–	–	–
Santa Clara Valley dudleya (FE)	–	–	–

Source: HNTB 2018; ICF 2016a

DPS = distinct population segment

<sup>1</sup> Status explanations:

FE = listed as endangered under the federal Endangered Species Act (FESA)

FT = listed as threatened under the FESA

CT = candidate for listing as threatened under the FESA

SE = Listed as endangered under the California Endangered Species Act (CESA)

ST = Listed as threatened under the CESA

#### 4.2.2 Monterey Corridor

The impacts associated with the design options in the Monterey Corridor Subsection under Alternative 4 would be less on three of the four wildlife species that could occur than under Alternatives 1, 2, and 3. Alternative 4 would have greater impacts on plant species. Impacts on biological resources associated with each design option in this subsection are shown in Table 4-2.

**Table 4-2 Impacts on Biological Resources in the Monterey Corridor Subsection (acres)**

Biological Resource	At-Grade (Alt. 2)	Viaduct (Alts. 1, 3)	Blended, At-Grade (Alt. 4)
<b>Listed Wildlife Species<sup>1</sup></b>			
California red-legged frog (FT)	82.6	85.1	46.1
California tiger salamander (FT)	-	-	-
Least Bell's vireo (FE, SE)	-	-	-
Swainson's hawk (ST)	28.1	16.4	11.4
Tricolored blackbird (CT)	24.1	12.4	10.8
Steelhead—Central Valley DPS, South-Central California Coast DPS (FT)	-	-	-
Bay checkerspot butterfly (FT)	4.9	4.9	7.9
Vernal pool tadpole shrimp (FE)	-	-	-
San Joaquin kit fox (FE, ST)	-	-	-
<b>Listed Plant Species<sup>1</sup></b>			
Metcalf Canyon jewelflower (FE)	7.1	7.1	8.3
Santa Clara Valley dudleya (FE)	4.9	4.9	7.9

Source: HNTB 2018; ICF 2016a

<sup>1</sup> Status explanations:

DPS = distinct population segment

FE = listed as endangered under the federal Endangered Species Act (FESA)

FT = listed as threatened under the FESA

CT = candidate for listing as threatened under the FESA

SE = Listed as endangered under the California Endangered Species Act (CESA)

ST = Listed as threatened under the CESA

### 4.2.3 Morgan Hill and Gilroy Subsection

The impacts on biological resources associated with the design options in the Morgan Hill and Gilroy Subsection under Alternative 4 would be less for most species than under Alternatives 1, 2, and 3. Impacts on biological resources associated with each design option in the Morgan Hill and Gilroy Subsection are shown in Table 4-3.

**Table 4-3 Impacts on Biological Resources in the Morgan Hill and Gilroy Subsection (acres)**

Biological Resource	Embankment to Downtown Gilroy (Alt. 2)	Viaduct to Downtown Gilroy (Alt. 1)	Viaduct to East Gilroy (Alt. 3)	Blended, At-Grade to Downtown Gilroy (Alt. 4)
<b>Listed Wildlife Species<sup>1</sup></b>				
California red-legged frog (FT)	2,294.1	1,688.1	1,609.7	1,435.2
California tiger salamander (FT)	338.6	299.6	285.7	398.8
Least Bell's vireo (FE, SE)	18.3	17.7	11.3	10.6
Swainson's hawk (ST)	507.5	263.4	263.5	207.1
Tricolored blackbird (CT)	1,184.8	1,184.8	1,295.7	967.4
Steelhead—Central Valley DPS South-Central California Coast DPS (FT)	37.5	34.2	44.2	32.3
Bay checkerspot butterfly (FT)	12.4	4.2	4.2	15.4
Vernal pool tadpole shrimp (FE)	4.5	4.5	7.7	2.7
San Joaquin kit fox (FE, ST)	620.4	620.4	523.1	615.7
<b>Listed Plant Species<sup>1</sup></b>				
Metcalf Canyon jewelflower (FE)	12.4	6.1	6.1	18.4
Santa Clara Valley dudleya (FE)	12.4	6.1	6.1	2.7

Source: HNTB 2018; ICF 2016a

DPS = distinct population segment

<sup>1</sup> Status explanations:

FE = listed as endangered under the federal Endangered Species Act (FESA)

FT = listed as threatened under the FESA

CT = candidate for listing as threatened under the FESA

SE = Listed as endangered under the California Endangered Species Act (CESA)

ST = Listed as threatened under the CESA



## 5 OTHER ENVIRONMENTAL AND COMMUNITY RESOURCES

Each design option’s potential impact on environmental and community resources was evaluated using the Authority’s and FRA’s standard evaluation criteria, consistent with the National Environmental Policy Act /404/408 Integration Process Memorandum of Understanding (FRA et al. 2010). This evaluation included an assessment of the following environmental and community resources:

- Important Farmland
- Cultural resources
- Parks, recreation, and conservation areas (including National Wildlife Refuges and conservation easements)
- Federal Emergency Management Agency (FEMA) 100-year flood hazard zones (FHZ)
- The presence and proximity of low-income and minority populations
- Residential and business displacements

This analysis was based on preliminary information available at this conceptual stage of engineering design.

### 5.1 Other Environmental Resources

#### 5.1.1 Scope of Analysis

Other environmental resources include important farmland; cultural resources; parks, recreation, and conservation areas; and FEMA 100-year flood hazard zones. For the purposes of this analysis, the study area is the combined project footprint of all alternatives in each relevant subsection, reflecting the maximum area of direct disturbance for each alternative. For more information on the study area and methods for each of these topics, refer to the 2017 Checkpoint B Addendum 3 (Authority and FRA 2017).

##### 5.1.1.1 Existing Conditions

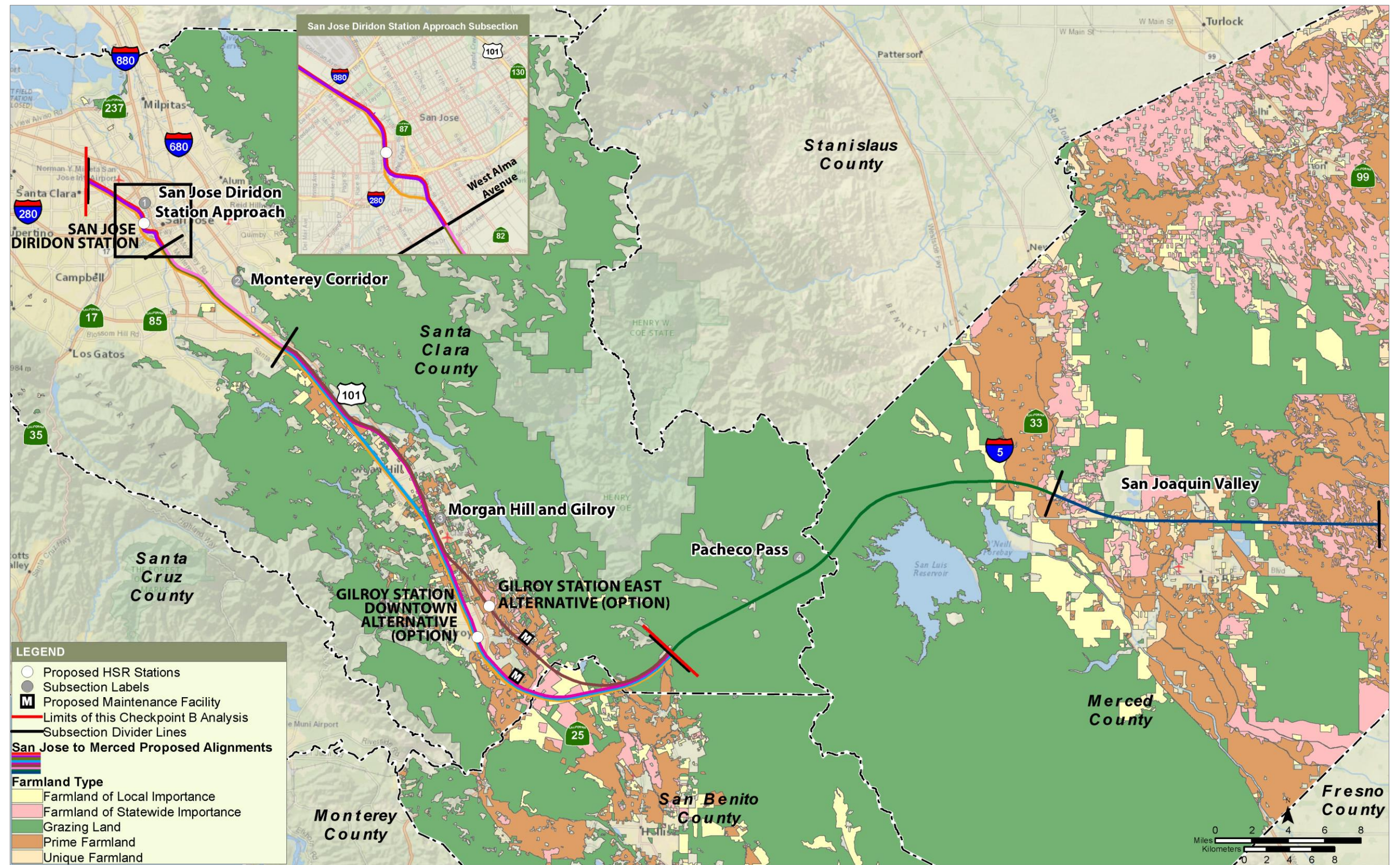
There is substantial variation in the relative quantity and characteristics of other environmental resources across the subsections. For more information on the existing conditions of these resources in the study area, refer to the 2017 Checkpoint B Addendum 3 (Authority and FRA 2017).

#### Important Farmland

Important farmland consists of four categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. Important Farmlands and grazing lands in the region are illustrated on Figure 5-1.







Source: HNTB 2018; ESRI/National Geographic 2016; FMMP 2016.

Note: Important Farmland is discussed in Section 3.14, Agricultural Farmland, of the San Jose to Merced Draft EIR/EIS.

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Figure 5-1 Important Farmland and Grazing Lands



## Cultural Resources

Cultural resource conditions vary along the three subsections considered in this report. Because of the highly developed, urban character of the San Jose Diridon Station Approach and Monterey Corridor Subsections, most historic resources are degraded or have lost their integrity. Based on the results of the records searches, the Morgan Hill and Gilroy Subsection is highly sensitive for archaeological deposits and contains numerous known archaeological sites.

The alternatives are located in areas that contain known archaeological sites and or properties listed or eligible for listing in the National Register of Historic Places (NRHP). A total of 37 archaeological resources, shown in Table 5-1, were identified in the study area. One of these sites is has been recommended for listing in the NRHP, and one has been determined to be eligible for listing. A total of 46 known built historic resources were identified within the study area (Table 5-2). Existing conditions have been included here and updated because Alternative 4 would traverse areas that would not be affected by Alternatives 1, 2, and 3 where it could affect eight archaeological resources and two built resources in the three subsections of concern.

**Table 5-1 Archaeological Resources within the Study Area**

Archaeological Resources - P number or Trinomial	Type/Description	NRHP Eligibility Status
<b>San Jose Diridon Station Approach</b>		
P-43-002234	A historic refuse scatter including glass, ceramic, cut bone, and metal fragments.	Not formally evaluated
CA-SCL-000030	The third location of Mission Santa Clara de Asis, also known as the Murguía Mission	Determined eligible for listing in the NRHP
CA-SCL-00690	Prehistoric cemetery	Not formally evaluated
CA-SCL-00855	A historic refuse scatter including ceramics, tile, metal, glass, and cut bone	Not formally evaluated
<b>Monterey Corridor</b>		
CA-SCL-000191	Lithic concentration	Not formally evaluated
CA-SCL-00448	A surface scatter of oyster, abalone, and one Olivella shell	Not formally evaluated
CA-SCL-000448	A surface scatter of oyster, abalone, and one Olivella shell	Not formally evaluated
<b>Morgan Hill and Gilroy</b>		
CA-SCL-000094	A reported (1973) burial (skeleton and some teeth)	Not formally evaluated
CA-SCL-000161	A single chert flake	Not formally evaluated
CA-SCL-000162	Lithic concentration	Not formally evaluated
CA-SCL-000163	Midden dispersed and piled in mound in a grove of oak trees. Artifacts include lithics and groundstone fragments. The midden deposit measures approximately 20 meters in diameter.	Not formally evaluated
CA-SCL-000167	Lithic concentration	Not formally evaluated
CA-SCL-000168	Lithic concentration	Not formally evaluated
CA-SCL-000169	Lithic concentration	Not formally evaluated

Archaeological Resources - P number or Trinomial	Type/Description	NRHP Eligibility Status
CA-SCL-000170	A single pestle fragment	Not formally evaluated
CA-SCL-000172	Lithic concentration	Not formally evaluated
CA-SCL-000412	A sparse scatter of groundstone	Not formally evaluated
CA-SCL-00571	A light lithic scatter with fire-cracked rock	Not formally evaluated
CA-SCL-00573	A habitation site including a lithic scatter, groundstone, and burial	Not formally evaluated
CA-SCL-00576	Groundstone, lithic concentration, and fire-cracked rock on a small hummock	Not formally evaluated
CA-SCL-00587	A habitation site including lithic scatter, groundstone, fire-cracked rock, shell, and human remains	Not formally evaluated
CA-SCL-00626	Historic structure and trash scatter	Not formally evaluated
CA-SCL-00673	A late 19th century structure and historic artifact scatter	Not formally evaluated
CA-SCL-00838	A prehistoric burial site with artifacts including groundstone and shell	Recommended eligible for the CRHR
<b>Pacheco Pass</b>		
CA-MER-0018	A small, rocky midden deposit, measuring approximately 50 by 40 feet. Artifacts include three silicate flakes, one shell fragment, one possible human bone fragment.	Not formally evaluated
CA-MER-0096	A midden deposit, measuring approximately 100 by 75 feet. Artifacts include chert flakes, one chert core, and one pestle fragment	Not formally evaluated
CA-MER-0130	A midden deposit on a small bench above a creek. The midden measures approximately 100 by 100 feet and include bedrock mortars and cupule petroglyphs.	Not formally evaluated
P-24-000489	Five midden deposits: two major villages and three special-purpose sites	NRHP listed
P-24-001640	One partially sodded-in fire ring and one rectangular stone alignment	Not formally evaluated
CA-SCL-000031	A shallow midden surrounding a rock outcrop with intact mortars. Artifacts include chert flakes and groundstone; a 1989 letter to the NWIC from Caltrans states that a field survey failed to identify any evidence of this site, which was likely destroyed during the construction of SR 152 in the early 1950s.	Not formally evaluated
CA-SCL-000115	A dark ashy midden capping bench overlooking floodplain of Pacheco Creek; no artifacts observed	Not formally evaluated
CA-SCL-000116	A large terrace with variable colored midden; no artifacts observed	Not formally evaluated

Archaeological Resources - P number or Trinomial	Type/Description	NRHP Eligibility Status
CA-SCL-000123	Dark midden on several terraces on both sides of creek with bedrock mortars in rock outcrops. Midden deposit measures approximately 100 by 130 meters.	Not formally evaluated
CA-SCL-000301	One bedrock mortar in flat rock outcrop; one pestle	Not formally evaluated
CA-SCL-000321	A light lithic scatter with fire-cracked rock on the first terrace above creek	Not formally evaluated
CA-SCL-00490	A lithic scatter with fire-cracked rock and groundstone	Not formally evaluated
<b>San Joaquin Valley</b>		
CA-MER-0322	A small village or large campsite with lithics, mortars, and debitage of various materials	Not formally evaluated

Source: ICF 2017

Caltrans = California Department of Transportation

NWIC = Northwest Information Center

NRHP = National Register of Historic Places

SR = State Route

CRHR = California Register of Historic Resources

**Table 5-2 Built Resources within the Study Area**

P Number	Trinomial	Common Name	Historic Name	City	Year Built
<b>San Jose Diridon Station Approach</b>					
P-43-002272	–	Southern Pacific Depot	Diridon Station, Hiram Cahill Depot	San Jose	1935
P-43-001236	–	Walnut Factory Lofts	Walnut Growers Association	Santa Clara	
P-43-002653	–	San Jose Underpass		San Jose	
P-43-002873	–	Santa Clara Depot	Santa Clara Railroad Historic Complex	Santa Clara	1877
P-43-003026	–	Santa Clara Control Tower	–	Santa Clara	1927
<b>Monterey Corridor</b>					
None	–	–	–	–	–
<b>Morgan Hill and Gilroy</b>					
–	–	White/Sturla Ranch	White/Sturla Ranch	Gilroy	c. 1850
–	–	Econo Furniture, Incorporated	–	Gilroy	1920
–	–	13000 Depot Street	San Martin Winery	San Martin	1933
–	–	Live Oak Creamery	Live Oak Creamery	Gilroy	1908
–	–	7341 Alexander Street	Wilson House	Gilroy	1904
–	–	–	Gilroy City Hall	Gilroy	1905

P Number	Trinomial	Common Name	Historic Name	City	Year Built
-	-	St. Stephen's school	St. Stephen's School	Gilroy	1870/ c.1930
-	-	290 IOOF Avenue	IOOF Orphanage Home	Gilroy	1921
-	-	Holsclaw Road	Holsclaw Road	Gilroy	1866
-	-		Miller Slough	Gilroy	1929
-	-	655 Denio Avenue	655 Denio Avenue	Gilroy	1890
-	-	9480 Murray Avenue	Hoenck House	Gilroy	1894
-	-	Horace Willson House	Horace Willson House	Gilroy	1861
-	-	Harrison/ Clifton/ Phegley House	Harrison/Clifton/ Phegley House	Gilroy	1900
P-43-000404	-	Villa Mira Monte	Villa Mira Monte	Morgan Hill	1886
P-43-001217	-	Southern Pacific Train Station	Southern Pacific Train Station	Gilroy	1918
P-43-001739	-	Coyote Depot	Coyote Depot Complex	Coyote	c. 1869/ 1902
P-43-001740	-	Coyote Grange Hall No. 412	Coyote Hall	Coyote	1892
P-43-001747	-	-	Barnhart House	Morgan Hill	1909
P-43-001760	-	-	J. M. Owens House	Coyote	1874
P-43-001739	-	8215 Monterey Road	Coyote Depot Complex	Coyote	1869/1902
P-43-003023	-	-	PG&E Tower/E 6th Street & S Valley Freeway	Gilroy	1975
P-43-003039	-	-	Madrone Underpass	Morgan Hill	1933
P-43-000345	SCL-000338	-	-	Coyote	1900
P-43-000395	SCL-000389	-	-	Gilroy	
P-43-000455	SCL-000454	-	-	Gilroy	1900
P-43-000484	SCL-000483	-	Gilman Bridge	Gilroy	1911 replaced 1987
<b>Pacheco Pass</b>					
-	-	California Aqueduct	California Aqueduct	Volta/Los Banos	1961
P-24-000434	-	-	Outside Canal	Los Banos	1896
P-24-001703	-	-	Delta-Mendota Canal	Los Banos	1942
<b>San Joaquin Valley</b>					

P Number	Trinomial	Common Name	Historic Name	City	Year Built
-	-	-	Negra Ranch	Los Banos	1910
-	-	-	San Luis Canal	Los Banos	1872
-	-	San Luis Drain	San Luis Drain	Los Banos	1968
-	-	23109 Henry Miller Road	Cottani Family Property	Los Banos	1908
-	-	21391 Henry Miller Road	Cozzi Family Property	Los Banos	1906
P-24-000082	-	-	Main Canal	Los Banos	1871
P-24-000083	-	Santa Fe Grade	Santa Fe Grade	Los Banos	1890
P-24-001848	-	San Luis Wasteway	San Luis Wasteway	Los Banos	1947
P-24-001893	-	-	Santa Fe Canal	Los Banos	1890
P-24-001905	-	-	Delta Canal	Los Banos	c. 1916
P-24-002104	-	Los Banos/ Miller&Lux Canal District	-	Los Banos	-

Source: ICF 2017

**Parks, Recreation, and Conservation Areas**

Table 5-3 shows the parks, recreation, and conservation area resources that are publicly accessible, adjacent to any of the design options under consideration, and may be directly affected by project construction or operation. Alternative 4 has the potential to affect resources that would not be affected by the other alternatives. Parks, recreation areas, and conservation areas in the study area are illustrated on Figure 5-2. This analysis does not address private recreation areas, such as hunting clubs. Existing conditions have been included here and updated because Alternative 4 would traverse areas that would not be affected by Alternatives 1, 2, and 3 where it could affect three parks, recreation, and conservation areas in the three subsections of concern.

**Table 5-3 Parks, Recreation Areas, and Conservation Areas in the Study Area**

Parks, Recreation Areas, and Conservation Areas	Description
<b>San Jose Diridon Station Approach Subsection</b>	
Reed Street Dog Park	Location: 888 Reed Street, Santa Clara Size: 1.5 acres Features: Picnic area, barbecues, play area Agency with Jurisdiction: City of Santa Clara Parks and Recreation
Larry J. Marsalli Park	Location: 1425 Lafayette Street, Santa Clara Size: 7 acres Features: Open space, restrooms, lighted softball field, children’s playground Agency with Jurisdiction: City of Santa Clara Parks and Recreation
Guadalupe River Park	Location: 438 Coleman Avenue, San Jose Size: 120 acres Features: Guadalupe Community Garden, Columbus Park, Taylor Street Rock Garden, Heritage Rose Garden, Guadalupe gardens, Arena Green East visitor’s center, playground,

Parks, Recreation Areas, and Conservation Areas	Description
	community garden Agency with Jurisdiction: Guadalupe River Park Conservancy/City of San Jose Department of Parks, Recreation and Neighborhood Services
Fuller Park	Location: 575 Fuller Avenue, San Jose Size: 1.2 acres Features: Two game tables, bocce ball court, horseshoe pit Agency with Jurisdiction: City of San Jose
<b>Monterey Corridor Subsection</b>	
None	None
<b>Morgan Hill and Gilroy Subsection</b>	
Coyote Creek Parkway	Location: Coyote Ranch Road, San Jose Size: 15 miles Features: Biking, equestrian, hiking, fishing, historic site, picnic areas, trails Agency with Jurisdiction: Santa Clara County Department of Parks and Recreation
Tulare Hill	Location: Santa Clara County Size: 155 acres Features: Property planned for future park use Agency with Jurisdiction: Santa Clara County Department of Parks and Recreation
Silveira Property	Location: Atherton Way, Morgan Hill Size: 53.4 acres Features: Open space area with fishing pond Agency with Jurisdiction: Santa Clara County Department of Parks and Recreation
Pajaro River Mitigation Bank	Location: Lake Road, Gilroy Size: 301.9 acres Features: Wetland mitigation bank, protected land Agency with Jurisdiction: Wildlands Inc. (nongovernmental easement holder) and USACE
Field Sports Park	Location: 9580 Malech Road San Jose Size: 102.2 acres Features: Santa Clara County's only publicly owned firing range, providing opportunities for rifle and pistol, as well as trap and skeet shooting. Agency with Jurisdiction: Santa Clara County Department of Parks and Recreation
Morgan Hill Holding 1	Location: Approximately 0.3 mile west of Morgan Hill Dog Park, Morgan Hill Size: 35.5 acres Features: Empty field Agency with Jurisdiction: City of Morgan Hill
<b>Pacheco Pass Subsection</b>	
San Luis Reservoir State Recreation Area	Location: Approximately 13 miles west of Los Banos, south side of SR 152, Merced County Size: 12,700 acres Features: State park encompassing San Luis Reservoir, O'Neill Forebay, and Los Baños Creek Reservoir. Fishing; boating; swimming; four campgrounds; recreational bicycle, hiking, and motorcycle trails Agency with Jurisdiction: California Department of Parks and Recreation
Romero Ranch Conservation Easement	Location: Approximately 22 miles east of Gilroy, north side of SR 152, Merced and Santa Clara Counties Size: 28,043 acres Features: Conservation easement covering steep hillsides along Pacheco Pass and Romero



Parks, Recreation Areas, and Conservation Areas	Description
	Creek; private access only Agency with Jurisdiction: The Nature Conservancy (nongovernmental)
Cottonwood Creek Wildlife Area	Location: Approximately 19 miles east of Gilroy, northwest of SR 152, Merced County Size: 6,300 acres Features: Wildlife management area; steep oak-grassland (upper unit) and steep hilly grassland (lower unit); hunting and wildlife viewing opportunities: wild pig, black-tailed deer, gray fox, birds; foot access only Agency with Jurisdiction: California Department of Fish and Wildlife
<b>San Joaquin Valley Subsection</b>	
Grasslands Wildlife Management Area	Location: San Joaquin Valley Size: 80,000 acres Features: National wildlife refuge consisting entirely of privately owned lands on which perpetual conservation easements have been purchased. Supports diverse habitats: seasonally flooded marshlands, semipermanent marshes, riparian habitats, wet meadows, vernal pools, native uplands, pastures, and native grasslands. Some agricultural lands are managed to maximize benefits to wildlife and waterfowl. Several listed plants and animals benefit from the habitat protection provided by the easement program <sup>1</sup> Agencies with Jurisdiction: USFWS, private landowners
Volta Wildlife Area	Location: 0.75 mile north of Volta, Ingomar Grade, Merced County Size: 3,800 acres Features: Wildlife refuge; managed marsh and valley alkali shrubland; permitted hunting during waterfowl season, wildlife viewing opportunities; well-known waterfowl hunting area; foot access only Agency with Jurisdiction: California Department of Fish and Wildlife
Los Baños Wildlife Area	Location: 4 miles northeast of Los Banos, Merced County Size: 6,200 acres Features: Wetland habitat: lakes, sloughs, and managed marsh; permitted hunting, wildlife viewing, boating, fishing; educational visitor's center Agency with Jurisdiction: California Department of Fish and Wildlife
Klamath Land/Cattle Wetlands Conservation Easement	Location: 4 miles northeast of Los Banos, Merced County Size: 235 acres Features: Wetland habitat: lakes, sloughs, and marsh; private access only Agency with Jurisdiction: California Department of Fish and Wildlife

Source: CCED 2016; CPAD 2016; USFWS 2016b

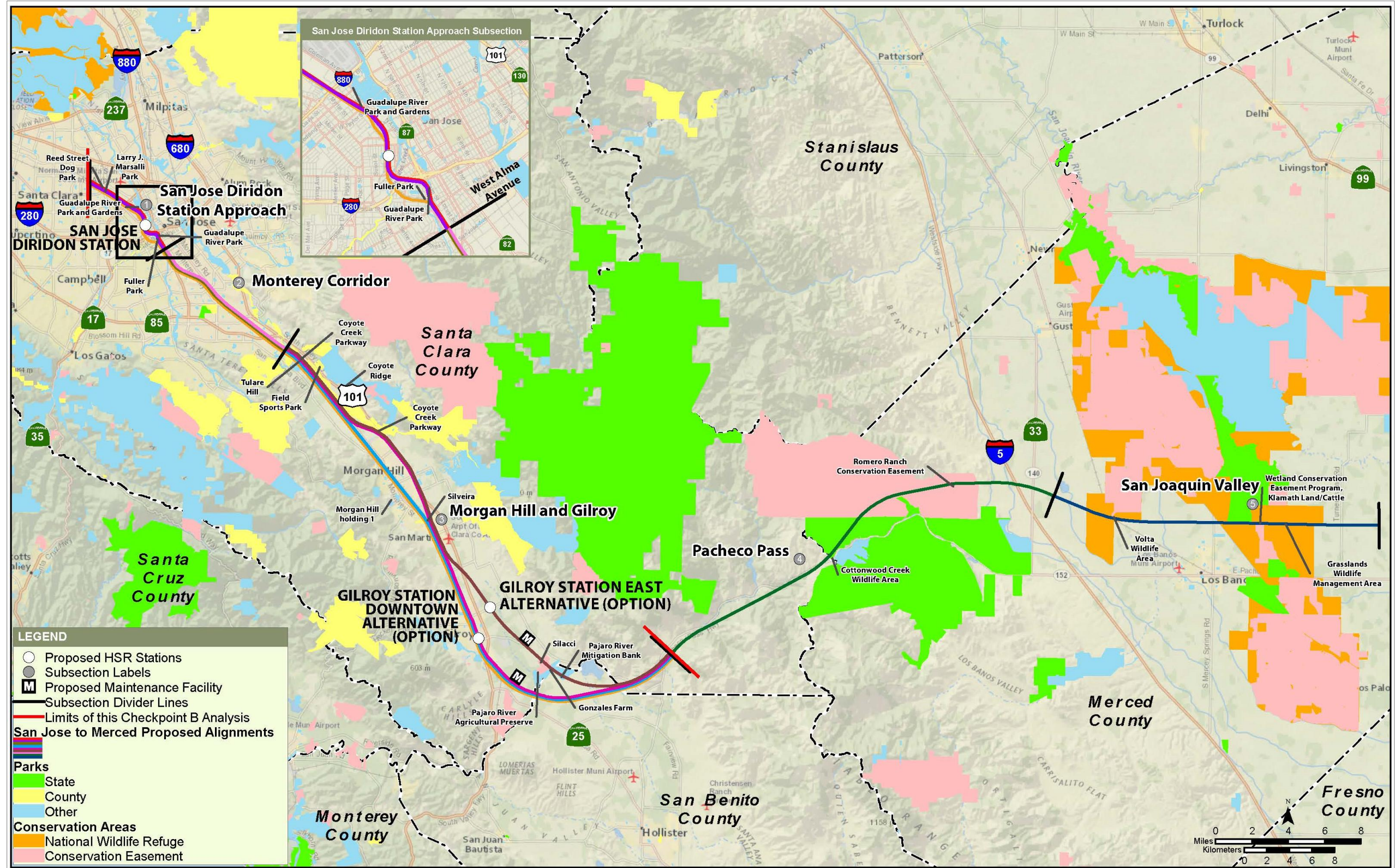
<sup>1</sup> USFWS 2013

SR = State Route; USACE = U.S. Army Corps of Engineers; USFWS = U.S. Fish and Wildlife Service

### FEMA 100-year Flood Hazard Zones

As illustrated on Figure 5-3, multiple locations in the study area are subject to risk of flooding in a 100-year flood event. While such locations are distributed throughout the study area, most of the FHZs are in the Morgan Hill and Gilroy Subsection—largely along major watercourses (typically with relatively wide floodplains) and in low-lying agricultural areas. All four alternatives cross FHZs. The San Jose Diridon Station Approach and Monterey Corridor Subsections have the fewest locations within a 100-year FHZ. These locations are primarily adjacent to major watercourses: Los Gatos Creek, the Guadalupe River, and Coyote Creek.



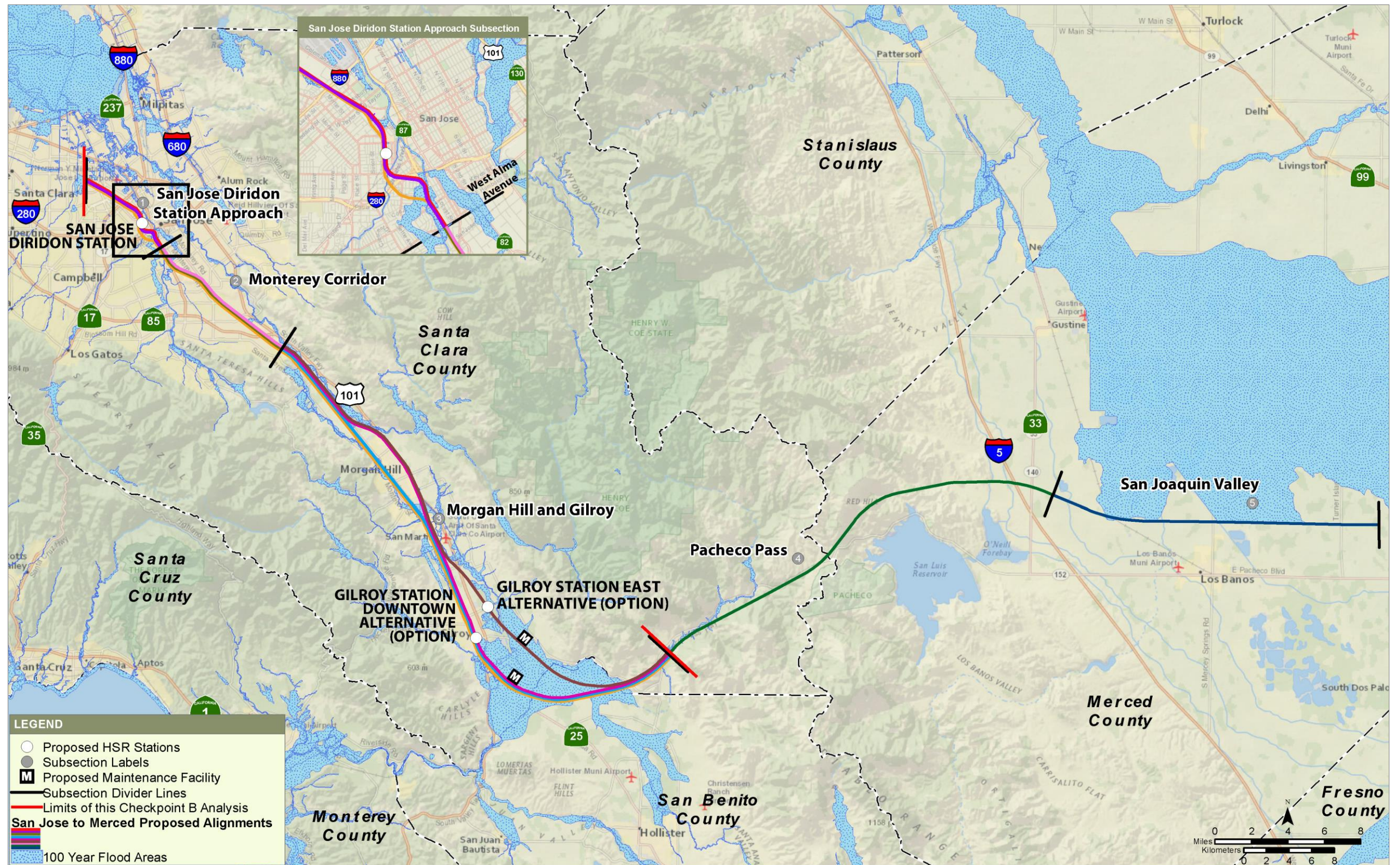


Source: CPAD 2016; CCED 2016; USFWS 2016b

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Note: Parks are discussed in Section 3.15, Parks, Recreation, and Open Space, of the San Jose to Merced Draft EIR/EIS.

Figure 5-2 Parks, Recreation Areas, and Conservation Areas in the Study Area



Source: FEMA 2016a

Note: Flood zones and hazards are discussed in Section 3.8, Hydrology and Water Resources, of the San Jose to Merced Draft EIR/EIS.

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Figure 5-3 FEMA 100-year Flood Hazard Zones in the Study Area

## 5.1.2 Impacts of Alternatives on Other Environmental Resources

### 5.1.2.1 Important Farmland

The most extensive impacts on Important Farmland from the four alternatives would take place in the Morgan Hill and Gilroy Subsection. None of the design options in the San Jose Diridon Station Approach would affect any Important Farmland, and Alternative 4 would only affect 0.3 acre of Important Farmland in the Monterey Corridor subsection.

#### San Jose Diridon Station Approach

There are no agricultural resources in the San Jose Diridon Station Approach Subsection.

#### Monterey Corridor

Alternative 4 would result in approximately 0.3 acre of impacts on unique farmland in the Monterey Corridor Subsection. No other alternatives would affect Important Farmland in this subsection.

#### Morgan Hill and Gilroy

All alternatives would affect Important Farmland in the Morgan Hill and Gilroy Subsection (Table 5-4). Alternative 4 would result in the least extensive total impacts on Important Farmland.

**Table 5-4 Impacts on Important Farmlands in the Morgan Hill and Gilroy Subsection (acres)**

Important Farmland	Embankment to Downtown Gilroy (Alt. 2)	Viaduct to Downtown Gilroy (Alt. 1)	Viaduct to East Gilroy (Alt. 3)	Blended, At-Grade to Downtown Gilroy (Alt. 4)
Prime Farmland	589.1	509.4	595.3	350.3
Farmland of Statewide Importance	133.9	101.8	140.8	101.4
Unique Farmland	17.2	11.3	3.6	8.9
Farmland of Local Importance	228.5	171.0	172.6	89.8
<b>Total of Important Farmland Impacts</b>	<b>968.7</b>	<b>793.5</b>	<b>912.3</b>	<b>550.4</b>

Source: FMMP 2016; HNTB 2018

### 5.1.2.2 Cultural Resources

The Morgan Hill and Gilroy Subsection contains the greatest number of cultural resources (archaeological and built resources) with the potential to be affected by the project, while the Monterey Corridor Subsection contains the fewest.

#### San Jose Diridon Station Approach

Alternative 4 has the potential to affect the same number of archaeological sites as Alternatives 1, 2, and 3. However, in the San Jose Diridon Station Approach Subsection, Alternative 4 has the potential to affect one fewer built historic resource than the other alternatives (Table 5-5).

**Table 5-5 Impacts on Cultural Resources in the San Jose Diridon Station Approach Subsection**

Cultural Resources	Viaduct to Scott Blvd. (Alts. 2, 3)	Viaduct to I-880 (Alt. 1)	Blended, At-Grade (Alt. 4)
Archaeological sites	4	4	4
Known built historic resources (NRHP-listed or eligible resources)	6	6	5

Source: ICF 2017, 2018

NRHP = National Register of Historic Places

### Monterey Corridor

Under Alternative 4, the project has the potential to affect one fewer archaeological resource than Alternatives 1, 2, and 3 (Table 5-6). No known built historic resources would be affected in the Monterey Corridor Subsection.

**Table 5-6 Impacts on Cultural Resources in the Monterey Corridor Subsection**

Cultural Resources	At-Grade (Alt. 2)	Viaduct (Alts. 1, 3)	Blended, At-Grade (Alt. 4)
Archaeological sites	2	2	1
Known built historic resources (NRHP-listed or eligible resources)	–	–	–

Source: ICF 2017, 2018

NRHP = National Register of Historic Places

### Morgan Hill and Gilroy

The Morgan Hill and Gilroy Subsection traverses an area that is highly sensitive for NRHP-listed or eligible resources—especially built resources. Alternative 4 could affect up to 12 NRHP-listed or eligible built resources and 10 archaeological sites (Table 5-7). Two of these resources are both archaeological resources and built historical resources and are therefore counted in both categories.

**Table 5-7 Impacts on Cultural Resources in the Morgan Hill and Gilroy Subsection**

Cultural Resources	Embankment to Downtown Gilroy (Alt. 2)	Viaduct to Downtown Gilroy (Alt. 1)	Viaduct to East Gilroy (Alt. 3)	Blended, At-Grade to Downtown Gilroy (Alt. 4)
Archaeological sites	3	1	3	10
Known built historic resources (NRHP-listed or eligible resources)	17	12	11	12

Source: ICF 2017, 2018

NRHP = National Register of Historic Places

#### 5.1.2.3 Parks, Recreation, and Conservation Areas

The Morgan Hill and Gilroy Subsection contains the greatest number of parks, recreation, and conservation areas with the potential to be affected by the project. There would be no impacts in the Monterey Corridor Subsection. Alternative 4 would affect more resources but less acreage than Alternatives 1, 2, and 3.

### San Jose Diridon Station Approach

Alternative 4 would affect Fuller Park, which Alternatives 1, 2, and 3 would avoid. Alternative 4 would not affect the Larry J. Marsalli Park. Alternative 4 would result in lesser impacts than Alternatives 1, 2, and 3 (Table 5-8).

**Table 5-8 Impacts on Parks, Recreation Areas, and Conservation Areas in the San Jose Diridon Station Approach Subsection (acres)**

Parks, Recreation, and Conservation Areas	Aerial to Scott Blvd. (Alts. 2, 3)	Aerial to I-880 (Alt. 1)	Blended, At-Grade (Alt. 4)
Reed Street Dog Park <sup>1</sup>	0.1	–	<0.1
Larry J. Marsalli Park <sup>1</sup>	0.7	–	–
Guadalupe River Park <sup>1</sup>	3.1	3.0	1.0
Fuller Park <sup>1</sup>	–	–	<0.1
<b>Total (number of resources/acres of impact)</b>	<b>3/3.9</b>	<b>1/3.0</b>	<b>3/1.1</b>

Source: HNTB 2018; CPAD 2016; CCED 2016; USFWS 2016b

<sup>1</sup> Section 4(f) property

### Monterey Corridor

There are no parks, recreation areas, or conservation areas within the project footprint of any of the alternatives in this subsection. Accordingly, there would be no impacts on parks, recreation, or conservation areas.

### Morgan Hill and Gilroy

The extent of impacts in this subsection ranges from <0.1 to 40 acres. Although Alternative 4 would affect the greatest number of resources, including Field Sports Park and Morgan Hill Holding 1, both of which would be avoided by Alternatives 1, 2, and 3, its overall extent of impact would be less (Table 5-9).

**Table 5-9 Impacts on Parks, Recreation, and Conservation Areas in the Morgan Hill and Gilroy Subsection (acres)**

Parks, Recreation, and Conservation Areas	Embankment to Downtown Gilroy (Alt. 2)	Viaduct to Downtown Gilroy (Alt. 1)	Viaduct to East Gilroy (Alt. 3)	Blended, At-Grade to Downtown Gilroy (Alt. 4)
Coyote Creek Parkway <sup>1</sup>	12.1	8.0	8.0	3.8
Tulare Hill <sup>1</sup>	1.8	<0.1	<0.1	<0.1
Morgan Hill Outdoor Sports Complex	-	-	-	-
Wheeler Tot Lot	-	-	-	-
Forest Street Park	-	-	-	-
Gonzales Farm	-	-	5.6	-
Pajaro River Mitigation Bank	1.0	1.0	16.0	1.6
Silveira Property	2.9	-	-	<0.1
Silacci Conservation Easement	-	-	40.8	-

Parks, Recreation, and Conservation Areas	Embankment to Downtown Gilroy (Alt. 2)	Viaduct to Downtown Gilroy (Alt. 1)	Viaduct to East Gilroy (Alt. 3)	Blended, At-Grade to Downtown Gilroy (Alt. 4)
Field Sports Park <sup>1</sup>	-	-	-	2.0
Morgan Hill holding 1	-	-	-	0.7
<b>Total (number of resources/acres of impact)</b>	<b>4/17.8</b>	<b>3/9.1</b>	<b>5/70.5</b>	<b>6/8.3</b>

Source: CCED 2016; CPAD 2016; HNTB 2018; USFWS 2016b

<sup>1</sup> Section 4(f) property

#### 5.1.2.4 FEMA 100-Year Flood Hazard Zones

Direct impacts on FEMA 100-year FHZs resulting from construction of each subsection's design options are shown in Table 5-10 through Table 5-12.

##### San Jose Diridon Station Approach

Alternative 4 would result in substantially lesser impacts on FEMA 100-year FHZs in this subsection than Alternatives 1, 2, and 3. All of the alternatives would cross areas adjacent to major watercourses: Los Gatos Creek and the Guadalupe River. Impacts are shown in Table 5-10.

**Table 5-10 Impacts on 100-year Flood Hazard Zones in the San Jose Diridon Station Approach Subsection (acres)**

FEMA Flood Hazard Zone	Aerial to Scott Blvd. (Alts. 2, 3)	Aerial to I-880 (Alt. 1)	Blended, At-Grade (Alt. 4)
Zone A	3.6	3.6	2.7
Zone AE	-	-	-
Zone AH	36.4	35.0	16.2
Zone AO	16.4	16.4	12.7
<b>Total</b>	<b>56.4</b>	<b>55.0</b>	<b>31.6</b>

Source: FEMA 2016b; HNTB 2018

##### Monterey Corridor

All three design options in this subsection would result in relatively limited encroachment into FEMA 100-year FHZs, primarily in the vicinity of Coyote Creek, but Alternative 4 would result in slightly more than half the extent of impacts of Alternatives 1, 2, and 3. Impacts are shown in Table 5-11.



**Table 5-11 Impacts on 100-year Flood Hazard Zones in the Monterey Corridor Subsection**

FEMA Flood Hazard Zone	At-Grade (Alt. 2)	Viaduct (Alts. 1, 3)	Blended, At-Grade (Alt. 4)
Zone A	–	–	–
Zone AE	–	–	–
Zone AH	13.3	13.3	7.3
Zone AO	0.6	0.6	0.4
<b>Total</b>	<b>13.9</b>	<b>13.9</b>	<b>7.7</b>

Source: FEMA 2016b; HNTB 2018

**Morgan Hill and Gilroy Subsection**

The wide floodplain of the Pajaro River in this subsection contributes to the relatively high impacts on FEMA 100-year FHZs of all alternatives. Alternative 4 would affect approximately 25 percent fewer acres of FEMA 100-year FHZs than Alternative 3, which would be the least impactful of Alternatives 1, 2, and 3. Impacts are presented in Table 5-12.

**Table 5-12 Impacts on 100-year Flood Hazard Zones in the Morgan Hill and Gilroy Subsection**

FEMA Flood Hazard Zone	Embankment to Downtown Gilroy (Alt. 2)	Viaduct to Downtown Gilroy (Alt. 1)	Viaduct to East Gilroy (Alt. 3)	Blended, At-Grade to Downtown Gilroy (Alt. 4)
Zone A	653.1	644.8	533.1	412.3
Zone AE	132.0	57.7	117.6	47.0
Zone AH	38.6	34.8	–	43.7
Zone AO	64.2	29.8	29.8	12.6
<b>Total</b>	<b>887.9</b>	<b>767.1</b>	<b>680.5</b>	<b>515.6</b>

Source: FEMA 2016b; HNTB 2018

**5.2 Community Resources**

**5.2.1 Scope of Analysis**

*Community resources* refer to low-income and minority populations as well as residential and business displacements. For the purposes of this analysis, the study area is the combined project footprint of all alternatives in each relevant subsection, reflecting the maximum area of direct effect for each alternative. This method likely overestimates the extent to which the project may affect community resources, because some impacts would be permanent and some would be temporary. For more information on study area and methods for these topics, refer to the 2017 Checkpoint B Addendum 3 (Authority and FRA 2017).

**5.2.1.1 Existing Conditions**

**Low-Income and Minority Populations**

Low-income and race and ethnicity characteristics of the counties that the project would cross are shown in Table 5-13. *Racial minority* in the following tables refers to persons self-identifying as Black or African American, Asian or Pacific Islander, or American Indian or Alaskan Native. Low-income, race and ethnicity characteristics in the study area relative to the region are shown on Figure 5-4 through Figure 5-6. For more information on race and ethnicity characteristics by

subsection, refer to the 2017 Checkpoint B Addendum 3 (Authority and FRA 2017). There has been no change to these data since publication of that document.

**Table 5-13 Reference Community Low-Income, Race, and Ethnicity Characteristics (2015 Estimates)**

Geographic Area	Population	Low-Income (%) <sup>1</sup>	Racial Minority (%)	Hispanic/Latino (%)
Santa Clara County	1,868,149	22.3	51.7	26.6
San Benito County	57,557	10.8	15.5	57.9
Merced County	263,885	26.1	51.7	56.9
Three-county region	2,189,591	22.4	49.2	31.1

Source: U.S. Census Bureau American Community Survey 2011–2015

<sup>1</sup> In Santa Clara County, the percent of low-income households is determined based on the population below 200 percent of the federal poverty level, consistent with the thresholds set by the Metropolitan Transportation Commission.

### ***San Jose Diridon Station Approach***

The blended, at-grade design option footprint differs from the other two design options' project footprints, staying within the existing railroad right-of way south of San Jose Diridon Station and running through the Gardner neighborhood before coming back to Monterey Road near Fuller Avenue. However, the surroundings of all three design options exhibit comparable minority and low-income characteristics. The existing conditions data for the design option associated with Alternative 4 are identical to those used for Alternatives 2 and 3. Refer to Figure 5-4 in the 2017 Checkpoint B Addendum 3 (Authority and FRA 2017).

### ***Monterey Corridor***

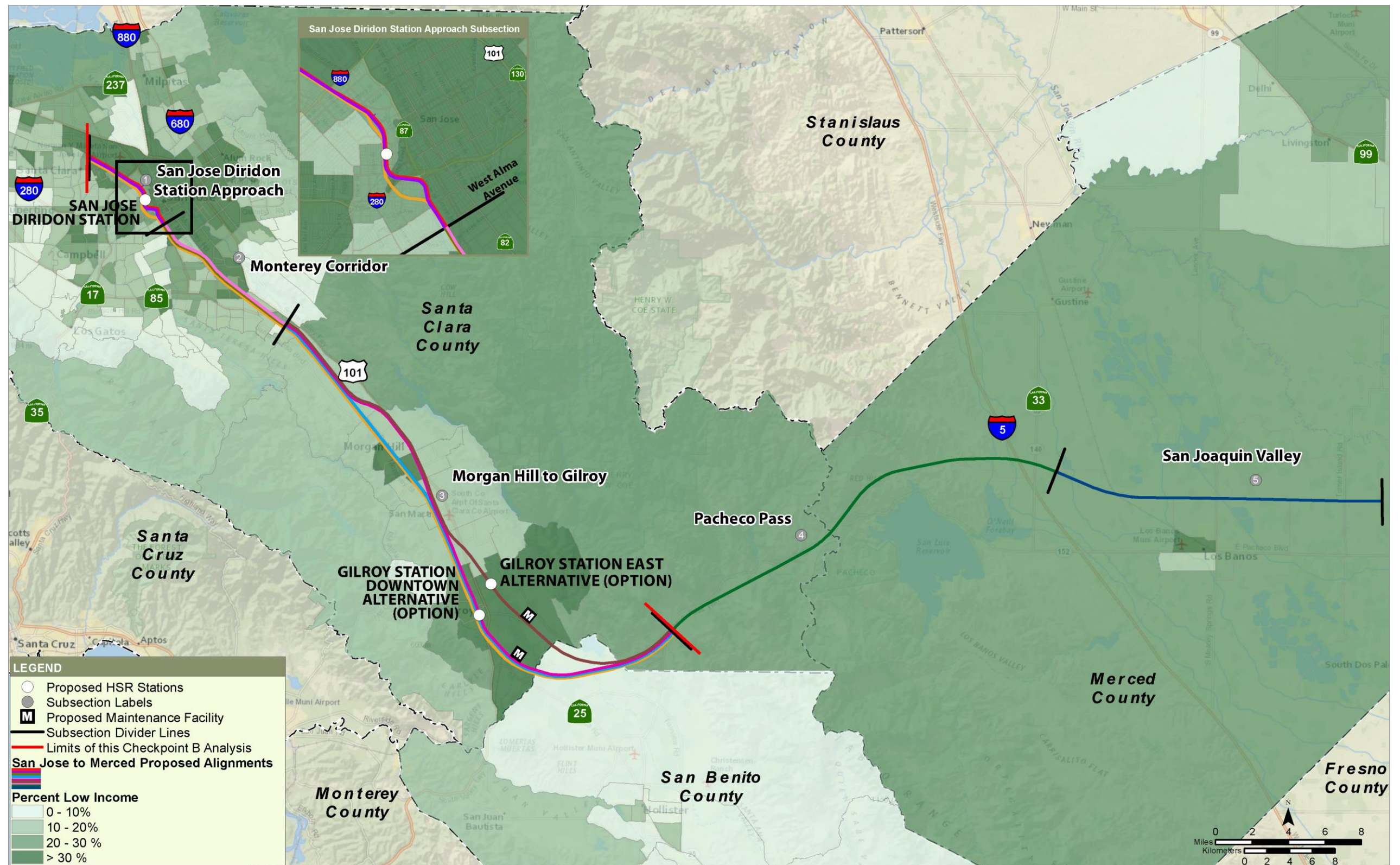
Because the study area for the blended, at-grade design option stays primarily within the existing railroad right-of-way, the affected area is smaller than that of the design options analyzed for Alternatives 1, 2, and 3. Proportionately, however, the demographic compositions are similar, and the data for Alternative 4 vary only slightly from what is shown in Figure 5-5 of the 2017 Checkpoint B Addendum 3 (Authority and FRA 2017). Of the 85,522 people in the study area, 28.8 percent are identified as low-income, 48.1 percent are identified as racial minority, and 38.9 percent are identified as Hispanic/Latino (ICF 2018).

### ***Morgan Hill and Gilroy***

The project footprint in the Morgan Hill and Gilroy Subsection supports proportions of low-income and minority populations that vary depending on the design option (see Figure 5-6 in the 2017 Checkpoint B Addendum 3 [Authority and FRA 2017]). In general, the Alternative 4 design option is similar to Alternative 2, with slight variations. Of the 76,751 people in the study area, 30.1 percent are low-income, 31.1 percent are identified as racial minority, and 48.9 percent are identified as Hispanic/Latino.

### **Residential and Business Displacements**

The more urbanized areas in San Jose, Morgan Hill, and Gilroy have more development and therefore more potential residential units and businesses to displace.

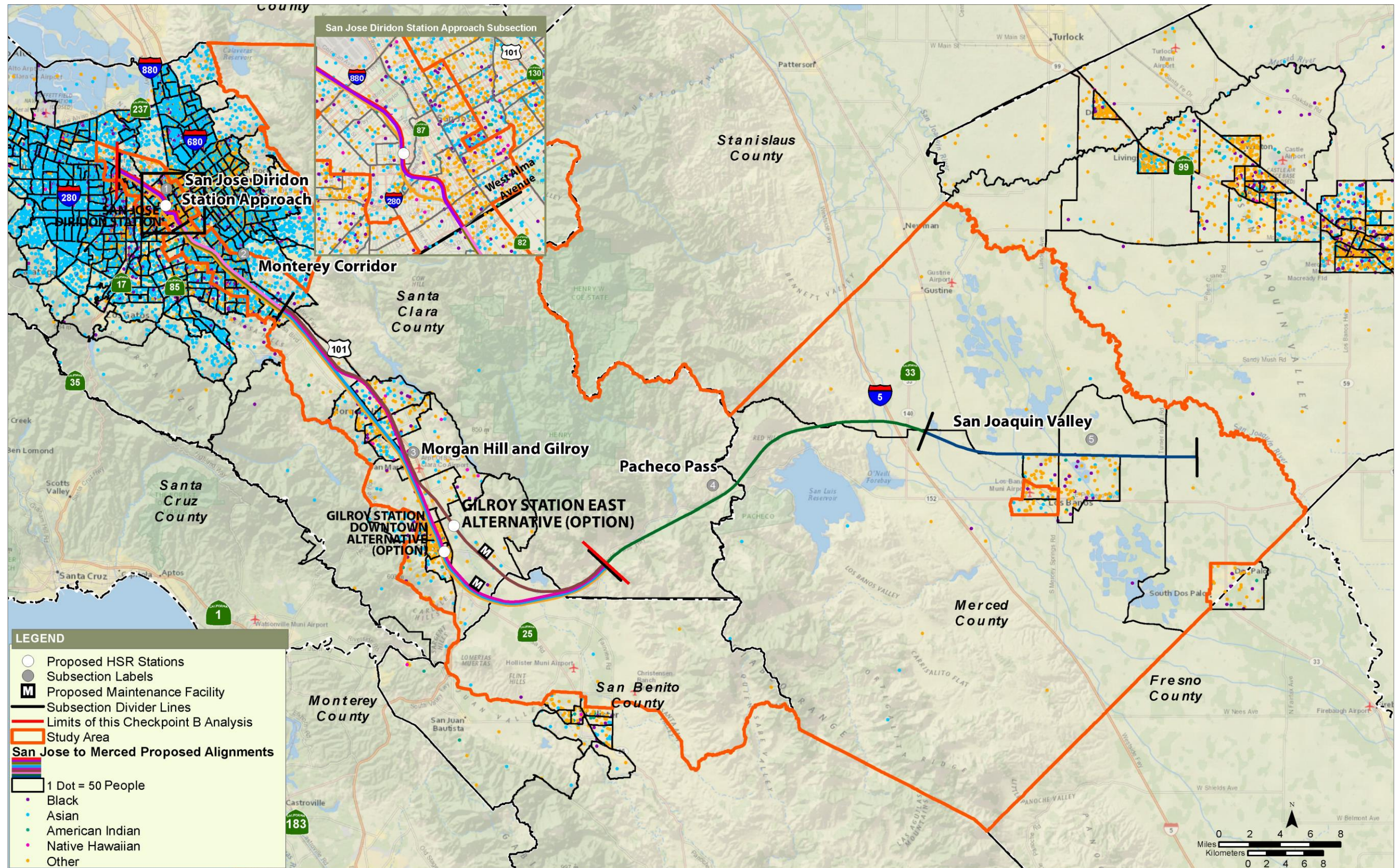


Source: U.S. Census Bureau American Community Survey 2011–2015

Note: Low-income populations are discussed in Section 3.11, Socioeconomics and Communities, of the San Jose to Merced Draft EIR/EIS.

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Figure 5-4 Low-Income Populations in the Study Area Relative to the Surrounding Counties

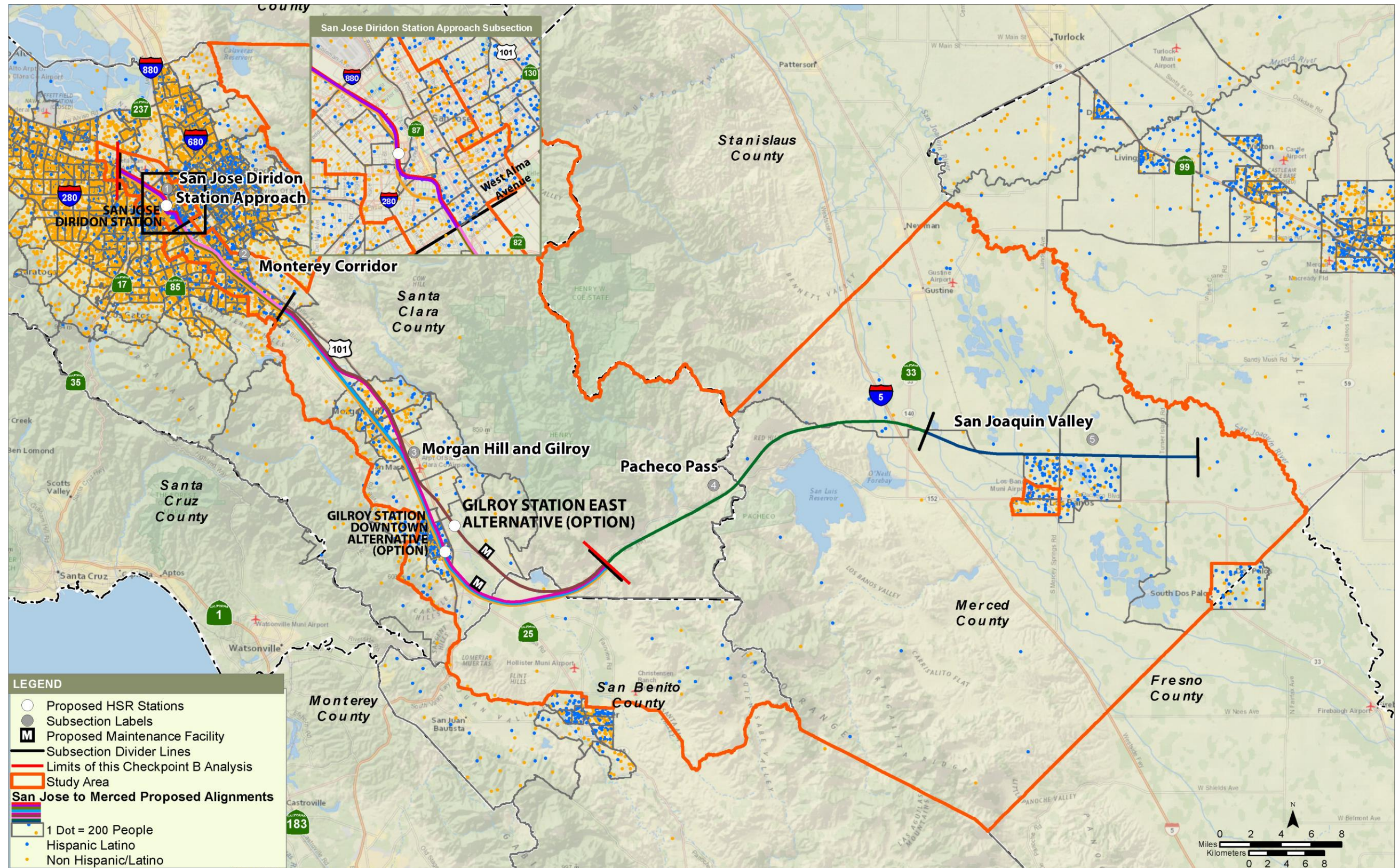


Source: U.S. Census Bureau American Community Survey 2011–2015

Note: Minority populations are discussed in Section 3.11, Socioeconomics and Communities, of the San Jose to Merced Draft EIR/EIS.

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Figure 5-5 Racial Minority Populations in the Study Area Relative to the Surrounding Counties



Source: U.S. Census Bureau American Community Survey 2011–2015

Note: Minority populations are discussed in Section 3.11, Socioeconomics and Communities, of the San Jose to Merced Draft EIR/EIS.

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Figure 5-6 Hispanic Latino and Non-Hispanic/Latino Populations in the Study Area Relative to the Surrounding Counties



## 5.2.2 Impacts of Design Options on Community Resources

### 5.2.2.1 Low-Income and Minority Populations

Construction and operations of the project have the potential to have adverse effects on low-income and minority populations resulting from traffic congestion, noise and vibration, and aesthetics and visual changes. Residential displacements would take place in communities with high percentages of minority and low-income populations.

However, long-term beneficial effects associated with HSR would also accrue to low-income and minority populations, including improved regional mobility, improved traffic conditions on freeways as people increasingly use HSR, improved safety of intersections due to improvements of at-grade intersections, and reductions in regional air pollutant emissions. Based on this preliminary analysis of the presence and proximity of low-income and minority populations along the project alignment, the potential for substantial adverse effects on low-income and minority populations is moderate.

Low-income and minority populations are present at comparable levels for all four alternatives. Based on the level of detail associated with this Checkpoint B analysis, effects on low-income and minority populations are not a distinguishing factor among the alternatives.

### 5.2.2.2 Residential and Business Displacements

The project alternatives would require the acquisition of residential, commercial, and industrial properties to obtain adequate right-of-way for project construction and operations. Affected properties were identified by reviewing aerial imagery in relation to the project footprints of the design options. Any residential or commercial/industrial buildings located partially or fully within the project footprints were determined to be displaced for this analysis. This section describes the residential and business displacements that would result under each subsection.

#### San Jose Diridon Station Approach

Alternative 4 would affect significantly fewer units than Alternatives 1, 2, and 3 in the San Jose Diridon Station Approach Subsection. This difference is primarily a result of the footprint staying within the existing railroad right-of-way to the greatest extent practicable. Table 5-14 shows the extent of displacement in units and square footage for the four alternatives.

**Table 5-14 San Jose Diridon Station Approach Subsection Summary of Displacement Impacts (units [square feet])**

Displacements	Aerial to Scott Blvd. (Alts. 2, 3)	Aerial to I-880 (Alt. 1)	Blended, At-Grade (Alt. 4)
Residential	119 (111,653)	103 (92,785)	8 (11,643)
Business	170 (1,966,697)	113 (1,395,859)	25 (952,621)

Source: ICF 2016b, 2018

#### Monterey Corridor

In the Monterey Corridor Subsection, Alternative 4 would affect significantly fewer residential units than the other alternatives; however, Alternative 4 would affect more business units of greater total area because several commercial/industrial spaces in San Jose are within the Alternative 4 footprint. The reduction in residential units is primarily a result of the footprint staying within the existing railroad right-of-way to the greatest extent practicable. Table 5-15 shows the extent of displacement in units and square footage for the four alternatives.

**Table 5-15 Monterey Corridor Subsection Summary of Displacement Impacts ([units [square feet])**

Displacements	At-Grade (Alt. 2)	Viaduct (Alts. 1, 3)	Blended, At-Grade (Alt. 4)
Residential	121 (209,933)	28 (46,540)	12 (44,572)
Business	88 (324,596)	17 (214,842)	90 (848,479)

Source: ICF 2016b, 2018

### Morgan Hill and Gilroy

All design options in the Morgan Hill and Gilroy Subsection would displace residential properties and businesses. However, in this subsection, Alternative 4 would affect significantly fewer residential and business units, primarily because the footprint stays within the existing railroad right-of-way to the greatest extent practicable. Table 5-16 shows the extent of displacement in units and square footage for the four alternatives.

**Table 5-16 Morgan Hill and Gilroy Subsection Summary of Displacement Impacts ([units [square feet])**

Displacements	Embankment to Downtown Gilroy (Alt. 2)	Viaduct to Downtown Gilroy (Alt. 1)	Viaduct to East Gilroy (Alt. 3)	Blended to Downtown Gilroy (Alt. 4)
Residential	205 (744,455)	77 (208,021)	70 (202,599)	5 (9,807)
Business	245 (2,995,482)	133 (1,705,735)	28 (863,544)	4 (13,488)

Source: ICF 2016b, 2018



## 6 SECTION 4(F) CONSIDERATIONS

This chapter evaluates the relative effect of each design option by subsection for all four alternatives on resources regulated under Section 4(f) of the Department of Transportation Act.

### 6.1 Scope of Analysis

For the purposes of this analysis, the study area is the combined project footprints of all four alternatives as described in previous chapters. Because the project footprint represents all permanent and temporary right-of-way required for the project, the parks, recreation, and open space resources and cultural resource information provided in Chapter 5, Other Environmental and Community Resources, represents an estimate of the relative effect of each alternative on features regulated under Section 4(f). Not every resource identified would be subject to Section 4(f), nor would the project affect all identified resources.

#### 6.1.1 Existing Conditions

Table 5-8 and Table 5-9 show the parks, recreation, and conservation area Section 4(f) resources that would be directly affected by design options in each subsection.

### 6.2 Impacts of Design Options on Section 4(f) Resources

Based on the information available, Alternative 4 would potentially affect up to three Section 4(f) resources in the San Jose Diridon Station Approach and Morgan Hill and Gilroy Subsections (Tables 5-8 and 5-9).

In the San Jose Diridon Station Approach Subsection, Alternative 4 would affect three Section 4(f)-protected parks: Guadalupe River Park, Reed Street Dog Park, and Fuller Park. Alternatives 2 and 3 would also affect three parks: Larry J. Marsalli, not Fuller Park. Alternative 1 would affect one park: Guadalupe River Park. Alternatives 1, 2, and 3 have the potential to affect six NRHP-listed or eligible known built resources, while Alternative 4 would potentially affect five.

In the Morgan Hill and Gilroy Subsection, all four alternatives would have potential effects on two Section 4(f)-protected properties: Coyote Creek Parkway and Tulare Hill (a planned park not currently developed and without any protected facilities, attributes, or features). Both of these resources are located at the north end of the subsection where all alternatives follow the same alignment along Monterey Road. Alternative 4 would also have potential effects on Field Sports Park. Alternative 2 has the potential to affect the largest number (up to 17) of NRHP-listed or eligible known built resources, while Alternative 4 would potentially affect up to 12 NRHP-listed or eligible known built resources.

See Chapter 5 for more details on cultural resources. The San Jose Diridon Station Approach and Morgan Hill and Gilroy Subsections contain NRHP-listed and eligible built resources that may be subject to Section 4(f) protection, as well as numerous archaeological resources, most of which have not been evaluated to determine if they are subject to such protection. If the alternatives cannot avoid archaeological sites, the Authority would conduct archaeological data recovery for the purposes of site identification and significance evaluation according to a plan prepared and approved by the State Historic Preservation Officer (SHPO) to determine if the sites are eligible for listing in the NRHP. If sites are determined eligible, the Authority would mitigate impacts through archaeological data recovery. The design options would all have similar impacts, and mitigation to minimize and avoid impacts would be discussed with SHPO.

After making a Section 4(f) determination and identifying the reasonable measures to minimize harm, the FRA will compare the alternatives to determine which alternative has the potential to cause the least overall harm in light of the preservationist purpose of the statute.



## 7 FACILITIES REGULATED UNDER SECTION 14 OF THE RIVERS AND HARBORS ACT

Section 14 of the Rivers and Harbors Act of 1899 and codified in 33 United States Code 408 (commonly referred to as Section 408) authorizes the USACE to grant permission for the alteration, occupation, or use of a USACE civil works project (also known as 408 facilities) if it is determined that the activity will not be injurious to the public interest and will not impair the usefulness of the project. Documentation for the Section 408 component of the checkpoint integration process will be provided independently of this Checkpoint B Addendum 4 as part of the Checkpoint C process.

The proposed project crosses two waterways, the Guadalupe River and Upper Llagas Creek, along which 408 facilities are located. Accordingly, USACE permission under Section 408 would likely be required for HSR construction at these two locations. The bridge design for the Guadalupe River crossing does not include the placement of structures within the mean high water mark of the channel, but the structures would be within the USACE improvement area. At Upper Llagas Creek, the flood improvement project has one phase in construction at present. All alternatives, including Alternative 4, would cross Upper Llagas Creek just east of where the creek crosses under Monterey Road. All alternatives would be on bridge structures over Upper Llagas Creek with columns outside the mean high water mark of the channel, but there would be structures within the planned flood project improvement area. Construction of all four alternatives is being designed to avoid adverse effects on the Guadalupe River and Upper Llagas Creek. In addition to the structures described above, Alternative 2 would require a new bridge for the relocated San Martin Avenue over Upper Llagas Creek that would have columns outside the channel's mean high water mark, but there would be structures within the flood project improvement area.

Lower Llagas Creek is the location of a previously completed Natural Resources Conservation Service flood improvement project. Alternative 4 would not cross Lower Llagas Creek. Alternative 3 would cross the Lower Llagas Creek flood project area near Holsclaw Road. Alternative 3 would have bridge columns within the high-water mark of Lower Llagas Creek and therefore would encroach within the previously improved flood project area. Alternative 3 is being designed to avoid an adverse effect on the prior flood control project. HSR will coordinate with the Natural Resources Conservation Service separately concerning the Lower Llagas Creek project.



## 8 PRACTICABILITY

This Checkpoint B Summary Report Addendum 4 analyzes the potential practicability of Alternative 4 at a general level of detail to determine if there are apparent practicability issues based on the current level of design and environmental data. The Authority and FRA will analyze alternatives in the Checkpoint C Summary Report, which will include an assessment of the practicability of each alternative.

The 404(b)(1) Guidelines state that an alternative is *practicable* “if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes” (40 Code of Federal Regulations § 230.10(a)(2)). Based on current information, Alternative 4 would be potentially practicable.



## 9 PUBLIC OUTREACH AND COMMUNITY CONSIDERATIONS

This chapter provides a brief summary of outreach to agencies and the public to identify issues and concerns. The chapter also provides a summary of stakeholder, public, and community concerns identified during public outreach that are relevant to the selection of project design and alternatives.

### 9.1 Public Comments Related to Alternative 4

#### 9.1.1 Outreach to Agencies and the Public

Since release of its 2018 Business Plan, the Authority has continued outreach activities to the general public and appropriate public agencies during the environmental and alternatives development processes. The Authority has held:

- Webinars with Technical Working Group and Community Working Group members
- Two San Jose Community Working Group meetings
- Informational presentations to and informal meetings with elected officials and their staff
- Informal planning and coordination meetings with city staff and chambers of commerce
- Informal resource-specific agency meetings
- Informational meetings with community organizations, neighborhood associations, and local/resource agency staff
- Neighborhood tours with neighborhood associations
- Participation in station-area planning meetings
- Conceptual design input meetings with local jurisdictions and wildlife conservation stakeholders
- Working draft and in-progress draft preliminary engineering reviews with local jurisdictions and wildlife conservation stakeholders
- Informational open houses and informal presentations for community organizations and groups
- Letter, email, and phone requests for information and informal consultation

#### 9.1.2 Issues Raised during Public Outreach

The following is a description of issues consistently raised in these meetings (through verbal and written comments):

- **Fair Allocation of Project Benefits and Burdens**—Commenters wanted to understand the Authority’s rationale and methodology for allocating project benefits (e.g., siting of stations) and burdens (e.g., property taking) at the community scale. Furthermore, they wanted to understand the details of how the Authority intends to fairly compensate communities and individuals subject to these burdens.
- **Impacts**—Commenters were concerned about a wide array of potential impacts from the project, including traffic, noise, safety (especially at at-grade crossings), aesthetics, and isolation of neighborhoods. Some commenters were also concerned about impacts on existing utility infrastructure, historic structures, and emergency response times. Concerns about traffic also touched on bike and pedestrian access, connections to local transit, and the availability of parking.
- **Consultation and Outreach**—Commenters were adamant that the Authority continue to engage local government agencies and communities to solicit their input and incorporate it in their designs. Commenters requested that the Authority consult regional partners and

developers on the status of existing and future infrastructure and development projects as the environmental analysis is completed.

- **Project Viability and Uncertainty**—Commenters were concerned about the availability of funding and how this may affect the viability of the project. In addition, several commenters noted that the lack of clarity regarding the train’s alignment has led to a paralysis in development across sectors (from commercial projects to individual home renovations). Given the concerns raised around fair compensation and the timeline for receiving it, these comments regarding project viability indicate misgivings about whether the Authority will be able to keep its promises.
- **Project Alternative Details**—Commenters wanted to better understand the differences between the various alternatives under consideration and their potential local impacts, such as implications for grade crossings, level of service, tunneling, number of tracks, and width of right-of-way.

### 9.1.3 Specific Issues by Subsections

Concerns regarding alignments or other HSR facilities in specific subsections are described in more detail in the following sections. These concerns were expressed verbally at meetings and received through written comment cards, letters, and emails.

#### 9.1.3.1 San Jose Diridon Station Approach

During recent Community and Technical Working Group meetings in San Jose, commenters asked the Authority to consider a tunnel option in downtown San Jose; expressed some support for the SR 87/I-280 design option; expressed interest in blended HSR operations at Diridon Station; and expressed interest in the integration of HSR station construction, operations, and multimodal access with other land use and development in surrounding neighborhoods.

Commenters expressed concerns regarding noise and vibration, along with concerns about visual impacts, eminent domain and impacts on property values, impacts on neighborhood parks, and traffic impacts.

Commenters were concerned about bike and pedestrian access (e.g., bike paths on SR 87), aesthetics of safety features, impacts on proposed projects and historic structures, and the potential for bisecting neighborhoods that are already affected by transportation infrastructure. Commenters also expressed interest in continued, neighborhood-specific outreach.

Commenters were concerned about the increased service and capacity of Diridon Station.

Commenters wondered if the Authority was analyzing the tunnel/trench option put forth by the City of San Jose and if the Authority was interested in impacts on the Capitol Expressway area under Alternative 4.

Commenters wondered how the Diridon Integrated Station Concept (also known as DISC) process would be considered by the Authority in the environmental document.

#### 9.1.3.2 Monterey Corridor

Commenters expressed concerns about impacts resulting from local road closures and the proposed narrowing of Monterey Road. Other related concerns included impacts on local road connectivity, access, and right-of-way. Commenters indicated concern about eminent domain and impacts on property values.

Commenters were interested in increased passenger train service between Gilroy and San Jose, potential for electrification south to Gilroy, tunneling in San Jose, roadway grade crossing separations, and parking allocation. Commenters also expressed interest in continued neighborhood-specific outreach.



### 9.1.3.3 *Morgan Hill and Gilroy*

Early in scoping, the City of Morgan Hill expressed concerns regarding the impacts of the East of UPRR aerial alignment through the city. The Authority included the US 101 design options (to downtown Gilroy or to east of Gilroy) in the PAA in response to these concerns. After the PAA, Morgan Hill requested that the Authority evaluate an at-grade alternative east of the UPRR from Cochrane Road to south of Morgan Hill. Morgan Hill also noted that, while it concurred with the decision to evaluate potential HSR station location options in Gilroy, the station location itself should not dictate the alignment through south Santa Clara County. If the two Gilroy station location options (downtown Gilroy and east Gilroy) proved infeasible due to right-of-way constraints or other insurmountable design constraints, then Morgan Hill would support consideration of other options.

The City of Gilroy expressed concerns regarding the impacts of the East of UPRR aerial alignment through the city and the impacts of an HSR station on its downtown and neighborhoods. Gilroy requested that an HSR trench through downtown be evaluated; this option was proposed in the PAA to be carried forward for further evaluation in the Draft EIR/EIS. After publication of the PAA, Gilroy requested that the Authority investigate the feasibility of partially covering the trench in downtown Gilroy and develop and evaluate an at-grade alternative option for the East of UPRR design option from Masten Avenue to south of Gilroy. The City also requested that an aerial alignment be developed and evaluated near the East Gilroy Station to provide for a grade-separation of the HSR and the existing and proposed future roadway.

The Planning and Development Department of Santa Clara County expressed concerns that the east Gilroy design options and station location option could significantly change the visual character and rural ambiance of that area and could have more impacts on agricultural land than the East of UPRR design option. The Planning and Development Department also stated concerns that the at-grade East of UPRR alignment through Coyote Valley could block wildlife passage and conflict with the *Santa Clara Valley Habitat Plan*.

The Roads and Airports Department of Santa Clara County requested that the HSR design team work jointly with Santa Clara County and its cities in determining proposed road modifications, reroutes, and new road connectors to support proposed road closures.

The Parks and Recreation Department of Santa Clara County requested additional evaluation of potential impacts on Santa Clara County parkland, including existing and proposed park facilities that may be displaced; easements and leaseholds; recreational, natural, and regional parkland resources; and Santa Clara County's *Countywide Trails Master Plan*.

The Local Agency Formation Commission (LAFCO) of Santa Clara County stated its concerns regarding areas of conflict between the proposed East Gilroy Station location and LAFCO policies. LAFCO encouraged the Authority to consider alternative station location options more consistent with LAFCO policies; state law; and other local and regional interjurisdictional goals, plans, and policies.

The (Santa Clara) Valley Transportation Authority has expressed concerns about potential cumulative impacts of transportation infrastructure development on natural resources and communicated its interest in collaborative approaches to mitigating impacts on sensitive species and rare habitats.

The Santa Clara Valley Water District has expressed concerns about potential floodplain or floodway modifications by HSR infrastructure as well as potential conflicts with existing or planned flood management facilities or conveyances. Local agency floodplain administrators have also expressed concerns about HSR infrastructure development in existing FEMA-designated 100-year floodplains.

Concerns regarding wildlife movement through and conservation of natural resources within the Coyote Valley and Pajaro River floodplain (also known as Soap Lake) have been expressed by the Santa Clara Valley Open Space Authority, Santa Clara Valley Habitat Agency, Peninsula Open Space Trust, The Nature Conservancy, and Pathways for Wildlife.

Residents in the east of Gilroy area expressed concerns regarding impacts on their homes and quality of life, impacts on agricultural lands, reduced access to properties, decreased property values, eminent domain, the property acquisition process, noise mitigation, criteria for the selection of a final alignment, and the viability of project funding and projected ridership figures. Commenters also expressed concern regarding impacts on agriculture and on neighborhoods near alignments east of US 101.

Residents expressed concerns about impacts on local roads, connectivity, access, and right-of-way. Commenters indicated concern about impacts from the station location option near Leavesley Road. One commenter asked whether overpasses that are perpendicular to the proposed guideway are still proposed for Morgan Hill, San Martin, and Gilroy roads. Residents asked whether Depot Street would be closed for the proposed grade-separation between Dunne Avenue and Main Street in Morgan Hill.

The Transportation Agency for Monterey County stated its support for a Downtown Gilroy Station to facilitate connections with regional and local transit services.

Commenters expressed concerns about the amount of property the Authority would need to acquire, individual compensation, and community benefits. Commenters in Morgan Hill were also concerned about HSR's potential impact on cross-town traffic (especially on Main and Dunne Avenues) and wanted to know how the Authority planned on mitigating east-west congestion.

## 10 RATIONALE FOR ADDING ALTERNATIVE 4

As described in Chapter 1, the purpose of this addendum is to document the basis for adding design options in three subsections—collectively constituting a new Alternative 4—for detailed analysis in the San Jose to Merced Project Section EIR/EIS. Specifically, the evaluation of the alternatives set out in this addendum takes into account a number of factors, including the effects on environmental and community resources and the feasibility of the different approaches.<sup>3</sup> This chapter summarizes the outcomes of the evaluation.

### 10.1 Revisions by Subsection for Alternative 4

The following paragraphs summarize the changes associated with Alternative 4, the rationale for adding the design change, and some of the distinguishing factors by resource. Table 10-1 shows a summary comparison of impacts by resource and alternative.

#### 10.1.1 San Jose Diridon Station Approach

The Blended, At-Grade design option was added in response to the Authority’s 2018 Business Plan and input received from the public about developing an at-grade station at San Jose Diridon and staying within the existing railroad right-of way. The new design option would reduce the extent of impacts on parks and Important Farmland and would result in far fewer residential and business displacements than Alternatives 1, 2, and 3.

#### 10.1.2 Monterey Corridor

The Blended, At-Grade design option was added in response to the Authority’s 2018 Business Plan and input received from the public about staying within the existing railroad right-of-way. This design option would reduce effects on several protected species, including California red-legged frog, Swainson’s hawk, and tricolored blackbird. The relatively smaller project footprint would displace fewer residential and business units than Alternatives 1, 2, and 3.

#### 10.1.3 Morgan Hill and Gilroy

The Blended, At-Grade to Downtown Gilroy design option was added in response to the Authority’s 2018 Business Plan and input received from the public about staying within the existing railroad right-of-way. This design option would avoid impacts on undeveloped land by siting the HSR station in downtown Gilroy. This design option would also reduce the extent of impacts on parks and Important Farmland. It would also result in fewer residential and business displacements than Alternatives 1, 2, and 3.

As indicated previously, Alternative 4 also includes the Pacheco Pass and San Joaquin Valley Subsections, which are in the same alignment and have the same design profile for all four alternatives. There are no distinguishing factors among alternatives in these two subsections.

### 10.2 Alternatives Identified for Analysis in the EIR/EIS

The USACE and USEPA concurred with the range of alternatives presented in the 2017 Checkpoint B Addendum 3 (Authority and FRA 2017), resulting in carrying forward three end-to-end alternatives for further evaluation. This addendum introduces new design options have been assembled into a fourth alternative, which will also be evaluated in the project EIR/EIS. The alternatives identified in this section would connect to the alternatives the Authority and FRA are analyzing in the *Merced to Fresno Section: Central Valley Wye Supplemental EIR/EIS* and the *San Francisco to San Jose Project Section EIR/EIS*, both of which are currently in development.

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<sup>3</sup> Operations and maintenance activities will generally be similar across all alternatives. The primary driver of variation in operations and maintenance activities for different alternatives and alternative elements is the profile used because maintenance activities correspond to the nature of the profile constructed. However, because all operations and maintenance activity would occur within the permanent right-of-way, operations and maintenance would not generate substantial effects on adjacent properties.

Each of the four end-to-end alternatives reflects to an organizing theme intended to balance primary HSR project delivery and operating objectives with natural, community, and cultural resource considerations and stakeholder input:

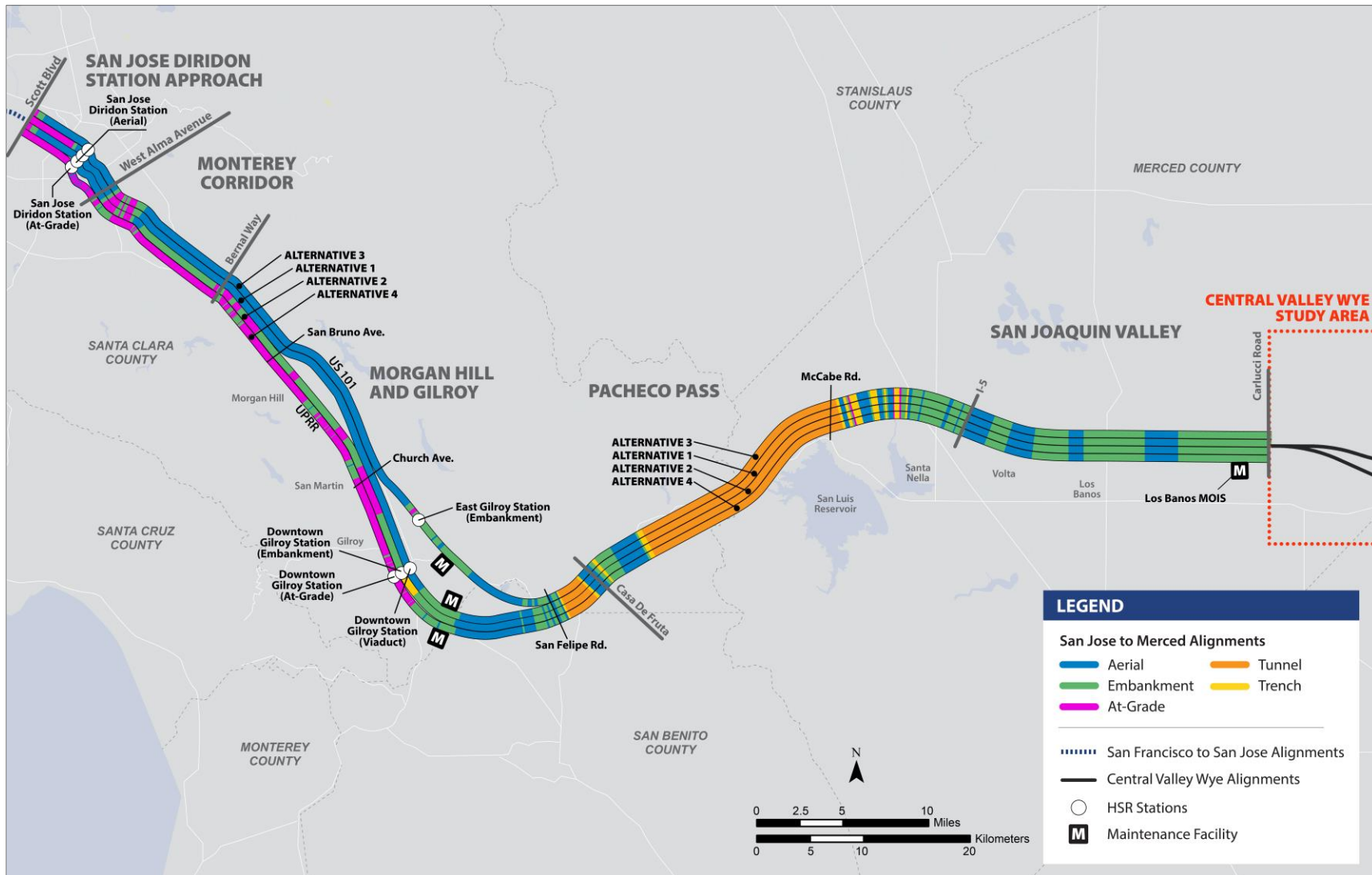
- Alternative 1 combines design options that are responsive to stakeholder input with the least footprint required for a fully dedicated HSR system.
- Alternative 2 combines design options that most closely correspond to the preferred project of the program-level analysis: the Refined Program Alignment.
- Alternative 3 minimizes encroachment and acquisition of UPRR right-of-way.
- Alternative 4 implements the vision of the Authority's 2018 Business Plan, combines design options that are responsive to stakeholder input, and utilizes to the greatest extent existing railroad right-of-way.

Table 10-1 shows how the design options analyzed in this report are assembled into four end-to-end alternatives for analysis in the EIR/EIS and other environmental documentation. Figure 10-1 illustrates the end-to-end alternatives.

**Table 10-1 Alternatives Identified for Analysis in the EIR/EIS**

Subsection/Design Option	Alt. 1	Alt. 2	Alt. 3	Alt. 4
<b>San Jose Diridon Station Approach</b>				
Aerial to Scott Boulevard		✓	✓	
Aerial to I-880	✓			
Blended				✓
<b>Monterey Corridor</b>				
Viaduct	✓		✓	
At-Grade		✓		
Blended				✓
<b>Morgan Hill and Gilroy</b>				
East of UPRR through Downtown Gilroy (embankment)		✓		
Monterey Highway Median Viaduct and Morgan Hill—US 101 to Low Viaduct Downtown Gilroy Station (aerial)	✓			
Monterey Highway Median Viaduct and Morgan Hill—US 101 to East Gilroy Station (embankment)			✓	
Blended to Downtown Gilroy				✓
<b>Pacheco Pass</b>				
Tunnel	✓	✓	✓	✓
<b>San Joaquin Valley</b>				
Henry Miller Road	✓	✓	✓	✓
<b>Maintenance Facilities</b>				
East Gilroy "C"			✓	
South Gilroy "D"	✓	✓		✓

Source: Compiled by ICF 2018



Source: Authority 2017

Note: The vertical profiles of the end-to-end alignments are described in Chapter 2, Alternatives, of the San Jose to Merced Draft EIR/EIS.

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**Figure 10-1 End-to-End Alternatives to be Analyzed in the EIR/EIS**



Table 10-2 shows a comparison of the alternatives' environmental and community impacts. Although this document focuses primarily on the differences associated with Alternative 4 in the San Jose Diridon Station Approach, Monterey Corridor, and Morgan Hill and Gilroy Subsections, for purposes of end-to-end alternative comparisons, this table includes impacts on environmental and community resources in the Pacheco Pass and San Joaquin Valley Subsections.

**Table 10-2 Environmental and Community Impacts by Alternative**

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
<b>Aquatic Resources (acres)</b>				
<b>Wetlands</b>				
Freshwater emergent wetland	50.7	50.9	54.1	51.9
Freshwater forested/shrub wetlands	9.0	9.1	7.2	8.9
<b>Non-Wetland Waters</b>				
Riverine/channel	48.4	49.4	46.1	49.7
Freshwater pond	4.0	4.1	2.5	4.1
Lake/reservoir	0.4	0.1	0.4	–
<i>Total aquatic resources impacts</i>	112.5	113.6	110.3	114.6
<b>Biological Resources (acres)</b>				
<b>Listed Wildlife Species</b>				
California-legged frog red (FT)	2,747.5	3,351	2,669.1	2,455.0
California tiger salamander (FT)	1,203.9	1,312.9	1,260	1,373.1
Least Bell's vireo (FE, SE)	42.2	42.8	35.8	30.9
Swainson's hawk (ST)	1,801.5	2,057.3	1,801.6	1,740.2
Tricolored blackbird (CT)	1,356.4	1,368.3	1,467.5	1,126.4
Steelhead—Central Valley DPS South-Central California Coast DPS (FT)	69	72.3	79	65.3
Bay checkerspot butterfly (FT)	9.1	17.3	9.1	23.3
Conservancy fairy shrimp (FE)	30.9	30.9	30.9	30.9
Longhorn fairy shrimp (FE)	30.9	30.9	30.9	30.9
Vernal pool fairy shrimp (FT)	30.9	30.9	30.9	30.9
Vernal pool tadpole shrimp (FE)	30.9	30.9	30.9	30.9
San Joaquin kit fox (FE, ST)	2,746.5	2,746.5	2,649.2	2,741.8
Blunt-nosed leopard lizard (FE, SE)	72.9	72.9	72.9	72.9
Giant garter snake (FT, ST)	395.6	395.6	395.6	395.6
<b>Listed Plant Species</b>				
Colusa grass (FT, SE)	30.9	30.9	30.9	30.9
Hoover's spurge (FT)	30.9	30.9	30.9	30.9
Metcalf Canyon jewelflower (FE)	13.2	19.5	13.2	26.7

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Palmate-bracted bird's-beak (FE, SE)	2.8	2.8	2.8	2.8
Santa Clara Valley dudleya (FE)	11	17.3	11	10.6
<b>Other Environmental Resources</b>				
<b>Important Farmland (acres)</b>				
Prime Farmland	945	1,024.7	1,030.9	785.9
Farmland of Statewide Importance	345	377.1	384	344.6
Unique Farmland	92.2	98.1	84.5	90.1
Farmland of Local Importance	224.9	352.4	296.5	213.7
<i>Total important farmland impacts</i>	1,607.1	1,852.3	1,795.9	1,434.3
<b>Cultural Resources (units)</b>				
Archaeological	12	14	14	20
Built historic	32	37	31	31
<b>Parks, Recreation, and Conservation Areas (units/acres)</b>				
<i>Total Parks, Recreation, and Conservation Areas</i>	4/12.1	7/21.7	8/74.4	9/9.4
<b>FEMA Flood Zone Hazard (acres)</b>				
<i>Total Flood Hazard Zones</i>	953.3	1,074.9	884.5	627.1
<b>Community Resources</b>				
<b>Displacements (units)</b>				
Residential	344	395	353	68
Business	338	436	290	123
<i>Total Displacements</i>	682	831	643	191

Source: Compiled by ICF 2017 and 2018  
 FE = listed as endangered under the FESA  
 FT = listed as threatened under the FESA  
 CT = candidate for listing as threatened under FESA  
 SE = Listed as endangered under the CESA  
 ST = Listed as threatened under the CESA  
 DPS = distinct population segment  
 FEMA = Federal Emergency Management Agency



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## 12 LIST OF PREPARERS AND REVIEWERS

Project Role	Name, Credential	Qualifications
Environmental Project Director	Rich Walter	25 years of experience M.A., International Relations/Energy, Environment, Science, and Technology, The John Hopkins University School for Advanced International Relations, 1993
Environmental Project Manager	Kim Avila	27 years of experience M.A., International and Public Affairs, Columbia University, 1990. B.A., Government, Harvard University, 1988 N.D., Demographics, University of Edinburgh, 1986–1987
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Senior Biological Resources Reviewer	Brad Schafer	18 years of experience B.S., Biology, Western Illinois University, Macomb, Illinois, 1995
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