

17 STANDARD RESPONSES

17.1 Introduction

During California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) circulation of the Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) in 2020, the California High-Speed Rail Authority (Authority) received 747 written comment submissions and verbal comments, containing 4,889 individual comments. During the circulation of the Revised/Supplemental Draft EIR/EIS in 2021, the Authority received 16 comment submissions containing 226 discrete comments. Many of the comments received during these public comment periods raised similar issues about the project and its environmental impacts. The Authority has therefore prepared a chapter of standard responses to address the most frequently raised issues.

The standard responses in this chapter provide a comprehensive response to an issue so that multiple aspects of the same issue are addressed in an organized manner in one location. This reduces any repetition of responses. When an individual comment raises an issue discussed in a standard response, the response to the individual comment includes a cross reference to the appropriate standard response.

17.2 General Standard Responses

17.2.1 SJM-Response-GEN-1: Opposition and Comments on the Merits of the Project

Multiple commenters expressed general opposition to the project and to high-speed rail (HSR) in California. Several comments were on the merits of the project and commenters expressed that the project was unnecessary and should not be pursued due to the cost of the project or lack of funding. Many comments expressed general concern regarding the possible impacts on a variety of resource topics, including impacts on their communities, agriculture, fish and wildlife, and geology and seismicity. Commenters expressed confusion and concern that the project is not the same project that was previously voted on under Proposition 1A, that there is not a need for the project, or that there are better options, including transportation options other than rail or alternative rail technologies. Several commenters suggested that the current global pandemic has changed the circumstances and, with a large portion of the population working remotely, the Purpose and Need of the HSR is no longer clear.

These comments present opinions on the project. CEQA and NEPA require a Final EIR and EIS to respond to the responsible comments received on environmental issues (see 14 California Code of Regulations [Cal. Code Regs.] § 15088(a) and FRA Procedures for Considering Environmental Impacts 14(s)). These comments do not address an environmental issue but have been included in the project's administrative record. Information regarding the primary concerns expressed in these comments is provided below.

Purpose and Need

As discussed in Section 1.2, Purpose of and Need for the High-Speed Rail System and the San Jose to Merced Project Section, of this Final EIR/EIS, California's population is growing rapidly and, unless new transportation solutions are identified and implemented, traffic conditions will only become more congested and delays will continue to increase. The proposed HSR system would provide lower passenger costs than air travel for the same city-to-city markets and offer service that would be competitive with automobile travel. It would increase mobility while reducing air pollution, decreasing dependence on fossil fuels, protecting the environment by reducing greenhouse gas (GHG) emissions, and promoting sustainable development in the areas near the stations compared with existing trends. By improving connectivity, the HSR system would boost California's productivity and enhance the economy. Please refer to Section 1.2.1, Purpose of the High-Speed Rail System; Section 1.2.2, Purpose of the San Jose to Merced Project Section; and Section 1.2.4, Statewide and Regional Need for the High-Speed Rail System in the San Jose to Merced Project Section Area.

Despite the dramatic reduction in transit and inter-city train travel since March 2020 due to the pandemic, the Authority is confident that the ridership forecasts for the California High-Speed Rail System discussed in Section 2.7.1, Travel Demand and Ridership Forecasts, remain valid for use in the EIR/EIS due to population growth and the consequent increase in traffic congestion, and the anticipated short-term nature of the effects of the pandemic on transit and inter-city train travel. The experience of BART, Caltrain's Peninsular Corridor, and Amtrak's Capitol Corridor routes during prior economic recessions suggests that transit and inter-city train ridership will recover in time commensurate with employment gains and lower unemployment levels. Although the current pandemic has had a dramatic effect on public transit and railway ridership in the near term, the Authority does not anticipate that COVID-19 will significantly affect the need for, or travel demand associated with, the HSR system. With severe constraints for expansion of the existing transportation system, the demand for HSR train service will remain long-term despite the near-term effects of the COVID-19 pandemic on the transportation system. Therefore, the ridership projections used by the Authority remain valid for the purpose and need of the project and the analysis of the project's anticipated impacts and benefits, and it would be speculative to revise the projections for purposes of the Draft EIR/EIS analysis based on recent near-term transit and railway ridership levels.

Project Costs and Funding

It is anticipated that the HSR project will be financed through a combination of federal, state, and private funds. To date, the Authority has secured funding through a combination of federal, state, and private funding, including: Federal Railroad Administration (FRA) High-Speed Intercity Passenger Rail Program; California's Proposition 1A, the Safe, Reliable High-Speed Passenger Train Bond Act (Prop 1A), adopted by state voters in November 2008; and proceeds from California's Cap-and-Trade Program. *Cap-and-trade* refers to the market-based mechanism established by the California Air Resources Board for achieving the GHG reduction requirements in Assembly Bill (AB) 32. Please refer to Section 1.1.3.1, California State Legislation and Funding, of the Draft EIR/EIS and the 2020 Business Plan (Authority 2021, as cited in Chapter 1, Project Purpose, Need, and Objectives, of the Final EIR/EIS), Chapter 4: Costs and Funding to Deliver the Phase 1 System, for more detailed information regarding current availability of funding and potential options for future funding. Of the funding projected to be available for the HSR system, the State of California is providing the majority of the contributions. However, consistent with the original intentions of Prop 1A, the Authority continues to look for opportunities to involve private funding in the California HSR System.

HSR systems around the world cover their own operating costs through revenues, which is a key reason why 13 nations have built almost 10,000 miles of HSR lines in the last few decades and why 24 countries are planning and building another 16,000 miles. The financial analysis of the California system, described in the 2018 Business Plan (Authority 2018a, as cited in Chapter 1 of the Draft EIR/EIS) and the 2020 Business Plan (Authority 2021, as cited in Chapter 1 of the Final EIR/EIS), demonstrates that ridership and revenues would cover the cost of operating the system, meaning that no operational subsidy would be required.

Proposition 1A

Prop 1A found that construction of an HSR passenger system to serve the major metropolitan areas was imperative for California. As described in Section 1.1.3.1, California State Legislation and Funding, of the Draft EIR/EIS, California voters approved Prop 1A in November 2008, making \$9.95 billion in bond funds available to the Authority for initiating construction of the HSR system. As described on page 2 of the 2020 Business Plan (Authority 2021, as cited in Chapter 1 of the Final EIR/EIS), the Prop 1A bond measure provided 20 percent of the project cost as estimated in 2008. The expectation was that the state would match the bond funds with other funding such as state, local, federal, and private. Between 2008 and 2020, those bond funds were matched. As explained in the 2020 Business Plan, the amount of funding is not currently enough to complete Phase 1 of the HSR project in its entirety, but it is sufficient to advance the mission of Prop 1A (Authority 2021, as cited in Chapter 1 of the Final EIR/EIS). The HSR program continues to strive to be consistent with the original intent of Prop 1A.

All the San Jose to Merced project alternatives were designed to conform to the Prop 1A directive to maximize use of existing transportation corridors. As explained in the 2013 Checkpoint B Summary Report, the HSR system “must meet California’s need for reliable, high-speed, lower emissions transit in a manner that is consistent with provisions of Proposition 1A” (Authority and FRA 2013, as cited in Chapter 8, Preferred Alternative, of the Draft EIR/EIS). Consistency with the requirements of Prop 1A was used as a primary criterion for excluding alternatives from further consideration. In order to meet the project’s purpose and need and be considered for further analysis in the Draft EIR/EIS, an alternative had to deliver predictable and consistent travel times, follow existing transportation or utility corridors to the extent feasible to reduce impacts on communities and the environment, and be financially viable. All four of the alternatives analyzed in the EIR/EIS are consistent with the requirements and mission of Prop 1A.

Alternate Transportation Technologies

Regarding comments that suggest other modes of transportation or technologies, the Authority has considered these in earlier analyses. As described in the Executive Summary; Chapter 1, Project Purpose, Need, and Objectives; and Chapter 2, Alternatives, the Authority and the FRA previously decided to use a tiered environmental review process and prepared the *Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System (Statewide Program EIR/EIS)* in 2005 (Authority and FRA 2005, as cited in the Executive Summary of the Draft EIR/EIS). The Statewide Program EIR/EIS analyzed the impacts of implementing the 800-mile Statewide HSR System and compared those impacts with the impacts of a No Project Alternative and an alternative of improving airports and freeways to meet the state’s future transportation needs. The HSR alternative included consideration of different train technologies/vehicle types, as well as different broad alignment corridors and station locations. The purpose of the analysis was to support broad policy decisions on whether to pursue a high-speed train system, what type, and where. At the conclusion of the Tier 1 environmental review process, the agencies made the following first-tier decisions:

- Selection of transportation option—Selected the HSR alternative over modal alternative (expanded airports and freeways) and the No Project Alternative (do nothing) to serve California’s growing transportation needs
- Selection of train technology—Selected very high speed, electrified steel wheel on steel rail technology over magnetic levitation, lower speed, electrified steel wheel on steel rail; and lower speed diesel (non-electrified) steel wheel on steel rail
- Selection of preferred alignment corridors—Selected preferred alignment corridors for most of the statewide system to be studied in more detail in second-tier EIR/EISs
- Selection of preferred station locations—Selected station locations along the preferred alignment corridors to be studied in more detail in second-tier EIR/EISs
- Adoption of mitigation strategies—Adopted broad mitigation strategies to be refined and applied at the second tier, as part of project planning and development and environmental review

These decisions were not subject to legal challenge (FRA 2005, as cited in Chapter 1 of the Draft EIR/EIS; Authority 2005, as cited in Chapter 1 of the Draft EIR/EIS).

As explained in Section 1.2.4.1, Travel Demand and Capacity Constraints, of the Draft EIR/EIS, the fastest-growing mode of transit for intercity trips is conventional rail, and, without HSR, the automobile would continue to account for the greatest share of long-distance intercity travel. Because of existing constraints to expanding the large hub airports in Southern California, high-speed ground travel modes will be needed to alleviate the growing demand and airport capacity constraints. The HSR system would provide an intercity travel option with frequent, reliable service and competitive fares for growing populations.

The objectives of the proposed HSR system include providing an interface with major commercial airports, mass transit, and the highway network. The baseline for the analysis in the Draft EIR/EIS

assumes the completion of the Caltrain Peninsula Corridor Electrification Project from Scott Boulevard in Santa Clara to Tamien Station in San Jose. As described in Section 1.4.1, Caltrain Modernization Program, the Caltrain Modernization Program will electrify and upgrade the performance, operating efficiency, capacity, safety, and reliability of Caltrain's commuter rail service through the delivery of several key projects. These include the electrification of the existing Caltrain corridor from San Francisco to San Jose; the installation of a Communications Based Overlay Signal System positive train control (PTC), which is an advanced signal system that includes federally mandated safety improvements; upgrades to the signal system; and the replacement of Caltrain's diesel trains with high-performance electric trains or Electric Multiple Units (Caltrain 2018, as cited in Chapter 1 of the Draft EIR/EIS). The Caltrain electrification is scheduled to be completed in 2022.

As described in Chapter 1, the net in-commuting between the San Francisco Bay Area (Bay Area) counties and other areas is estimated to grow by up to 53,000 workers between 2010 and 2040, and, without the HSR system, the automobile will continue to account for the greatest share of long-distance intercity travel. Some commenters were concerned that the HSR system would just be another diesel train. The HSR system in California will run entirely on electricity generated from renewable sources. The HSR trains would not run on diesel engines. Not only will the trains use 100 percent renewable energy, but the stations and maintenance facilities have been designed to be sustainable (Authority 2020a).

Regarding comments that assert HSR is a waste of money and that California should be investing in other means of transportation, there are no other transportation options that can provide the same capacity as HSR for statewide travel. As presented in the Authority's Fact Sheet on Construction, the state would need "4,300 new highway lane miles, 115 additional airport gates, 4 new airport runways costing more than \$158 billion with a 50-year maintenance cost of more than \$132.8 billion" to provide the same capacity as HSR from San Francisco to Los Angeles (Authority 2020b).

Coronavirus

California Governor Gavin Newsom announced directives to address the need to slow the spread of novel coronavirus (COVID-19) in California (and globally) by prohibiting gatherings of any size. In addition, Governor Newsom issued Executive Order N-33-20, which ordered all individuals living in the state of California to stay home or at their place of residence, except under limited circumstances, such as for an essential job or to shop for essential purposes. The Authority recognizes the severity of the current global health crisis and the challenges COVID-19 is presenting in California. Work in the transportation sector was identified as one of the 16 critical infrastructure sectors based on California's Executive Order N-33-20 that was allowed to continue operations under the governor's order. For that reason, the Authority has continued work on the environmental reviews and construction of certain HSR segments during this State of Emergency. Effective June 15, 2021, the Governor issued a new public health order that supersedes all prior health orders. This order established restrictions related to masking and mega-events and ended restrictions related to physical distancing, capacity limits on businesses, and county risk-level tier system.

Communities

Regarding comments that express general concern about impacts on their communities, the San Jose to Merced Project Section alternatives are either within or in proximity to the following cities and communities: Santa Clara, San Jose, South San Jose, Morgan Hill, San Martin, Gilroy, Santa Nella, Volta, Los Banos, and unincorporated areas of San Benito County, Santa Clara County, and Merced County. The alignments of all four alternatives generally follow existing transportation corridors and would not represent new divisions of existing communities or neighborhoods. Construction of the project would disrupt access to residences, businesses, and community and public facilities and would have localized transportation, noise and vibration, safety and security, and visual quality impacts. Section 3.12.6.2, Disruption or Division of Existing Communities, of the Draft EIR/EIS provides an analysis of temporary and permanent impacts on communities from construction and operation of the project. This analysis includes impacts related to noise and

vibration; transportation; safety and security; parks, recreational facilities, and open space; and aesthetics and visual quality. The Authority understands that these impacts are of particular concern to commenters. Each of these topics is analyzed in detail in their respective sections within the Draft EIR/EIS, and the Authority has identified mitigation measures to avoid, reduce, or compensate for impacts. The comparative differences among the four alternatives with respect to community division and the displacement of residences and business are described in Section 3.12, Socioeconomics and Communities.

Agriculture

Regarding comments that expressed general concern for the agricultural resources in the project area, please refer to Section 3.14, Agricultural Farmland, of the Draft EIR/EIS for a detailed analysis of impacts on agriculture and farming. The Authority is committed to working with local, state, and federal agencies as well as local stakeholders to develop an HSR system that preserves the open spaces and environmental resources, such as agricultural farmland, that make California golden. On November 15, 2012, the Authority Board of Directors approved an agreement with the California Department of Conservation regarding an agricultural preservation process. This agreement established a process to identify suitable agricultural land for mitigation of project impacts and fund the purchase of agricultural conservation easements from willing participants. On November 25, 2014, the Department of Conservation and the Authority announced that they would begin soliciting farmland mitigation proposals. To learn more about this program, please visit the Department of Conservation's Agricultural Land Mitigation Program webpage: <https://www.conservation.ca.gov/dlrp/grant-programs/mitigation/>. With the help of the Department of Conservation, the Authority has protected more than 1,200 acres of program-wide agricultural lands to date.

Fish and Wildlife

Regarding comments that expressed general concern about impacts on fish and wildlife, please refer to Section 3.7, Biological and Aquatic Resources, of the Draft EIR/EIS for a detailed analysis of impacts on fish and wildlife. All of the project alternatives have both direct and indirect effects on wildlife habitat as well as associated special-status species of plants and wildlife. Construction-related effects would occur during site preparation and HSR system construction. Construction and operations effects would occur because of runoff, noise, light, motion, and/or startle effects. The Draft EIR/EIS includes mitigation for impacts on plant and wildlife habitat, which may include off-site habitat restoration, enhancement, and preservation; the implementation of management and monitoring plans; the purchase of credits from one or more agency-approved mitigation banks; or in-lieu fee contributions, to compensate for impacts from construction or operations of the preferred alternative. The Draft EIR/EIS also includes mitigation to address temporary and permanent impacts on wildlife movement corridors.

Seismicity

Regarding comments about the risk of seismic events, the HSR system project design includes several components that minimize the effects of seismic events and the potential safety risks from seismic events. These include a train control system with earthquake early warning detection systems; operational responses to notification of a seismic event including stopping or slowing of trains and inspection of infrastructure; infrastructure design that will prevent structural collapse in the event of a significant seismic event; and rolling stock and infrastructure design elements that keep trains upright and in line in the event of a derailment, such as containment parapets and guard rails, on each side of the trackway. These types of project features would prevent HSR trains from leaving the HSR right-of-way in the rare event of derailment resulting from a seismic event and minimize safety risks (Authority 2014; www.railway-technology.com 2011).

The Authority understands that there are risks associated with undergoing construction in a seismically active location. The project section would be constructed in compliance with building code requirements for application of engineering design features to address and minimize these risks. These risks and impacts are analyzed in detail in Section 3.9, Geology, Soils, Seismicity and Paleontological Resources. The project design incorporates impact avoidance and

minimization features (IAMF) such as the preparation of a Construction Management Plan that requires a topographic survey and an assessment of geotechnical conditions prior to construction. Other features set specific standards that the project must comply with to promote safety during construction and operations. Because of the effectiveness of these design features, there would be no significant impacts on geology, soils, seismicity, or paleontological resources under CEQA under any of the project alternatives.

17.2.2 SJM-Response-GEN-2: Consideration of Diridon Integrated Station Concept and the Google Development at the San Jose Diridon Station

Commenters questioned why proposed projects such as the Diridon Integrated Station Concept (DISC) and the Google campus expansion were not included or considered in the baseline or cumulative analysis of the San Jose Diridon Station area.

The San Jose Diridon Station is a focal point for a complex and dynamic set of land use planning processes, undertaken by different entities and proceeding on independent timetables. Comments questioned why the DISC or the Google Downtown West Mixed-Use Project (Google Project) were not being considered as part of the baseline or as part of the cumulative analysis. These are separately reviewed below.

The Authority intends to work both with the DISC partner agencies (regarding advancing DISC) and the City of San Jose and Google (regarding the Google Project) to seek feasible ways to advance the independent pieces of the San Jose Diridon Station land use planning puzzle: the HSR project, DISC, and the Google Project.

Separate Projects

DISC and the Google Project will be or are being considered through distinct and separate planning and environmental review processes.

The DISC agency partners have agreed to a separate environmental clearance for the DISC project. The Google Project has completed environmental review and was approved by the City of San Jose in May 2021. The HSR project would not preclude the implementation of either of these separate projects overall, although some of the proposed development included in the Google Project could not be realized with HSR Alternatives 1, 2, and 3 where the permanent footprint for these alternatives crosses through proposed development areas. Alternatives 1, 2, and 3 include permanent footprint overlaps with the footprint of the Google Project north of Diridon Station due to the aerial viaduct, and south of the Diridon Station due to proposed replacement parking area and the aerial viaduct alignment. The permanent footprint of Alternative 4 (the Preferred Alternative) only has limited overlap with the Google Project related to the alignment of the DDV and the replacement parking area (both in the SAP Center parking lot) and some road right of way along Stover and Candall St. for circulation modifications. The Authority is one of the DISC agency partners and is committed to working with both the DISC agency partners and with Google to find mutually agreeable solutions to allow all three projects to be implemented.

As stated in Draft EIR/EIS Section 2.1, Introduction, the DISC is a separate ongoing multiagency planning process. Decisions about future changes to the San Jose Diridon Station and the surrounding Caltrain-owned rail infrastructure and corridor are the subject of multiple planning and agreement processes; DISC planning is proceeding independently of the environmental process for the HSR project. The Authority is involved in the DISC planning process along with the City of San Jose, Santa Clara Valley Transportation Authority (VTA), and Caltrain (referred to as the DISC partner agencies). Discussions between the DISC partner agencies have identified that the DISC Concept Plan will be planned, environmentally reviewed, and approved separately from the HSR project, the Bay Area Rapid Transit (BART) extension, and the Google development plans. A DISC concept layout was developed in 2019 and was accepted by the City of San Jose, Authority, and Caltrain in February 2020. Preliminary design of the DISC concept layout is necessary before environmental review can commence.

The DISC planning effort seeks to address the needs of the City of San Jose, BART, VTA, Caltrain, Capitol Corridor, Altamont Corridor Express (ACE), and Amtrak, as well as local development adjacent to the station. The DISC planning effort seeks to primarily address the station and its interface with surrounding land use, including tracks and platform configuration, station location and layout, access to the station by various transportation modes (such as walking and bus), connection from adjacent land use, and passenger flows to, from, and through the station. In contrast, the HSR project, as defined in the Draft EIR/EIS, is intended to only address the extension of HSR service to San Jose, including the San Jose Diridon Station. As such, DISC is not necessary to achieve the purpose and need or the goals and objectives of the HSR project and will include infrastructure and improvements beyond those needed for the HSR project. This is the primary reason that DISC is part of a separate planning process from the HSR project. As the Authority is one of the DISC partner agencies, the DISC can be planned in such a way that HSR service to the San Jose Diridon Station can be accommodated. The DISC may differ from the station design included in the Draft EIR/EIS. The environmental consequences of implementing DISC, including any changes to the HSR project, will be analyzed and disclosed in a subsequent environmental review process (as well as any applicable review conducted by the Authority).

The Google Project is a proposal to redevelop approximately 80 acres of land adjacent to the San Jose Diridon Station, including 6.5 million to 7.4 million square feet of office space; 3,000 to 5,900 units of housing; 300,000 to 500,000 square feet of active uses (e.g., retail, cultural, arts); 100,000 square feet of event space, hotel use, and limited-term corporate accommodations; infrastructure; utilities; and public space. The project has completed environmental review and was approved by the City of San Jose in May 2021.

Baseline Analysis for the HSR Project

Under NEPA, the effects of a federal action are compared to the No Action Alternative, which is defined as the conditions extant in absence of the proposed federal action (see 40 Code of Federal Regulations [C.F.R.] § 1502.14).¹ The HSR project includes a proposed federal action due to federal funding for the HSR project overall. The No Action Alternative is meant to provide a baseline against which the action alternative is evaluated. The baseline reflected in the No Action Alternative documents current conditions and the existing environment.

Under CEQA (per CEQA Guidelines Section 15125), the existing environmental setting, at the time of the Notice of Preparation, normally constitutes the baseline physical conditions by which a lead agency determines whether an impact is significant. Where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project's impacts, a lead agency may define existing conditions by referencing historical conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence. In addition, a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence. A lead agency may use a projected future conditions (beyond the date of project operations) baseline as the sole baseline for analysis only if it demonstrates with substantial evidence that use of existing conditions would be either misleading or without informative value to decision makers and the public. Use of projected future conditions as the only baseline must be supported by reliable projections based on substantial evidence in the record. An existing conditions baseline will not include hypothetical conditions, such as those that might be allowed, but have never actually occurred, under existing permits or plans, as the baseline.

¹ The Council on Environmental Quality (CEQ) issued new regulations, effective September 14, 2020, updating the NEPA implementing procedures at 40 C.F.R. §§ 1500–1508. However, because this project initiated the NEPA process before September 14, 2020, it is not subject to the new regulations. The Authority is relying on the regulations as they existed prior to September 14, 2020. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations, pursuant to 40 C.F.R. § 1506.13 (2020) and the preamble at 85 *Federal Register* [Fed. Reg.] 43340.

Neither the DISC nor the Google Project was considered as part of the environmental baseline for the HSR project because neither project has been constructed yet and thus they do not reflect existing conditions in and adjacent to the Diridon Station. Neither project had been approved by the relevant agencies at the time the environmental analysis was completed for the Draft EIR/EIS (between 2016 and early 2020).

While a conceptual layout has been developed for DISC (as of 2021), there is substantial additional work necessary that must be completed in order to commence with the environmental review. Since DISC is not yet approved or constructed, it does not comprise the environmental baseline for the environmental analysis of the HSR project. Since the Google project had not yet commenced with construction, it does not comprise the environmental baseline for the environmental analysis of the HSR project.

Cumulative Analysis for the HSR Project

Since the DISC is still a concept under development and lacks sufficient detailed design or environmental analysis, it would be premature to consider DISC in the cumulative analysis for the HSR project.

The cumulative analysis in the Final EIR/EIS has been updated with additional information available due to the October 2020 release of the Draft EIR, the May 2021 release of the Final EIR, and the May 2021 approval of the Google Project. The Draft EIR/EIS for the HSR project included potential buildout of the Diridon Station Area Plan and thus already reflected cumulative impacts of land use development around the San Jose Diridon Station in combination with the HSR project. Additional information from the October 2020 Draft EIR and May 2021 Final EIR for the Google Project has been included in the Final EIR/EIS for the HSR project to provide a description of details concerning the shape of the proposed development around the San Jose Diridon Station and the nature of cumulative impacts. Because the Draft EIR/EIS already considered potential development pursuant to the Diridon Station Area Plan, the addition of further details concerning the Google Project, while elucidating some further specifics on potential cumulative impacts, has not identified new significant or substantially higher impacts of the HSR project.

17.2.3 SJM-Response-GEN-3: Consideration of Caltrain Business Plan, Including the 2040 Caltrain Service Vision

Commenters expressed concern and questioned why the Draft EIR/EIS does not analyze the impact of the HSR project on the Caltrain Business Plan, including the 2040 Caltrain Service Vision.

The Peninsula Corridor Joint Powers Board (PCJPB), which is the agency that is responsible for Caltrain, engaged in a planning process from 2018 to 2020 to develop a Caltrain Business Plan, including defining a long-term vision (the 2040 Caltrain Service Vision; hereafter the “Caltrain Service Vision”). The Caltrain Business Plan identifies the funding and implementation steps to realize the long-term vision.

The Authority supports expanded and improved Caltrain service and has worked and will continue to work with Caltrain to support the incremental service improvements over time while accommodating the HSR service within the Caltrain corridor previously agreed upon between Caltrain, other transportation agencies, and the Authority. The development of the Caltrain Business Plan is a separate planning process necessary to achieve Caltrain’s long-term goals but is not necessary to achieve the goals of the HSR project. As explained below, the Caltrain Business Plan does not represent an approved and fully funded “project” and thus does not constitute the baseline conditions for environmental impact analysis for the HSR project. In addition, the specific physical improvements associated with the Caltrain Business Plan have not yet been designed and thus there is insufficient detail to include them in the cumulative analysis for the Draft EIR/EIS.

Separate Planning Process from HSR

The Caltrain Business Plan (including the Caltrain Service Vision) seeks to provide increased Caltrain service per peak hour per direction (pphpd) beyond the five trains pphpd at present and up to six trains pphpd after completion of the Peninsula Corridor Electrification Project. The Authority and the PCJPB, along with seven other transportation agencies, agreed in 2012 to implement blended service along the Caltrain corridor to include up to six Caltrain trains pphpd and up to four HSR trains pphpd. The Authority has also provided substantial funding (\$713 million) for implementation of the Peninsula Corridor Electrification Project, which is part of the agreements between the Authority, the PCJPB, and other transportation agencies. As it is a signatory to that agreement, Caltrain is obligated to accommodate the agreed-upon HSR service plan going forward, and this is recognized in the Caltrain Service Vision. Caltrain has also recognized the HSR service plan in the Caltrain Service Vision.

The Caltrain Service Vision includes 8 trains pphpd for 2020 between Tamien and San Francisco, four trains pphpd between Blossom Hill and Tamien (subject to securing operating rights), two trains pphpd between Gilroy and Blossom Hill (subject to securing operating rights), increase in off-peak and weekend frequencies, and accommodation of HSR and other passenger and rail services in accordance with existing agreements between the PCJPB, the Authority, and other transportation agencies. The Caltrain Service Vision was adopted by the PCJPB in October 2019.

In order to achieve the Caltrain Service Vision, PCJPB has conceptually identified that certain improvements will be required, including grade separations, terminal improvements, rail infrastructure and system updates, station improvement, and fleet upgrades. The total cost of these improvements is estimated as \$23 billion. Operating and maintenance costs would also increase, but the percentage farebox recovery is expected to be similar to existing operations (PCJPB 2019).² At present, the Caltrain Service Vision is not fully funded, but PCJPB is developing 10-year funding plans for the initial development and a funding and revenue strategy for the full Caltrain Service Vision. Environmental review was not completed for the Caltrain Service Vision (as a planning study only, CEQA review was not required).

While the Caltrain Service Vision has been adopted, Caltrain continues to work on the Caltrain Business Plan itself, which is not yet finalized as of October 2021. Current activity includes development of funding plans and strategy; development of an equity, connectivity, recovery, and growth framework; and analysis of connections to other systems and station access options. A sales tax initiative on the November 2020 ballot for Caltrain was approved to establish an ongoing funding source for Caltrain. This sales tax would raise about \$108 million annually for 30 years, which would correspond to \$3.24 billion, compared to the estimated \$23 billion necessary to fully implement the Caltrain Service Vision and the Caltrain Business Plan.

The Caltrain Business Plan is not necessary to achieve the purpose and need/goals and objectives of the HSR project and will include infrastructure and improvements beyond those needed for the HSR project. This is the primary reason that the Caltrain Business Plan is part of a separate planning process from the HSR project and that any improvements to advance the Caltrain Business Plan should be part of PCJPB's separate environmental review. The environmental consequences of PCJPB's implementation of the Caltrain Business Plan will be analyzed and disclosed in a subsequent environmental review process.

HSR Project Would Not Preclude the Caltrain Business Plan/Alternative 4 Would Help to Implement Caltrain Business Plan

The HSR project would not preclude the implementation of improvements necessary to fulfill the Caltrain Business Plan. None of the physical improvements included in the HSR project would preclude any of the improvements conceptually identified as necessary to implement the Caltrain Business Plan (including passing tracks, grade separations, station modifications, or other improvements). While the Caltrain Business Plan is not necessary to achieve the HSR purpose and need, the Authority is considering, as part of Alternative 4 (the Preferred Alternative), to provide dedicated electrified tracks separate from the freight tracks between San Jose and Gilroy

² Similar to farebox recovery prior to the COVID-19 health emergency.

that would allow blended service (including Caltrain electrified service) and would provide capacity for expanded Caltrain service in the future (should Caltrain pursue it). The electrification and expansion of Caltrain service to Gilroy is included as one element in the Caltrain Business Plan. The HSR project alternatives considered in the Draft EIR/EIS would not preclude improvements preliminarily identified for the Caltrain Business Plan. Although some of the Caltrain Business Plan improvements may alter some improvements included in the current HSR project description, the environmental effects of those improvements can (and should) be analyzed in subsequent environmental review for implementation of the Caltrain Business Plan, and the Authority will work with PCJPB to facilitate those improvements (including conducting applicable environmental review of any adjustments to the HSR project) while also providing the agreed-upon HSR service levels.

Baseline for Draft EIR/EIS Analysis

Under NEPA, the effects of a federal action are compared to the No Action Alternative, which is defined as the conditions extant in absence of the proposed federal action (see 40 C.F.R. 1502.14). The No Action Alternative is meant to provide a baseline against which the action alternative is evaluated. The baseline reflected in the No Action Alternative documents current conditions and the existing environment.

Under CEQA (per CEQA Guidelines § 15125), the existing environmental setting, at the time of the Notice of Preparation, normally constitutes the baseline physical conditions by which a lead agency determines whether an impact is significant. Where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project's impacts, a lead agency may define existing conditions by referencing historical conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence. In addition, a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence in the record. A lead agency may use a projected future conditions (beyond the date of project operations) baseline as the sole baseline for analysis only if it demonstrates with substantial evidence that use of existing conditions would be either misleading or without informative value to decision makers and the public. Use of projected future conditions as the only baseline must be supported by reliable projections based on substantial evidence in the record. An existing conditions baseline will not include hypothetical conditions, such as those that might be allowed, but have never actually occurred, under existing permits or plans, as the baseline.

PCJPB's 2015 EIR for the Peninsula Corridor Electrification Project (PCJPB 2015, as cited in Section 3.2, Transportation, of the Draft EIR/EIS) reviewed the environmental consequences for 6 Caltrain trains pphpd. The San Jose to Merced Project Section Draft EIR/EIS (and the San Francisco to San Jose Project Section Draft EIR/EIS [Authority 2020c]) reviewed the environmental consequences of blended service, including 6 Caltrain trains plus 4 HSR trains pphpd. The San Jose to Merced Project Section Draft EIR/EIS evaluated blended service at the level agreed to by PCJPB, the Authority, and other transportation agencies. PCJPB will be responsible for environmental review of any future improvements specifically proposed to advance the Caltrain Business Plan. This approach allows improvements to be environmentally reviewed at the time specific capital projects are identified, designed sufficiently to allow for an adequate environmental analysis, and then to be considered for approval. Each subsequent environmental review must consider the existing conditions and approved projects when considering the impacts of a project under current environmental review. The 2015 Peninsula Corridor Electrification Project EIR did not review the impacts of HSR service at the time, even though there were HSR Business Plans and even though there had been several Program EIR/EISs for the proposed HSR system including in the Bay Area. The 2015 Peninsula Corridor Electrification Project EIR did not consider the HSR project to be part of the baseline because the HSR project had not had its project approval following complete environmental review; because the specific design of the improvements necessary for HSR were not available at the time; and because HSR improvements were not necessary to complete the Caltrain electrification, which has independent utility from the HSR improvements. The San Jose to Merced Project Section

Draft EIR/EIS does not evaluate the impacts of the Caltrain Business Plan (including the Caltrain Service Vision) because the Caltrain Business Plan does not represent an approved “project” and is not fully funded; the specific design of contemplated improvements has not been done; and the Caltrain Business Plan improvements are not necessary to provide HSR service, which has independent utility from the Caltrain Business Plan.

While Caltrain Business Plan development to date has articulated the need for certain improvements, including grade separations, terminal improvements, rail infrastructure and system updates, and station improvement and fleet upgrades, these improvements have not yet been designed or defined in detail sufficiently to support environmental analysis. There is substantial additional work necessary that must be completed in order to commence the environmental review. Since the Caltrain Business Plan is not yet approved, is a planning study, is not funded, and the improvements are not defined in detail, the Caltrain Business Plan does not constitute the environmental baseline for the environmental analysis of the HSR project.

Cumulative Analysis

The Caltrain Business Plan has not been adopted as of October 2021, which was after release of the San Jose to Merced Project Section Draft EIR/EIS. No environmental analysis has been conducted for the Caltrain Business Plan. The specific physical improvements have not yet been designed, and full funding has not been identified yet. As such, the Caltrain Business Plan (including the Caltrain Service Vision) is not “reasonably foreseeable” as defined under NEPA or CEQA, and the information necessary to include them in a specific analysis of the cumulative impacts of the HSR project is not available.

17.3 Alternatives Standard Responses

17.3.1 SJM-Response-ALT-1: Alternatives Selection and Evaluation Process

The Authority received many comments questioning the alternative development process, including alternatives considered and reasons they were not carried forward. Comments were received questioning the methodology used for identifying a preferred alternative. Multiple commenters expressed a preference for one of the alternatives over the others, opposed a particular alternative because of its impacts, or suggested the Authority study other alternatives. The Authority acknowledges such views but, as detailed below, the Authority considered numerous potential alternatives and identified four for detailed study. The Draft EIR/EIS ultimately considered a reasonable range of alternatives.

Alternatives Analysis Process Requirements under CEQA and NEPA

An EIR/EIS is required to analyze the potential impacts of a range of reasonable alternatives (14 Cal. Code Regs. § 15126.6, 40 C.F.R. § 1502.14(a)). Under CEQA, an EIR must describe a range of reasonable alternatives to the project, or to the location of the project, that could feasibly accomplish most of the project’s basic objectives, and avoid or substantially lessen any of the project’s significant adverse effects, and evaluate the comparative merits of the alternatives (14 Cal. Code Regs. § 15126.6(a), (c)). The EIR must also evaluate a No Project Alternative (14 Cal. Code Regs. § 15126.6(e)). In determining the range of reasonable alternatives to be examined in the EIR, the lead agency must describe its reasons for excluding other potential alternatives. Under the “rule of reason,” an EIR is required to study a sufficient range of alternatives to permit a reasoned choice (14 Cal. Code Regs. § 15126.6(f)). Moreover, there is no requirement to study all possible alternatives.

Under NEPA, the alternatives analysis “is the heart of the environmental impact statement” (40 C.F.R. § 1502.14). Pursuant to Section 14(l) of the FRA’s Procedures for Considering Environmental Impacts, these include “all reasonable alternative courses of action which could satisfy the [project’s] purpose and need” (64 Fed. Reg. 28546, May 26, 1999). An EIS prepared for NEPA must rigorously explore and objectively evaluate a reasonable range of alternatives along with the proposed action. Reasonable alternatives are those that may be feasibly carried out based on technical, economic, environmental, and other factors (40 C.F.R. § 1502.14). The general rule under NEPA is that all alternatives carried forward in an EIS must be analyzed and

discussed to the same level of detail. This is different from CEQA, which requires only enough information about the alternatives to allow for meaningful comparison. For the San Jose to Merced Project Section Draft EIR/EIS, the more rigorous NEPA approach to alternatives evaluation was used rather than the CEQA approach. The Draft EIR/EIS examines the range of reasonable alternatives to the proposed action, including the alternative of taking no action, to an equivalent level of detail.

Development of a Range of Alternatives

As described in Section 1.1.2, The Decision to Develop a Statewide High-Speed Rail System, the 2005 Statewide Program EIR/EIS (Authority and FRA 2005, as cited in Chapter 1, Project Purpose, Need, and Objectives, of the Draft EIR/EIS) examined general HSR alignment alternatives, potential station locations, and a modal alternative. After completing the Statewide Program EIR/EIS, the Authority and FRA prepared a geographically focused program EIR/EIS, the *Final San Francisco Bay Area to Central Valley High-Speed Train Final Program Environmental Impact Report/Environmental Impact Statement* (Bay Area to Central Valley Final Program EIR/EIS) (Authority and FRA 2008, as cited in the Executive Summary of the Draft EIR/EIS), to identify corridor and station locations for the HSR connection between the Bay Area and the Central Valley. In 2008, the Authority and FRA selected a Pacheco Pass connection, with corridors and station locations to be further examined in Tier 2 environmental reviews. As a result of litigation, the Authority prepared additional programmatic environmental review for the Bay Area and the Central Valley section, and again selected the Pacheco Pass connection (in the *Bay Area to Central Valley Partially Revised Final Program Environmental Impact Report* [Authority 2012a, as cited in Chapter 1 of the Draft EIR/EIS]). These three Tier 1 decisions established the broad framework for the HSR system that serves as the foundation for the Tier 2 environmental review of individual project sections. Between San Jose and Merced, the corridor advanced for Tier 2 study was the Pacheco Pass via Henry Miller Road (Union Pacific Railroad [UPRR] Connection) from San Jose to the Central Valley. The station locations advanced for Tier 2 study were a downtown San Jose/Diridon Station and a downtown Gilroy/Caltrain station, with no station between Gilroy and Merced.

Informed by the program-level EIR/EISs and the public and agency comments received during the planning and initial scoping processes, the Authority and FRA considered various design options for the main alternatives for HSR alignment and station and maintenance facility sites, which are detailed in the *San Jose to Merced Section Preliminary Alternatives Analysis Report* (PAA) (Authority and FRA 2010, as cited in Chapter 2 of the Draft EIR/EIS) and the subsequent *San Jose to Merced Section Supplemental Alternatives Analysis Report* (SAA) (Authority and FRA 2011a, 2011b, as cited in Chapter 4, Section 4(f)/6(f) Evaluation, of the Draft EIR/EIS). Section 9.3, Alternatives Analysis Process (2010–2016), of the Draft EIR/EIS explains how the intent of the PAA and SAA was to identify the range of potentially feasible alternatives to analyze in the EIR/EIS. The analyses documented the preliminary evaluation of alternatives, indicating how each of the alternatives would meet the purpose for the HSR project; how evaluation criteria were applied and used to determine which alternatives to carry forward for preliminary design and detailed environmental analysis, and which alternatives should not be carried forward for further analysis. While the alternatives analysis process considered multiple criteria, it emphasized the project objective of maximizing the use of existing transportation corridors and available rights-of-way to the extent feasible. Those alternatives that were not carried forward by the Authority and FRA had greater direct and indirect environmental effects; were not feasible from a cost, technical, or engineering perspective; and/or failed to meet the project purpose and need/project objectives.

Chapter 9, Public and Agency Involvement, of the Draft EIR/EIS provides a detailed description of the multiple rounds of outreach, consultation, and alternatives refinement that was undertaken between 2009 and 2019, as well as development of the Checkpoint A report and the Checkpoint B reports with addendums. These reports explain the process and reasoning behind the four alternatives that were selected for further analysis in the Draft EIR/EIS.

Identification of a Preferred Alternative

The selection of the Preferred Alternative was based on the data presented in the Draft EIR/ EIS, including the supporting technical reports. The identification of the Preferred Alternative was also based on comments and input from agency, local community, stakeholder, and public comments submitted during scoping and outreach, including input received during outreach meetings concerning the Preferred Alternative held during the summer of 2019. Chapter 8 of the Draft EIR/EIS identifies the Preferred Alternative for the San Jose to Central Valley Wye Project Extent as Alternative 4 (Figure 8-1). It was selected based on a balanced consideration of the environmental information presented in the Draft EIR/EIS in the context of project purpose and need; project objectives; the CEQA, NEPA, and Section 404(b)(1) of the Clean Water Act requirements; local and regional land use plans; community and stakeholder preferences; and costs. Section 8.4.1, Review of Alternative Key Differentiators by Subsection, of the Draft EIR/EIS describes the key community and environmental factors that differentiate the alternatives within each subsection of the project.

The advantage of having identified the Preferred Alternative in the Draft EIR/EIS is that the public and resource agencies have an opportunity to provide comments with the knowledge of the agencies' preliminary preference among alternatives. After consideration of comments received on the Draft EIR/EIS and preparation and certification of the Final EIR/EIS, the Authority will consider whether to formally adopt the project Preferred Alternative. That adopted alternative could be Alternative 4 as presented in the Draft EIR/EIS, Alternative 4 with design refinements, or another project alternative.

17.3.2 SJM-Response-ALT-2: Project-Specific Alternatives Considered

Commenters asked for the reasons why other alternatives not analyzed in the Draft EIR/EIS were eliminated from further consideration or evaluation. Commenters requested that the EIR/EIS should have analyzed alternatives following U.S. Highway (US) 101 between San Jose, Morgan Hill, and Gilroy in detail. Commenters stated that the lack of horizontal and vertical alignment alternatives evaluated in the San Joaquin Valley Subsection made the EIR/EIS insufficient.

Other Alternatives Considered for Project-Level Draft EIR/EIS and Reasons for Eliminating Alternatives

Refer to Section 2.5, Alternatives Considered during Alternatives Screening Process, of the Draft EIR/EIS and Volume 2, Appendix 2-I, Alternatives Considered during Alternatives Screening Process, for a detailed discussion of alternatives considered during the screening process that were withdrawn and their reason for withdrawal. As illustrated on Figure 1 in Appendix 2-I, the Authority has considered alternatives from the issuance of the Notice of Intent/Notice of Preparation in 2009 through 2018, including multiple rounds of alternatives analysis, the Clean Water Act Section 404 checkpoint alternatives process working with the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency, Authority Business Plans, and alternative refinement processes, all of which included public outreach and engagement.

Refer to Section 2.6, Alignments, Station Sites, and Maintenance Facilities Evaluated in this Draft EIR/EIS, of the Draft EIR/EIS for a detailed discussion of alternatives carried forward in the EIR/EIS analysis. Table 2-3 in Chapter 2, Alternatives, shows the overall results of the alternatives screening process. Figure 2-30 in Chapter 2 illustrates the process graphically.

US 101 Alternative

Several alternatives following US 101 were initially considered during the alternatives development phase of the project, but the alternatives were not carried forward for study into the Draft EIR/EIS. This decision was supported by evaluation of the alternatives in the context of the following factors: consistency with the HSR system and the purpose and need of the San Jose to Merced Project Section, impacts on the environment, construction costs, logistics regarding implementation/construction, incompatibility with land use, consistency with Authority transit-oriented development (TOD) policies, and public/agency input.

US 101 was built to accommodate vehicular traffic with a design speed of up to approximately 70 miles per hour (mph). High-speed trains are proposed for much higher speeds than 70 mph

between San Jose and Gilroy. Because US 101 was designed for slower vehicular traffic, the curves of the highway are too sharp to safely accommodate a high-speed train track along the center median or with the same curvature as US 101 in the immediate adjacent area. Thus, alternatives following US 101 would not be able to strictly follow the highway alignment and would thus need to use substantial areas of land adjacent to/near US 101 in order to have acceptable design curves.

As summarized in Section 2.5 of the Draft EIR/EIS (see Table 2-3 and Figure 2-30) and in Volume 2, Appendix 2-I (see Monterey Road Subsection Design Options Considered, Morgan Hill to Gilroy Design Options, Table 4, Table 5, Figure 11, Figure 12, and Figure 13), multiple alternatives following US 101 were considered. The reasons these alternatives were dismissed from further consideration are noted below. Comparison is made to the alternatives fully analyzed in the Draft EIR/EIS (Alternatives 1, 2, 3, and 4) where appropriate.

- San Jose
 - All San Jose US 101 alternatives would require one of the US 101 alternatives discussed below for Morgan Hill and thus would also result in the associated environmental impacts of those alternatives.
 - The *US 101/Interstate (I-) 280 Alternative* would follow US 101 from north of Morgan Hill to near I-280 and then proceed toward San Jose Diridon Station similar to the alignments for Alternatives 1, 2, and 3. This alternative was considered due to public interest but was withdrawn in 2017. This alternative was determined to be not feasible due to cost and logistics; it would not meet HSR criteria for curve radii for design speeds. Because the curves required for HSR would prevent locating the alignment in the median, the alternative would have to be located outside the road right-of-way and could not strictly parallel the curvature of US 101, and this option would result in more commercial and residential displacements along the route than the options carried forward.
 - The *US 101 to Monterey Road via State Route (SR) 85 Alternative* would follow US 101 from north of Morgan Hill to near SR 85 and then transition to Monterey Road and proceed toward San Jose Diridon Station, using the same alignments as Alternatives 1, 2, 3, and 4. This alternative was determined to be not feasible due to cost and logistics; it would not meet HSR criteria for curve radii for design speeds. Because the curves required for HSR would have to be located outside the road right-of-way, this option would result in more commercial and residential displacements along the route than the options carried forward for analysis in the Draft EIR/EIS.
 - The *US 101 to Monterey Road via Blossom Hill Road Alternative* would follow US 101 from north of Morgan Hill to Blossom Hill Road and then transition to Monterey Road and proceed toward San Jose Diridon Station like the analyzed alternatives in the Draft EIR/EIS. This alternative was considered due to public interest but was withdrawn in 2017 because the Blossom Hill corridor curve between US 101 and Monterey Road is too sharp for proposed HSR design speeds; constructing the curve would require substantially more displacement of residential/commercial and open space than options carried forward.
- Morgan Hill and Gilroy
 - All Morgan Hill to Gilroy US 101 alternatives would require one of the US 101 alternatives discussed above for San Jose and thus result in the associated environmental impacts of those alternatives. The EIR/EIS does include two alternatives that are located adjacent to US 101 in part of Morgan Hill. Alternatives 1 and 3 both include a viaduct alignment west of a portion of US 101 and would avoid downtown Morgan Hill. However, while a portion of these alignments can be feasibly located along US 101, alternatives that would continue along US 101 north or south of Morgan Hill were withdrawn from further consideration for the reasons described below.

- The *US 101 Alignment to Downtown Gilroy Alternative* would follow US 101 through Morgan Hill, transition to Monterey Road south of San Martin, and then proceed toward Downtown Gilroy like Alternatives 1 and 2. This alternative was withdrawn because this alignment has greater environmental effects than alternatives analyzed in the Draft EIR/EIS on the following resources: aquatic features, California red-legged frog, California tiger salamander, least Bell’s vireo, tricolored blackbird, steelhead, San Joaquin kit fox, Bay checkerspot butterfly, and Metcalf Canyon jewelflower. It also would require greater conversion of 100-year floodplains and impacts on parks and agricultural land than the options carried forward. It would displace portions of the Morgan Hill Aquatic Center and associated soccer fields in Morgan Hill and would require a tunnel and trench to cross US 101 with associated disruption of nearby land use and infrastructure.
- The *US 101 Alignment to East Gilroy Alternative* would follow US 101 through Morgan Hill, transition to East Gilroy south of San Martin, and then proceed toward the East Gilroy Station like Alternative 3. This alternative was withdrawn because this alignment has greater environmental effects than the options carried forward on the following resources: aquatic features, California red-legged frog, California tiger salamander, least Bell’s vireo, tricolored blackbird, steelhead, Bay checkerspot butterfly, San Joaquin kit fox, Metcalf Canyon jewelflower, and Santa Clara Valley dudleya. The US 101 Alignment to East Gilroy Alternative would also convert more Important Farmland than the options carried forward and would displace portions of the Morgan Hill Aquatics Center and associated soccer fields and portions of Coyote Creek Regional Park.
- The *Gilroy US 101 Alignment Alternative* would be an alignment alternative to Downtown Gilroy or East Gilroy alternatives. From Buena Vista Avenue, this alternative would transition to following US 101, along the east side, within the median, or along the west side of US 101 to south of downtown. This alternative was considered due to public comment but was withdrawn in 2017. Through a qualitative analysis, potential variant alignments along US 101 do not offer any benefits over the existing downtown alignments included in Alternatives 1, 2, and 4 in the Draft EIR/EIS. Although the Downtown Gilroy alignments included in Alternatives 1, 2, and 4 in the Draft EIR/EIS may be disruptive during construction, the long-term economic, pedestrian, vehicular, and intermodal connectivity benefits are quite substantial. Among the US 101 variants, the west of US 101 alignment has the least amount of impacts. However, it is still a still highly disruptive alignment that involves many straddle-bent structures, disruption to a Pacific Gas and Electric Company (PG&E) high-voltage power line, impacts on several residential and industrial properties, and impacts on a public park. Additionally, the Authority does not consider any of the US 101 Gilroy alignment variants analyzed as likely to be considered the Least Environmentally Damaging Practicable Alternative.

San Joaquin Valley Alternatives

The Draft EIR/EIS only includes one alternative in the San Joaquin Valley east of the Pacheco Pass, which mostly follows Henry Miller Road. However, as summarized in Section 2.5 of the Draft EIR/EIS (see Section 2.5 text, Table 2-3, and Figure 2-30) and in Volume 2, Appendix 2-I (see San Joaquin Valley Subsection Design Options Considered, Table 7, and Figure 16), multiple horizontal alternatives were initially considered. In addition, the Authority considered a number of different vertical design options during preliminary engineering to support the Draft EIR/EIS as described below. The information concerning the vertical design options considered has been added to the Final EIR/EIS in Section 2.5 and Volume 2, Appendix 2-I.

Horizontal Alignment Alternatives

The Authority and FRA considered three horizontal alternatives as design options for the San Joaquin Valley Subsection, as illustrated on Figure 16 in Volume 2, Appendix 2-I, of the Draft EIR/EIS. In the PAA, the SAA, and 2013 Checkpoint B Summary Report (Authority and FRA 2013, as cited in Chapter 8, Preferred Alternative, of the Draft EIR/EIS), the Authority and FRA analyzed design options for the complete San Jose to Merced Project Section. Subsequently, the

Authority and FRA decided to analyze the Central Valley Wye alternatives separately in a Supplemental EIR/EIS to the Merced to Fresno Project Section EIR/EIS (Authority 2019b, as cited in Chapter 2, Alternatives, of the Draft EIR/EIS) and to focus on the alignments west of the Central Valley Wye in this Draft EIR/EIS. During the PAA, SAA, and 2013 Checkpoint B Summary Report analyses, three primary routes were considered east of the Pacheco Pass Subsection: a central route predominantly along Henry Miller Road to Carlucci Road (with various Central Valley Wye options traveling eastward from Carlucci Road), a northern route using SR 140, and a southern route through Firebaugh.

As shown in Figure 2-16 in Volume 2, Appendix 2-I, the northern alignment alternative, the Grasslands Ecological Area (GEA) North/Merced, would proceed northeast from near I-5 north of O'Neill Forebay to just east of Gustine and then north of SR 140 east toward Merced. The Authority withdrew this alternative from further consideration based on a determination that this option would result in substantially greater effects on aquatic resources than the alignment along Henry Miller Road, would be the only option to affect the North Grasslands Wildlife Area, would have high visual intrusiveness associated with a river crossing within a state park, and would introduce logistical/operational concerns because it would add HSR train travel time.

The southern alignment alternative, South of GEA, would proceed south along I-5 to past SR 165, then east through Firebaugh to meet the HSR north-south route between Madera and Fresno. The Authority withdrew this alternative from further consideration in the PAA and in the 2013 Checkpoint B Report based on a determination that this option would have the greatest effect on aquatic resources of all options considered in this subsection and would have high cost and logistical issues for construction and permitting due to its extensive environmental effects and additional miles of alignment compared to other options considered.

The alignment evaluated in the Draft EIR/EIS in the San Joaquin Valley east of the Pacheco Pass proceeds from west of I-5 north of the O'Neill Forebay eastward across I-5 and SR 140 then southeast to near Volta and then along Henry Miller Road to Carlucci Road. Public meetings, Community Working Group meetings, Technical Working Group meetings, and stakeholder and agency meetings were conducted in 2016 and 2017 to discuss project alternatives and design options for this subsection. The public expressed concern about the potential environmental effects of the Henry Miller Road to Carlucci Road option. Impacts on farmlands, properties, dairies, wetlands, wildlife, and water infrastructure were of particular concern. The Authority also consulted in 2016 and 2017 with irrigation districts, the San Luis and Delta-Mendota Water Authority, and U.S. Department of the Interior, Bureau of Reclamation (Reclamation) on revisions to the design to be included in the project to minimize infrastructure conflicts and land use displacement/disruptions. Although the Henry Miller alignment would affect farmlands and dairies, as noted above, the alternatives that avoided Henry Miller Road would have had substantially greater impacts on aquatic resources, which would make them difficult if not impossible to permit by the U.S. Army Corps of Engineers.

While the proposed horizontal alignment would have various effects on farmlands, residences, dairies, and wildlife in the San Joaquin Valley Subsection, localized changes in the HSR alignment are difficult to accommodate given the proposed speeds for HSR service are up to 220 mph. At that speed, all horizontal curves must be very gradual to support operational safety. As such, horizontal curves are many miles long, and even modest lateral shifts of an alignment can have ramifications for miles both east and west of the lateral shift itself and may just shift impacts from one location to another along the route. The horizontal alignment has been designed to minimize significant impacts where feasible, but there are limits in the ability to completely avoid impacts with alignment shifts when considering the operational safety requirements and the ramifications of alignment location overall in the subsection. During preparation of the Draft EIR/EIS, the Authority concluded that the issues raised by public concerns regarding horizontal alignment alternatives were previously considered in the 2013 Checkpoint B Summary Report, prior Tier 1 commitments, and additional design refinements were responsive to concerns raised earlier and in 2016 and 2017. The Authority found that the prior conclusions regarding the horizontal alignment alternatives to be carried forward or withdrawn from further consideration remained valid. Table 7 in Volume 2, Appendix 2-I describes the horizontal alignments

considered in this subsection and the rationale for inclusion or withdrawal from further consideration in the Draft EIR/EIS. The central route (Henry Miller Road to Carlucci Road) was determined to be potentially feasible and to result in less effects on aquatic resources than the other two horizontal alternatives and was carried forward for analysis in the Draft EIR/EIS.

Vertical Alignment Alternatives

As part of the Program EIR/EIS Tier 1 environmental process, the Authority committed to 3 miles of an elevated profile adjacent to the GEA.³ Several vertical design options were also considered by the Authority for the San Joaquin Valley Subsection during preliminary engineering, including the following:

- Addressing Bird/Wildlife Issues with Barriers/Enclosures or Tunnel:* Due to concerns about potential effects of elevated vertical alignments (embankment or viaduct) along Henry Miller Road on birds and other wildlife due to visual effects, noise effects, and bird strike effects within the GEA, the Authority explored three different approaches to addressing these impacts. The first approach, which has been incorporated into the project through Mitigation Measure BIO-MM#80, is to build additional structures in the San Joaquin Valley Subsection in sensitive wildlife areas to address these impacts. Structures would be designed with the goal of reducing or eliminating the visual presence of the moving train and reducing noise. Opaque noise barriers would be built in the GEA Important Bird Area (IBA) near Volta, between Stations B4550+00 and B4630+00. The second approach would occur, for approximately 3.4 miles in the GEA IBA, centered approximately at Mud Slough between Stations B4914+00 and B5095+00, where the rail design would be modified to enclose the train's operating envelope and overhead contact system. The Authority also considered a third approach that would use an underground tunnel in sensitive wildlife areas in the GEA. Tunneling is a cost-prohibitive approach because it is substantially more expensive than aboveground embankment or viaduct approaches, even when including aboveground mitigation in the form of noise barriers or enclosures. As discussed in Volume 2, Appendix 2-1 for tunnel options for the Monterey Corridor, cut-and-cover tunnel options can be approximately 2 times and bored tunnel options can be approximately 2.5 times more costly than a viaduct option. As a result, the Authority determined a tunnel alternative for portions of the San Joaquin Valley Subsection would be not feasible for reasons of cost.
- Additional Viaduct Sections:* The Authority also considered a potential viaduct crossing of the existing Whitworth Road overcrossing (near the I-5 California Highway Patrol [CHP] Inspection/Weigh Station) and a viaduct section instead of embankment west of I-5. A horizontal alignment closer to the CHP Inspection/Weigh Station that allowed a lower HSR profile would require reconstruction and realignment of the Whitworth Road interchange, resulting in additional impacts on prime farmland compared to the horizontal and vertical alignment in the Draft EIR/EIS. The viaduct alignment to the west of I-5 had impacts similar to the horizontal and vertical alignment in the Draft EIR/EIS, so it did not provide any environmental advantages. Thus, this additional viaduct alignment option was dismissed from further consideration because it did not reduce any environmental impacts associated with the proposed alignment.

As discussed under SJM-Response-ALT-1: Alternatives Selection and Evaluation Process, there is no requirement under NEPA or CEQA to evaluate every single permutation or alternative in an

³ Note that in addition to the vertical alignment commitment made as part of the Program EIR/EIS (Authority and FRA 2005, as cited in Chapter 8, Preferred Alternative, of the Draft EIR/EIS), the Authority also committed to additional mitigation to address impacts on agriculture, open space, and wildlife resources. As described in the Mitigation Monitoring and Reporting Plan for the Bay Area to Central Valley EIR/EIS (Authority and FRA 2008, as cited in Chapter 8 of the Draft EIR/EIS), the Authority, or other entities designated and supported by the Authority, will acquire, from willing sellers, agricultural, conservation, and/or open space easements encompassing at least 10,000 acres and generally located along or in the vicinity of the HSR alignment and within or adjacent to the designated GEA. The focus for these easements will be in areas undergoing development pressures, such as the areas around Los Banos and Volta, and/or areas that would be most appropriate for ecological conservation or restoration. Section 3.7, in the Final EIR/EIS, has been updated to include BIO-MM#P1: Provide Compensatory Mitigation for Impacts to the Grasslands Ecological Area.

EIR or EIS. Instead, the statutes require analysis of a “reasonable range” of alternatives. As shown by the more than a decade of alternatives development and evaluation, the Authority has considered a very broad range of horizontal and vertical alternatives throughout the San Jose to Merced Project Section, including the subsection within the San Joaquin Valley.

17.3.3 SJM-Response-ALT-3: Rejection of Alternative 3

Commenters suggested that the Authority should reject the east-of-Gilroy station location.

Alternative 3, which includes a proposed station east of Gilroy, was analyzed in detail in Chapter 2, Alternatives, as a feasible alternative that meets the project’s purpose and need. However, Alternative 4 is the Authority’s Preferred Alternative as described in Chapter 8.

17.4 Grade Separations

17.4.1 SJM-Response-GS-1: Requests for Grade Separations

Commenters stated that the Authority should require a grade-separated version of Alternative 4 or include grade separations as mitigation in order to avoid or reduce project effects on at-grade crossing vehicle, bicycle, and pedestrian crossing safety, delays to emergency response times, traffic, and noise.

The EIR/EIS analyzes four alternatives in detail. Alternatives 1, 2, and 3 would not have any at-grade crossings between San Jose and Gilroy, whereas Alternative 4 would be at grade and HSR trains would cross through numerous at-grade crossings. In contrast, Alternatives 1 and 3 would primarily be on viaduct between San Jose and Gilroy and thus would be entirely grade-separated. Alternative 2 would be on embankment and would include grade separations of existing at-grade roadway crossings. As such, the EIR/EIS already considers potential alternatives that include grade separations.

Grade Separation Design Requirements and Associated Environmental Impacts

Constructing with grade separations to separate a rail alignment from roads can considerably widen a rail project’s footprint. In addition, when grade separating alignments, the infrastructure can extend far beyond an individual roadway crossing because rail operations require that railway slope changes must be gradual.⁴ Thus, where there are at-grade roads crossing a rail alignment in close proximity to each other, any grade separation that uses a change in the railway elevation will likely require the changed elevation (whether above or below roadways) to be maintained across all the nearby at-grade crossings. In other words, it may not be possible to construct only one grade separation in some areas, where close proximity of at-grade crossings means that constructing one grade separation would then require constructing multiple other grade separations. This can increase the cost of a grade-separated rail alignment. It can also increase the cost associated with right-of-way acquisitions, additional infrastructure, and construction disruption.

Consideration of Alternatives that Include Grade Separations and Would Avoid At-Grade Crossing Impacts

The Draft EIR/EIS already includes an alternative (Alternative 2) that includes grade separations and follows a similar general alignment as Alternative 4 from south of Tamien Station to south of Gilroy. Thus, Alternative 2 describes the environmental impacts of a grade-separated version of Alternative 4 from the Monterey Corridor through Gilroy.⁵ While Alternative 2 includes an embankment design from the Monterey Corridor through Gilroy, the potential secondary impacts of adding grade separations to Alternative 4 at the at-grade crossing would likely be similar to the

⁴ HSR design (Authority 2009) for vertical curves limit the design to 0.26% to 0.4% per 100 feet (e.g., a change of 0.26 to 0.4 feet over 100 feet) at speeds of 125 mph. Allowed vertical curves for higher speeds than 125 mph are more gradual, and allowed vertical curves for speeds lower than 125 mph are less gradual.

⁵ North of the Monterey Corridor, Alternative 2 includes substantial viaduct sections in the San Jose Diridon Station Approach Subsection. Thus, a grade-separated version of Alternative 4 would be notably different in the San Jose Diridon Station Approach Subsection compared to Alternative 2.

impacts for Alternative 2 described in the Draft EIR/EIS at and near at-grade crossings in south San Jose, Morgan Hill, San Martin, and Gilroy.

Alternatives 1 and 3 analyze viaducts, and Alternative 2 analyzes embankments and grade separations. With this approach, the EIR/EIS already considers alternatives that would avoid impacts associated with having at-grade crossings.

Impacts Associated with At-Grade Crossings in Alternative 4 and Mitigation for Impacts Identified

The Draft EIR/EIS analyzed potential impacts associated with increased HSR trains at at-grade crossings under Alternative 4 as follows and did not identify a need for additional mitigation, in the form of grade separations, to address impacts associated with at-grade crossings.

At-Grade Crossing Safety

The Draft EIR/EIS analyzes the effect of HSR train operations on safety for vehicles, bicycles, and pedestrians crossing at-grade crossings with Alternative 4 in Section 3.11, Safety and Security, Impact S&S#12, starting on Page 3.11-66. As discussed in the Draft EIR/EIS and as elaborated further in SJM-Response-SS-1: At-Grade Crossing Safety, significant safety impacts are not expected related to increased HSR train crossings through at-grade crossings after consideration of project safety improvements for HSR portions of the corridor and Caltrain existing and planned safety improvements for the Caltrain corridor. As such, no mitigation is proposed for at-grade crossing safety in the EIR/EIS.

Emergency Response

The Draft EIR/EIS analyzes the effect of increased gate-down time on emergency vehicle response times with Alternative 4 in Section 3.11, Impact S&S#4, starting on page 3.11-50. As presented in the Draft EIR/EIS, before mitigation, significant delays (>30 seconds) to emergency vehicle response time are identified in the Monterey Corridor Subsection in South San Jose, Morgan Hill, and Gilroy. Mitigation Measures SS-MM#3 and SS-MM#4 include emergency vehicle detection (where not already present) and other improvements as necessary to reduce the delay to meet or be less than the 30-second delay threshold, which may include emergency vehicle preemption equipment at traffic signals, route-based traffic signal priority control systems, emergency vehicle and transit queue bypass lanes, roadway capacity and operational improvements to facilities paralleling the rail line to improve access to adjacent grade-separated rail crossings, construction of new fire stations to reduce fire station response times in affected areas, expansion of existing fire stations to reduce fire station response times in affected areas, or increase in contracted first responder ambulance services to reduce first responder ambulance response times in affected areas. The Draft EIR/EIS identifies that these strategies can reduce impacts at the at-grade crossings to below the threshold impact level of 30 seconds of delay. Mitigation Measure SS-MM#4 also includes an alternative approach that the Authority and a local agency may reach a mutual agreement to have the Authority make an in-lieu payment toward other infrastructure projects including nearby grade separation projects. The in-lieu payment would be the capital contribution that the Authority would have otherwise made to one or more of the above emergency vehicle priority treatment strategies. In addition, for Alternative 4 only, if local governments choose to not construct and operate new or expanded fire stations or other improvements for which the HSR would provide construction/capital funding, there may be significant and unavoidable impacts, in which case the EIR/EIS has been revised to note certain site-specific traffic mitigation measures that would reduce residual impacts, but not necessarily to a less-than-significant level. While Mitigation Measure SS-MM#4 includes an alternative funding approach that may support grade separation projects, the measure does not mandate that grade separations must be part of the mitigation; it only allows for an alternative approach.

Traffic

The Draft EIR/EIS analyzes the effect of increased gate-down time at the at-grade crossings with Alternative 4 on traffic delays at adjacent/nearby intersections in Section 3.2, Transportation, Impact TR#7. Mitigation Measure TR-MM#1 (as revised for the Final EIR/EIS to include site-

specific traffic mitigation measures) provides various standard vehicle capacity enhancements, such as signal retiming or additions, lane restriping, road/intersection widening, and turn pocket additions/increases (including right-of-way acquisitions as needed). Mitigation Measure TR-MM#1 does not include grade separations as a potential mitigation option for traffic.

Noise

The Draft EIR/EIS analyzes the effect of HSR train horn noise sounding at the at-grade crossings with Alternative 4 in Section 3.4, Noise and Vibration, Impact NV#2. As described in the Draft EIR/EIS, Alternative 4 would result in significant (severe) noise impacts due in part to the FRA-mandated horn sounding when crossing through at-grade crossings. Mitigation Measures NV-MM#3 through NV-MM#7 include various methods to reduce noise impacts, including potential noise barriers, sound insulation, train vehicle noise specifications, special trackwork, and additional design-level measures, as well as working with local jurisdictions (where they are interested and supportive) to support their establishment of quiet zones. These mitigation measures would reduce but would not eliminate all severe noise impacts, including some severe noise impacts associated with train horn noise at at-grade crossings. Grade separations are not identified as a potential mitigation for noise impacts in the EIR/EIS.

Summary of At-Grade Crossing Impact Considerations

In summary, the EIR/EIS does not identify a need for mitigation for at-grade crossing safety impacts, describes that emergency vehicle response time impacts can be mitigated without grade separations while noting that alternative funding arrangements can be made that might support other grade separation projects, and does not include grade separations as a potential traffic or noise mitigation option.

Benefits and Costs of Grade Separations

The Authority acknowledges that there are potential advantages to grade separation, but grade separations would make the project cost prohibitive. Some of the potential advantages of grade separation include elimination of potential train collisions with vehicles, pedestrians, and bicyclists; delay cost and time savings for motorists; fuel and pollution mitigation cost savings (from idling of queued vehicles); and improved emergency access. Some of the potential disadvantages of grade separation include high capital costs, road closures and traffic disruptions during construction, extensive right-of-way acquisitions, life-cycle maintenance costs, aesthetic concerns due to height of elevated structures, and space-intensive designs. As such, when making a decision, the agencies and jurisdictions involved need to evaluate the costs and benefits closely. In order to make a decision, a detailed investigation should be carried out, including a physical feasibility study; consideration of land use access; and environmental, safety, and other relevant concerns (Gitelman et al. 2006).

The total cost of a grade separation project is dependent on a number of factors related to:

- The specific siting of the grade separation
- Roadway geometry, utility locations and depths
- Proximity to station and existing tracks
- Other related factors, such as soil quality, surrounding land uses, etc.

The San Bruno Grade Separation Project to grade-separate three crossings in San Mateo County cost \$147 million, or approximately \$50 million per crossing. It was completed in April 2014 and funded through a combination of Measure A tax dollars, state funds, and federal funds (San Mateo County Transit District 2011). The San Bruno Grade Separation Project required sewer relocation, temporary street closures, deep excavation and soil hauling, temporary tracks to provide a detour around the construction area (i.e., shoofly tracks), construction and maintenance of a temporary station, on-street parking removal, and adjustment of train operations. All of these elements contributed to the total cost of the project. The 25th Avenue Grade Separation Project includes three grade separations in the city of San Mateo at a cost of \$180 million, or approximately \$60 million per crossing (Caltrain 2020). The City of San Jose, in comments on the Draft EIR/EIS, estimated that grade-separating three at-grade crossings in the Monterey Corridor

(Blanchard Road, Skyway Drive, and Chynoweth Avenue) would cost between \$400 million (elevating rails above streets) and \$1.4 billion (lowering rails into a trench beneath streets), depending on the specific design, which indicates a cost of \$133 million to \$450 million per crossing. As a general rule, the cost of grade separations of larger and more complex roadways in urban areas would be much higher than the cost of grade separations of smaller roadways outside of cities.

Overall, grade separations are a highly expensive mitigation strategy. Using an average assumed cost of \$75 million to \$150 million per crossing, grade separating the 29 at-grade crossings between San Jose and Gilroy under Alternative 4 could cost an additional \$2.175 billion to \$4.35 billion.⁶ Grade separations can sometimes cost more than \$150 million each depending on site-specific factors, so this estimate may be an underestimate. Also, the inclusion of grade separations for the at-grade alternative in the San Jose to Merced Project Section would set a precedent for the adjacent San Francisco to San Jose Project Section, which has an additional 39 at-grade crossings; using the cost range noted above, grade separations could add an additional cost of \$2.925 billion to \$5.85 billion, for a total of cost \$5.1 billion to \$10.2 billion for both project sections above the current estimated costs for the at-grade alternatives included in the two project sections.

The Authority, as described in its Business Plans, has not secured funding for constructing the entire Phase 1 system, including the San Jose to Merced Project Section and the San Francisco to San Jose Project Section. Cost has been and will continue to be a major concern for the HSR project as a whole. Given the high costs and disruptions associated with grade separations, the Authority cannot commit to grade separations as part of mitigation for Alternative 4 for the San Jose to Merced Project Section (or for the San Francisco to San Jose Project Section).

Authority Commitment to Work with Partners on Separate Grade Separation Efforts

However, if Alternative 4 is ultimately selected, the Authority, in cooperation with local jurisdictions, transportation funding agencies, and state and federal agencies, would support community-initiated grade separation efforts over time as funding becomes available. The Authority would also work with local, state, and federal partners to establish priorities for grade separations to be implemented as funding becomes available. This process would include working with local jurisdictions that are pursuing grade separation projects on their own so the HSR project, to the extent possible, does not create conflicts with future grade separation efforts. Finally, the Authority would also work with other rail parties to seek funding participation from multiple sources as opportunities arise.

17.5 Transportation Standard Responses

17.5.1 SJM-Response-TR-1: Site-Specific Mitigation for Traffic Impacts

Commenters stated that the EIR/EIS should include site-specific mitigation for identified traffic impacts and should analyze potential secondary environmental effects of site-specific traffic mitigation.

As described in the Draft EIR/EIS, per Senate Bill 743 and the related change in CEQA guidelines in December 2018, traffic delay or congestion, as often measured using level of service (LOS), can no longer be considered a significant environmental impact under CEQA. Instead the 2018 CEQA guidelines update requires the analysis of vehicle miles traveled (VMT) as the most appropriate to assess transportation metrics and the Draft EIR/EIS provides an analysis of the project's effect on VMT. Since traffic delay or congestion is not considered a significant impact on the environment under CEQA, any project inconsistency with local plans or policies that call for maintenance of a specific LOS or to manage other aspects of traffic delay or congestion is also no longer considered a significant impact under CEQA. As such, CEQA does

⁶ As described in the Draft EIR/EIS, Chapter 6, Project Costs and Operations, the capital costs (in 2018\$) for Alternative 2 are estimated as \$20.8 billion compared to \$16.5 billion for Alternative 4, a difference of \$4.3 billion. The difference is largely but not entirely due to the cost of grade separations.

not require the identification of mitigation measures generally or for specific sites for impacts that are not considered significant such as traffic delay or congestion.

However, the Draft EIR/EIS does analyze traffic delay/congestion relevant to NEPA requirements, including mitigation for adverse impacts. The Draft EIR/EIS evaluates temporary and permanent effects on traffic delay/congestion on intersections, roadways, and freeway segments under the following impacts: Impacts TR#1: Temporary Congestion/Delay Consequences on Major Roadways, Freeways, and Intersections from Temporary Road Closures, Relocations, and Modifications; TR#2: Temporary Congestion/Delay Consequences on Major Roadways, Freeways, and Intersections from Construction Vehicles; TR#3: Permanent Delay/Congestion Consequences on Freeways and Roadways from Permanent Road Closures and Relocations; TR#4: Permanent Delay/Congestion Consequences on Intersections from Permanent Road Changes; TR#6: Continuous Permanent Delay/Congestion Consequences on Freeway Operations; and TR#7 Continuous Permanent Delay/Congestion Consequences on Intersection Operations. The detailed disclosure of the specific LOS/delay effects due to the project alternatives is provided in Volume 2, Appendix 3.2-A, Transportation Data on Roadways, Freeways, and Intersections.

Mitigation for identified traffic delay/congestion effects was identified in the Draft EIR/EIS under Mitigation Measure TR-MM#1. Mitigation for permanent congestion/LOS effects on freeway operations (Alternatives 1, 2, and 3) could include freeway widening and the construction of express lanes, as identified in the Metropolitan Transportation Commission regional transportation plan. Mitigation measures to address permanent congestion/LOS effects on intersection operations from permanent road closures and relocations (all alternatives), increased gate-down time at the at-grade crossings, and vehicle flow to/from HSR stations could include one or more combinations of various standard vehicle capacity enhancements. As such, Mitigation Measure TR-MM#1 identified a range of potential mitigation strategies for addressing intersection, roadway, and freeway traffic delay/congestion effects; however, the Draft EIR/EIS did not identify the specific detailed application of TR-MM#1 on a site-specific basis.

In response to comments, the Authority conducted further analysis and developed site-specific mitigation measures for consideration that could reduce identified adverse traffic effects identified in the EIR/EIS. HSR also developed “Decision-making Guidance for the Adoption of Traffic Mitigation Measures” in February 2021 (Authority 2021, as cited in Section 3.2 of the Final EIR/EIS), which describes NEPA requirements concerning the analysis of traffic effects and consideration of mitigation and provides criteria for consideration and selection of traffic mitigation. Five screening criteria for mitigation measures were identified:

- the measure does not cause an increase in VMT;
- the measure would not contradict the objectives of Senate Bill 743;
- the measure is not more disruptive to the community than the traffic effect itself;
- the measure does not result in unmitigable secondary environmental effects; and
- the Authority has determined the measure is practicable.

The Authority conducted a screening evaluation of the potential site-specific mitigation identified using these criteria, which resulted in the elimination of some of the mitigation measures from further consideration. The screening evaluation is included in a new Appendix 3.2-C, Screening Evaluation of Site-Specific Traffic Mitigation Measures, which describes the mitigation measures considered, presents the screening evaluation, and identifies those measures that passed the screening and those that did not (and why they did not). After the screening, site-specific mitigation measures were identified for the different alternatives as follows: Alternative 1 (22 measures); Alternative 2 (26 measures); Alternative 3 (21 measures); and Alternative 4 (15 measures). These measures have been added to Section 3.2, Transportation (in Section 3.2.7, Mitigation Measures and Section 3.2.8, Impact Summary for NEPA Comparison of Alternatives). Section 3.2 has been revised to describe the potential effect on adverse traffic effects with implementation of the mitigation measures under consideration. By alternative, the potential changes with implementation of the identified measures compared to the adverse

effects without mitigation are as follows: Alternative 1 (adverse effects⁷ at 49 intersections versus 23 intersections with mitigation); Alternative 2 (adverse effects at 55 intersections versus 24 intersections with mitigation); Alternative 3 (adverse effects at 44 intersections versus 23 intersections with mitigation); and Alternative 4 (adverse effects at 32 intersections versus 22 intersection with mitigation). Some of the mitigation would address more than one intersection. Some of the mitigation would reduce adverse effects to below the adverse effect criteria used in the EIR/EIS analysis; some would not (all the mitigation would reduce the amount of intersection delay, but some would not reduce it sufficiently to below the adverse effect criteria in Section 3.2.4.4, Methods for Evaluating Impacts under NEPA) at some of the intersections.

As described in the Draft EIR/EIS in Section 3.2.7, Mitigation Measures, depending on location and design, traffic mitigation measures can have substantial secondary environmental impacts, including construction disruption to roadways and rail operations, as well as construction noise, air pollutant emissions, visual aesthetic changes, right-of-way acquisition, displacement of residential and commercial development, encouragement of sprawl growth and associated VMT and air pollutant/GHG emissions, discouragement of compact walkable TOD development, encroachment on public parks and open space, removal of trees and vegetation, and impacts on groundwater. The general analysis in the Draft EIR/EIS has been revised to assess the potential for secondary environmental impacts of the site-specific traffic mitigation measures included in the Final EIR/EIS in Section 3.2.7, Mitigation Measures in the Final EIR/EIS. Since one of the screening criteria is that mitigation measures for consideration should not result in unmitigable secondary environmental impacts, the mitigation measures presented in the Final EIR/EIS would not result in new significant impacts nor substantially more severe impacts than presented in the Draft EIR/EIS.

The requirements for mitigation under CEQA and NEPA are distinct. While CEQA requires the CEQA lead agency to both identify and adopt feasible mitigation (unless there are overriding conditions), NEPA only requires a federal lead agency to identify all relevant and reasonable mitigation but does not require a federal lead agency to adopt mitigation. Again, CEQA does not require the identification of mitigation measures for traffic delay/congestion impacts because they are not considered significant under CEQA. Accordingly, with respect to the NEPA site-specific traffic mitigation measures included in the Final EIR/EIS, the Authority, acting in its delegated role as the federal lead agency, can choose whether to adopt mitigation or not.

17.5.2 SJM-Response-TR-2: Construction Traffic and Parking Management Details

Several commenters questioned how the construction phase of the HSR project would affect highways; local roadways; bicycle, pedestrian, and transit; and on-street and off-street parking facilities. The comments expressed concerns that the construction phase of the project was not defined to a sufficient level of detail to allow for proper environmental review to occur (e.g., number, scope, duration, and magnitude of temporary lane closures necessary, as one example). Comments also questioned the level of detail of analysis and environmental review provided for the evaluation of the project's impacts during construction.

The Draft EIR/EIS evaluates conditions and potential impacts during project construction commensurate with the current level of project design and definition, sufficient for environmental analysis. At the project's present preliminary level of design, many outcomes of construction can be reasonably assumed and have been identified and evaluated in Section 3.2, Transportation, of the Draft EIR/EIS. For example, while the contractor's precise phasing of any planned roadway closures is currently not identified, the construction of all four alternatives would likely include a limited number of full weekend closures of I-280 to construct or widen the rail overcrossing. Similarly, Alternatives 1, 2, and 3 will require the temporary narrowing of Monterey Road with the loss of left turn access during project construction. These potential temporary construction-related effects have been identified and are evaluated and disclosed within the Draft EIR/EIS. However,

⁷ The criteria used for this EIR/EIS for identifying "adverse effects" for traffic under NEPA are discussed in Section 3.2, Transportation under Section 3.2.4.4, Method for Evaluating Impacts under NEPA.

certain other elements of project construction are currently not identified given the project's current level of design; individual engineers and contractors will choose to execute the project differently and need to be provided with a certain level of flexibility in construction means and methods. This process, and techniques of project construction, have been described and discussed within the Draft EIR/EIS.

To provide future engineers and contractors with an envelope of implementation flexibility while ensuring that all project impacts are disclosed in the EIR/EIS, the project includes IAMFs that would reduce impacts on transportation and parking during construction. These IAMFs require the contractor to develop and implement plans and actions to minimize or avoid potential construction impacts. The IAMFs include implementing construction hours, designating parking for construction vehicles, maintaining truck routes and construction for special events during project construction, maintaining bicycle and pedestrian access, protecting freight and passenger rail services, maintaining transit access, and meeting design standards and guidance for transportation facilities. All project IAMFs are included in Volume 2, Appendix 2-E, Project Impact Avoidance and Minimization Features, of the Draft EIR/EIS. TR-IAMF#1–#9 and #11 are most relevant to this comment.

IAMFs are project features that are considered to be part of the project. The Authority and FRA pledged to integrate programmatic IAMFs consistent with the Statewide Program EIR/EIS (Authority and FRA 2005, as cited in Section 3.2, Transportation, of the Draft EIR/EIS), Bay Area to Central Valley Final Program EIR/EIS (Authority and FRA 2008, as cited in Chapter 1 of the Draft EIR/EIS), and the 2012 Partially Revised Final Program EIR (Authority 2012b, as cited in Chapter 2 of the Draft EIR/EIS) into the HSR project. As described in Section S.6, Impact Avoidance and Minimization Features, and Section 3.2.4.2, Impact Avoidance and Minimization Features, of the Draft EIR/EIS, these features are included as part of the project. The Authority would implement these features during project design and construction to avoid or minimize impacts.

Section 3.2 of the Draft EIR/EIS evaluates the construction-related impacts of the HSR project, at the level of detail that is sufficient to conduct environmental analysis for CEQA and NEPA. The Draft EIR/EIS describes and evaluates the potential types, range, and scope of potential construction impacts that could occur, depending on the ultimate means and methods implemented by the contractor. The project includes IAMFs to guide and put boundaries on the contractor to ensure that there are no additional construction-related impacts of the HSR project beyond what was disclosed in the EIR/EIS.

With respect to Impacts TR#1, TR#2, TR#8, and TR#17, the EIR/EIS finds that the impacts would be less than significant under CEQA, which is the correct determination based on the effects analysis and evidence presented. With respect to Impacts TR#10, TR#11, and TR#20, the EIR/EIS finds that the impacts would be significant under CEQA, which is the correct determination based on the effects analysis and evidence presented. Please refer to Table 3.2-23 of the EIR/EIS for a summary of the NEPA findings relative to these construction effects. In general, the project alternatives were found to result in similar overall NEPA effects during construction, with Alternative 4 being the least impactful and Alternative 2 resulting in potentially the greatest overall effect.

17.5.3 SJM-Response-TR-3: Gate-Down Time Calculation Details

Several commenters requested additional details on the number of trains assumed and gate-down time calculations within the Draft EIR/EIS's analysis of traffic impacts with Alternative 4. Questions regarding the total number of trains included and the assumptions/methodologies used within the gate-down time and associated traffic analyses were also raised.

The traffic operations analysis at grade crossings was performed using microsimulation models that considered vehicle volumes, traffic signal timing parameters, the number of trains at the crossing, gate-down time, and traffic signal preemption patterns (if a signal is located near the crossing and has preemption).

The number of trains per peak hour was input into the microsimulation models based on published and conceptual future schedules, consistent with the methodology used in the Final EIR approved for the Peninsula Corridor Electrification Project (PCJPB 2015, as cited in Section 3.2, Transportation, of the Draft EIR/EIS). Caltrain service in the study area for existing conditions included three peak direction-only trips in the AM and PM peak periods and limited service (2 to 3 trips per peak period) between the Tamien and San Jose Diridon Stations. Future Caltrain service assumptions included an expansion of service south of San Jose Diridon Station to include 3 to 4 peak direction trips per hour between the Gilroy and San Jose Diridon Stations. Future service assumptions for HSR included 8 trains per hour per direction (16 trains per hour total) based on a conceptual schedule between Diridon and Gilroy that takes Caltrain movements into account. Limited freight service in the corridor was observed over the multiple days and weeks of existing conditions data collection, thus freight service in the peak hours was deemed to be negligible during peak hours versus passenger train volumes (no weekday peak hour freight train activity was observed during the data collection performed for the project). Please refer to Section 3.2.6.6, Freight Rail Service, of the Draft EIR/EIS for additional discussion of current and forecast freight rail activity within the project section. Freight rail activity within the project section largely occurs outside of the weekday morning and evening peak hours of travel and thus is not relevant to the analysis of peak hour traffic.

The high number of trains in the corridor under future conditions will likely lead to grade crossing events where two trains (in opposite directions) pass each other at an at-grade crossing. The conceptual schedules used in the microsimulation modeling reflect this “2-for-1” grade crossing event possibility by modeling each train individually in their respective directions of travel. If two trains pass each other during the course of one grade crossing event, the gates at the modeled grade crossing remain down and any nearby traffic signals remain in preemption mode until the second train has passed. The analysis reflects how 2-for-1 events influence the number and duration of gate-down events and traffic signal preemption events. Ultimately, these 2-for-1 events reduce the amount of gate-down time at a crossing over the course of a peak hour because of the overlapping of trains (although the actual 2-for-1 event itself results in a longer gate-down time for that specific event).

A key input into the microsimulation models is the average gate-down time per single train event. Trains travel at different speeds throughout the system due to physical infrastructure and the presence of stations (trains travel at lower speeds as they enter and exit stations). This data point was developed using the modeled gate-down time information for the San Francisco to San Jose Project Section; crossings near the San Jose Diridon and Gilroy Stations used data from the current Mission Bay crossing in San Francisco (the grade crossing of Caltrain tracks with the longest average gate-down time in the San Francisco to San Jose Project Section), while all other crossings use the 95th percentile of the average gate-down time value for crossings between San Francisco and San Jose. Data on current gate-down time at crossings in combination with other factors, such as train speeds, station locations, track curvature, and other features, were used to calculate the anticipated gate-down time at various crossing locations. The following gate-down time assumptions were used in the analysis:

Single Train Gate-Down Time Values by Grade Crossing

Calculation Method	Single Train Gate-Down Time Value	Grade Crossings
95th Percentile of all San Francisco to San Jose crossings	0:00:54	All crossings not noted below
Average Mission Bay (San Francisco) grade crossing	0:01:08	Virginia Street, Auzerais Avenue, IOOF Avenue, Lewis Street, Martin Avenue, 6th Street, 7th Street, 10th Street, Luchessa Avenue

The average single-train gate-down time on the San Francisco to San Jose Project Section for crossings not near stations is less than 44 seconds. Thus, using the 95th percentile gate-down time adds at least 10 seconds to the expected single-train event gate-down time. Over the course of a peak hour, this assumption adds up to an additional 200 seconds of gate-down time in the modeling beyond what would typically be expected.

17.6 Public Utilities and Energy Standard Response

17.6.1 SJM-Response-PUE-1: Major and High-Risk Utilities/Utility Infrastructure

Commenters identified public utility infrastructure, including public drinking water supply wells and pump stations, that would need to be relocated but that are not identified as major utilities in Section 3.6, Public Utilities and Energy, of the Draft EIR/EIS and Volume 2, Appendix 3.6-A, Public Utilities and Energy Facilities. Commenters inquired as to the procedures the Authority would use to identify and relocate/protect public utilities and asked whether the Authority would comply with specific local ordinances and other local government requirements for public utility relocation/protection for both major and minor utilities.

Major utilities are defined in Section 3.6.1, Introduction, and included in Volume 2, Appendix 3.6-A of the Draft EIR/EIS. The Authority has made reasonable efforts to identify the locations of all utilities within the project footprint as part of its Preliminary Engineering for Project Definition—the environmental analysis and documentation that is sufficient for disclosing the environmental impacts of the HSR project.

Section 3.6 and Appendix 3.6-A have been updated in the Final EIR/EIS to include applicable information provided by commenters. Additionally, Impact PU&E#4 has been revised to include groundwater wells and pumping stations. The Authority would ensure that replacement wells would be constructed and functional before abandoning and demolishing existing wells in order to prevent disruption to public (and private) water supply systems. The Authority is also actively working with utility owners to integrate additional existing and planned utilities into project final design, as described in SJM-Response-PUE-2: Coordination with Local Government Entities and Utility Owners.

17.6.2 SJM-Response-PUE-2: Coordination with Local Government Entities and Utility Owners

Several commenters requested that the Authority comply with locally adopted requirements when it addresses construction impacts on local government facilities or relocation of utilities.

As stated in Section 3.6.3, Consistency with Plans and Laws, of the Draft EIR/EIS, the Authority is a state agency and therefore is not required to comply with local land use and zoning regulations; however, the Authority has endeavored to design and construct the HSR project so that it is consistent with land use regulations. The Authority has coordinated with local government entities and utility owners throughout the alternatives analysis and development of the Draft EIR/EIS phases of the project. The Authority will continue this coordination through the final design and engineering phases. The Authority utilizes memoranda of understanding (MOUs) and cooperative agreements to establish its working relationships with local government entities along the HSR alignment in each project section as it moves forward with project implementation. Similarly, the Authority uses master agreements with utility companies that set out the working relationship and terms on how to relocate existing affected utilities. The utility agreements/task orders executed with local government agencies and utility companies specify the terms and precise standards to relocate or protect in place existing affected facilities or utilities and provide the obligations on the parties for engineering design, construction, costs, invoicing procedures, and coordination. These agreements also set forth the mutual expectations of the parties to the agreement as to the consultation and review role of the local government entity or utility company over the course of design development.

Many of the specific utility connection issues and relocation sites cannot be known until the Authority is closer to final design and the utility or municipal services providers share information on the impact of the selected alternative on their existing facilities. During the development of the

final design, the Authority will coordinate with utility owners and local districts and agencies to refine this information. Additional utilities and facilities will be identified and evaluated during the final design phase. The development of the final design would follow all applicable state law requiring use of a utility locator service and manual probing for buried utilities within the construction footprint prior to initiating ground-disturbing activities. The Authority would coordinate with utility owners during final engineering design and construction of the project alternatives to remove, realign, relocate, or otherwise modify utilities within the right-of-way or protect them in place or abandon them in place within the right-of-way. Please refer to PUE-IAMF#3 and PUE-IAMF#4 in Volume 2, Appendix 2-E of the Draft EIR/EIS.

The Authority uses industry standard practices for addressing local government and utility company facilities and utilities. The Authority generally ensures that overall local government/utility company facilities and utilities function in a materially equivalent manner as prior to the relocations or impact. The Authority also generally ensures that the design of the relocations or repair/replacement of facilities and utilities meets the local government entity's or utility company's (as applicable) published (or, if not published, established) design standards in place at a certain point in time (usually the time of agreement execution or the time of final design), and subject to the Authority's evaluation of whether the relocations or replacements have effectuated a betterment or some level of cost sharing.

17.7 Biological Resources Standard Responses

17.7.1 SJM-Response-BIO-1: Wildlife Connectivity in Coyote Valley and Pacheco Pass

Commenters expressed their concern that the Draft EIR/EIS wrongly concludes that the rail's impact on wildlife connectivity is not significant in Coyote Valley and in the Pacheco Pass area.

The Authority disagrees with the commenters' assertion that impacts on Coyote Valley and Upper Pajaro/Soap Lake Area to Pacheco Pass are significant after application of design features and mitigation measures. Project design includes wildlife undercrossings in Coyote Valley, viaducts and modified hydrologic balancing features in Soap Lake, and a tunnel in Pacheco Pass to avoid and minimize impacts on wildlife movement. The wildlife crossings in Coyote Valley were designed, to the extent feasible, to meet design standards published in the literature and transportation design guidelines (Clevenger and Huijser 2011; Kirkland and Strohl 2011; Klafki 2014; Cypher 2010; Cypher et al. 2013; USFWS 2012; Cain et al. 2003; Ng et al. 2004; Gordon and Anderson 2003; and Dodd et al. 2007, as shown in Table 7-1 of the Wildlife Corridor Assessment [WCA] Report [Authority 2020a, Appendix C, as cited in Section 3.7, Biological and Aquatic Resources, of the Draft EIR/EIS]) in coordination with the following wildlife movement stakeholders and experts: Santa Clara Valley Open Space Authority (SCVOSA), The Nature Conservancy, Peninsula Open Space Trust, Santa Clara Valley Habitat Agency (SCVHA), and Pathways for Wildlife.

Section 3.7.8, Mitigation Measures, describes mitigation developed to compensate for impacts on biological resources. The measures that are relevant to wildlife crossings include, but are not limited to:

- Additional wildlife crossings in western Pacheco Pass, which were not included in the design
- A noise barrier on the portion of the rail section through Soap Lake, which has low background levels of noise and light compared to sections along Monterey Road in Coyote Valley and along SR 152 in western Pacheco Pass
- Wildlife crossing design requirements for vegetation at entrances and exits, substrate, cover within and just outside the crossing
- Fencing requirements to prohibit wildlife entry into the rail corridor

- Openings that allow wildlife movement through the new Monterey Road median under Alternatives 1 and 3 (as the existing 3-foot median barrier only has breaks at the intersections)
- Offsets for unavoidable impacts from the maintenance-of-way facility

In addition, the Authority would prioritize mitigation land acquisition for listed species such as Bay checkerspot butterfly, California red-legged frog, and Swainson's hawk at or near crossing entrances to minimize future development and maintain the natural and rural land cover types surrounding the proposed wildlife crossing entrances and exits.

While project design features and mitigation measures do not completely eliminate the effects of the project, they do minimize the effects to a less-than-significant level compared to the existing condition. More specifically, wildlife movement conditions for each wildlife movement guild would not be substantially different than the existing condition, which is often degraded. For example, wildlife crossings are more likely to be used by movement guilds represented by coyote, fox, deer, and bobcat because these are the guilds/species more likely to use crossings in the existing condition.

Alternatively, high mobility, high openness movement guilds represented by mountain lion and Tule elk are less likely to move across or through semi-permeable movement barriers (e.g., roads, median barriers, underpasses, culverts) and developed areas in the existing condition and this is likely to remain the case after HSR construction. For example, mountain lions are rarely observed using culverts or underpasses to move across Coyote Valley. This will likely continue to be the case in Coyote Valley after HSR construction, with the improved Fisher Creek underpass likely providing the best opportunity for increased mountain lion use (given they are known to use riparian corridors for movement). Further, adding wildlife crossings under Monterey Road in Coyote Valley would create safe movement opportunities for all species, including the mountain lion, which is an improvement over the existing condition, where Fisher Creek is the only safe movement option.

For the high openness and high mobility movement guild represented by Tule elk, there is no known evidence of elk moving across Coyote Valley in the existing condition. The creation of wildlife crossings under Monterey Road, some of which meet minimum design recommendations for the Tule elk, would also increase the potential for safe passage across the valley if individual animals do attempt to cross.

Similarly, in Pacheco Pass, there is roadkill evidence that Tule elk attempt to cross SR 152 but, at this time, there is no evidence that Tule elk are successfully moving back and forth across SR 152 with any frequency such that the herd could take advantage of resources north of SR 152. As a result, SR 152 is considered a northward movement barrier for elk in the existing condition. This is an important assumption in the analysis because the train runs parallel to and just south of SR 152. For the majority of the Pacheco Pass area, the train is within a tunnel so potential impacts on Tule elk movement in those regions are avoided.

In western Pacheco Pass, where the train is at grade, a barrier to northward movement is created by the train. BIO-MM#78 partially addresses this decrease in movement opportunity across the rail by requiring four wildlife undercrossings. All of these proposed crossings meet the recommended crossing dimensions and frequency for Tule elk (as presented in the Table 7-1 of the WCA), which creates potential for elk movement through the train corridor. However, Tule elk are not known to use undercrossings with much frequency, so the analysis includes a loss of movement potential between the train and SR 152. The reduction in movement potential would result in a loss of access to a relatively small patch of grassland foraging habitat between the project and SR 152. The reduced access to this small patch of foraging habitat in Pacheco Pass is very unlikely to result in any measurable reduction in reproductive success or overall health of the local Tule elk population and is therefore not considered a substantial impact.

17.7.2 SJM-Response-BIO-2: Greater Wildlife Impacts Associated with Alternative 3

Commenters expressed their concern that the Draft EIR/EIS fails to acknowledge the greater agricultural and wildlife impacts resulting from Alternative 3, which includes a station and maintenance facility on the east side of Gilroy.

The Draft EIR/EIS does acknowledge the greater agricultural and wildlife impacts resulting from Alternative 3. Chapter 8, Preferred Alternative, provides an overview of key resources by subsection. Alternative 3 includes the station and maintenance facility on the east side of Gilroy. Section 8.4.1.3, Morgan Hill and Gilroy Subsection, provides a description of the Morgan Hill and Gilroy Subsection, which includes the Gilroy station options and maintenance facilities. The summary under both agricultural farmlands and biological resources indicates that Alternative 3 would have the greatest impacts on these resources. This information is also quantified in Table 8-1.

17.7.3 SJM-Response-BIO-3: Coyote Valley Wildlife Crossings

Commenters indicated that the description of the wildlife crossings in Coyote Valley is insufficient to determine whether they will work and indicated that the crossings are too small, too long, and/or too dark for the animals to see through to the other side. Commenters are also concerned that proposed wildlife crossings may interfere with already planned wildlife crossings.

The wildlife crossing locations, height, length, and width are depicted in the engineering drawings (Volume 3, Preliminary Engineering for Project Design Record). Wildlife crossing dimensions were informed by the published, movement guild-specific minimum and recommended wildlife crossing dimensions summarized in Table 7-1 of the WCA (Authority 2020a, Appendix C, as cited in Section 3.7, Biological and Aquatic Resources, of the Draft EIR/EIS). Further, Appendix J, Recommended Design Improvement Locations and Dimension, of the WCA includes a description of required design features such as substrate and entrance/exit cover that have been shown in the literature to improve use for each movement guild. In Coyote Valley, the siting of wildlife crossings was informed by the wildlife crossing locations proposed in the Coyote Valley Landscape Linkage (SCVOSA 2017, as cited in Section 3.7, Biological and Aquatic Resources, of the Draft EIR/EIS) and numerous meetings over the course of several years with the authors and stakeholders that contributed to that same plan (i.e., SCVOSA, The Nature Conservancy, Peninsula Open Space Trust, Pathways for Wildlife, and others). During these meetings, the Authority worked with local wildlife movement stakeholders to optimize the siting and design of wildlife crossings in Coyote Valley to the greatest extent feasible.

Regarding potential interference with already planned wildlife crossings, the Authority is not aware of any existing construction or funding plans to build wildlife crossings in Coyote Valley. The Authority is aware that Penrod et al. (2013, as cited in Section 3.7 of the Draft EIR/EIS) recommended a wildlife overpass at Metcalf Canyon Road and of the “roadmap” that the Coyote Valley Landscape Linkage (SCVOSA 2017, as cited in Section 3.7 of the Draft EIR/EIS) proposes for wildlife crossings. The Authority has incorporated the wildlife undercrossings proposed in the Coyote Valley Landscape Linkage, and the land bridge proposed at either Metcalf Canyon or Bailey Road remains aspirational and speculative at this time as there is no environmental clearance document or designated funding for the land bridge. The effects of the proposed project on full implementation of the Coyote Valley Landscape Linkage are evaluated in Section 3.7.7.9, Habitat Conservation Plans, of the EIR/EIS. That analysis concludes that while HSR, as a new piece of infrastructure on the landscape, would increase the complexity and design of those crossings proposed in the Coyote Valley Landscape Linkage (SCVOSA 2017, as cited in Section 3.7 of the Draft EIR/EIS), the presence of HSR would not preclude the building of any crossing, nor would it cause a change in design that would otherwise render the crossing(s) ineffective.

BIO-MM#78, Establish Wildlife Crossings at Embankment in West Slope of Pacheco Pass, requires four undercrossings along the 2.5-mile at-grade rail section along western Pacheco Pass to offset the loss of wildlife movement in this area. Appendix J of the WCA provides cross-sectional draft drawings of proposed locations and slope of the four required crossings. The

crossing dimensions (width, height, and length) meet the recommended design dimensions presented in Table 7-1 of the WCA for all movement guilds with known presence in the region, including the high and very high openness movement guilds represented by mountain lions and Tule elk. However, because crossings under SR 152 are already less likely to function for high mobility, high openness species in the existing condition, the same will likely remain true for crossings under HSR. If avoidance of these crossings were to occur for these two guilds/species, the effect is still considered less than significant because travel around this at-grade section is possible and because the loss of access to the small part of grassland between SR 152 and the at-grade section of rail would not substantially reduce foraging or breeding potential or success for either species.

17.7.4 SJM-Response-BIO-4: Grasslands Ecological Area Boundary

Several commenters asserted that the Draft EIR/EIS improperly defined boundaries of the GEA and failed to correctly identify, describe, and classify the GEA. Several commenters also noted that the boundary of the GEA generally aligns with the federally designated Grasslands Wildlife Management Area (GWMA), established in 1979 under the Migratory Bird Conservation Act, and that approximately 131,000 acres are within this area. Some commenters also noted the designation of the GEA as a wetlands of worldwide importance under the Ramsar Convention on Wetlands of International Importance (Ramsar Convention), an international treaty signed in 1971. Lastly, some commenters asserted that the use of the Audubon GEA IBA too narrowly defined the GEA, resulting in a flawed analysis to various biological resources, including to conservation easements.

The Authority has clarified the description of the GEA in the Final EIR/EIS. As described in the Final EIR/EIS, there is some confusion regarding the official boundaries of the GEA and total acreage of the GEA. The Authority notes that the history, land use, and ownership of the region is complex. The first use of the term *GEA* appears to come from the Ramsar Convention signed in 1971. As defined by the Ramsar Convention, the boundaries of the GEA (Site #1451) encompass approximately 160,000 acres (Ramsar Sites Information Service 2020). The Los Banos Wildlife Area, occupying approximately 3,000 acres, was the first conserved area in the region, predating the Ramsar Convention. It was first purchased by the Fish and Game Commission in 1929 and later designated as a wildlife area by the Fish and Game Commission in 1954. Following the designation of the GEA under the Ramsar Convention, Volta Wildlife Area was established by the California Fish and Game Commission in 1973, within the boundaries of the GEA as defined by the Ramsar Convention. Volta Wildlife Area was the second designated wildlife area established in the region, protecting approximately 3,800 acres.

In 1979, the U.S. Fish and Wildlife Service (USFWS) established the GWMA, which comprises privately owned lands on which perpetual conservation easements have been purchased (USFWS 2020a). The GWMA was established under the Migratory Bird Conservation Act, which identifies a process to approve areas recommended by the Secretary of the Interior for acquisition with Migratory Bird Conservation Funds. A boundary of the area designated as the GWMA in 1979 could not be located; however, as of the Fiscal Year 2018 Annual Report from the Migratory Bird Conservation Commission, the total number of acres protected (fee title, easement/lease, other) within the GWMA is 94,997 acres (USFWS 2020b). The boundaries of the GWMA are not identical to the GEA designated under the Ramsar Convention, but they are generally similar.

In 1992, the California Fish and Game Commission established the North Grasslands Wildlife Area, consisting of approximately 7,400 acres in three areas (China Island, Gadwall, and Salt Slough), also located within the boundaries of the GEA as defined by the Ramsar Convention. In 2005, the USFWS finalized an Environmental Assessment for an expansion of the GWMA by approximately 46,400 acres and adopted a Finding of No Significant Impact for the proposed action (USFWS 2005). The boundaries of the GWMA expansion are outside the GEA designated under the Ramsar Convention.

Lastly, Audubon has developed an effort to identify, monitor, and protect the most important places for birds, referred to as IBAs. Audubon has designated approximately 160,000 acres within its GEA IBA as of February 2010, the most recently available update (Audubon 2020). The

boundaries of this IBA are similar to, but not exactly identical to, the GEA as defined under the Ramsar Convention. The Audubon GEA IBA is larger than the GEA in some areas (particularly on the northern edge) and slightly smaller in other areas such as south of the Volta Wildlife Area and the area centered on Henry Miller Road. Lastly, the Audubon GEA IBA excludes the GWMA expansion area.

With respect to commenters' assertions that the Authority uses an incorrect boundary of the GEA in the Draft EIR/EIS, and the improper use of an incorrect boundary results in an incomplete assessment of biological resources, the Authority disagrees. Collectively, as clarified in the Final EIR/EIS and unless otherwise noted, when the Authority refers to the GEA, it refers to all areas within the GEA as defined by the Ramsar Convention, areas within the Audubon GEA IBA, and areas within the GWMA (as expanded in 2005), as well as areas within the San Luis and Merced National Wildlife Refuges. In other words, the largest geographic extent of the GEA is considered. References in the Draft EIR/EIS to specific conservation areas as they are defined in the Draft EIR/EIS (e.g., the Volta Wildlife Management Area or the Mud Slough Conservation Easement) or to specific areas of analysis (e.g., the Audubon GEA IBA) are therefore specific to the resources being evaluated in the EIR/EIS and are purposely used in the analysis.

Commenters expressed concern about the adequacy of the special-status species analysis (e.g., tricolored blackbird, migratory birds, shorebirds, and other waterfowl) based on the GEA boundaries. The Draft EIR/EIS considers effects on special-status species and their habitat regardless of specific administrative or conservation boundaries. As described in the Draft EIR/EIS, the Authority conducted species habitat modeling along the alignment as well as within a large regional area around the alignment (including the GEA). Thus, the assessment used in the Draft EIR/EIS does assess effects on special-status species on a habitat basis, regardless of whether that habitat is located within the GEA or not.

Commenters also asserted that the analysis of effects on conservation areas was too narrow and should also consider areas within the GEA in the impact analysis. As noted in Section 3.7.1, Introduction, of the Draft EIR/EIS, conservation areas are defined as "land parcels that are protected or managed specifically for, or that have been designated for the conservation of, biological or aquatic resources." These areas were identified on the basis of recorded conservation easements, public lands (such as wildlife refuges), and conservation and mitigation banks. The Authority reviewed existing databases and coordinated with local stakeholders to identify conservation areas, as noted in the Draft EIR/EIS. Several areas within the GEA boundaries that met the definition of conservation areas overlapped with the project extent, including the Los Banos Wildlife Management Area and Mud Slough Conservation Easement. The Authority reviewed nonprotected parcels within the overall GEA boundary—which are primarily made up of intensive agricultural land uses—and determined that they did not meet the definition of conservation areas. The Authority also notes that the GEA boundaries are not ecologically based (i.e., based on vegetation type, habitat, landform, and/or soils), especially for the areas overlapping with the project extent, and, while important to guide future conservation efforts, these boundaries are primarily administrative.

Lastly, commenters asserted that the biological impact analysis was improperly confined to the Audubon GEA IBA. As noted above, impacts were assessed regardless of conservation or administrative boundaries for all biological resources. However, significant impacts on species and species habitat are often identified in natural, undeveloped areas as the existing habitat quality in these areas is high (and thus the effect of habitat loss or degradation to the local or regional population is greater). This is true for the impact analysis for shorebirds and waterfowl. The Authority determined that the impacts on migrating and breeding shorebird habitat within the Audubon GEA IBA were significant, and, as a result, that is where mitigation is focused. The Audubon GEA IBA was used to identify/confine the location of significant impacts because it was inclusive of the natural areas along the rail alignment and was specifically designated for the species being analyzed (shorebirds and waterfowl). That is, it was a convenient and appropriate boundary to identify impacts of significant effects. Consequently, as described in Impact BIO#44 in the Draft EIR/EIS, the Authority identified significant noise impacts on shorebirds and waterfowl within the Audubon GEA IBA.

In summary, for the purposes of assessing impacts on shorebirds and waterfowl, the Authority used a relevant, biologically appropriate boundary to identify significant effects. To help clarify the applicability of various GEA boundaries to the biological resources impact analysis, the Authority has added detail to the description and history of the GEA in the Final EIR/EIS. More broadly, the biological resources impact assessment correctly considered impacts on special-status species, wetlands, conservation areas, and wildlife movement, regardless of whether those resources were located within one or more of the administrative boundaries of the GEA.

17.7.5 SJM-Response-BIO-5: Lighting Impacts on Wildlife

Commenters asserted that the Draft EIR/EIS fails to disclose the location, height, or intensity of lighting associated with the operations of the project. Furthermore, commenters assert that the Draft EIR/EIS fails to conduct an adequate evaluation of measures to reduce light and glare within natural areas.

The Authority acknowledges that the Draft EIR/EIS provided limited information on operational lighting. Additional information regarding lighting at operational facilities and on trains, has been added in appropriate locations in Chapter 2, Alternatives, in the Final EIR/EIS. Specifically, information on vehicle lighting has been added to Section 2.4.2, Vehicles, of the Final EIR/EIS. Information on station lighting has been added to Section 2.4.3, Stations, of the Final EIR/EIS. For all track profile types, Section 2.4.4, Infrastructure Components, clarifies that flood lighting or night lighting would not be installed along the HSR guideway for track operations or maintenance, except for specific facilities, including maintenance and systems sites, local facilities where lighting is needed for public safety, and for emergency use at tunnel portals. Section 2.4.5, Grade Separations, clarifies that temporary, portable lighting would be used for maintenance and that roadway lighting would be provided consistent with existing roadway standards; Section 2.4.6, At-Grade Crossings, also specifies lighting consistent with existing roadway standards. Section 2.4.7, Traction Power Distribution, notes that lighting would be provided but would be minimized using motion sensors, height limits, shielding, downward-facing orientation, and substitution of infrared light sources where feasible. Chapter 2 also clarifies lighting requirements to meet safety standards for electric network upgrades, signaling and train-control elements, and maintenance facilities. Those maintenance facilities include the maintenance-of-way facility (near Gilroy) and the maintenance-of-way siding (in the San Joaquin Valley), including the type and height of lighting proposed, and measures used to minimize lighting effects outside of the facility. The fencing around both facilities would be screened, which would help to minimize light spillover outside the facilities. For all essential lighting necessary for safety and security, Chapter 2 clarifies that lighting would incorporate motion sensors, height limits, shielding, and downward-facing orientation where feasible and consistent with safety and security.

The Authority has also revised the analysis of lighting impacts (Impact BIO#47), based on detailed analysis in Appendix 3.7-F of the Revised/Supplemental Draft EIR/EIS. Although the Draft EIR/EIS concluded a less-than-significant impact from artificial light, the revised analysis finds a significant impact on wildlife movement for all four alternatives because artificial light would interfere with existing wildlife movement corridors. Those impacts would be mitigated by mitigation measures BIO-MM#80: Minimize Permanent Intermittent Noise and Visual Impacts on Wildlife Movement, and BIO-MM#89: Minimize the Impacts of Operational Lighting on Wildlife Species. BIO-MM#80 requires installation of barriers at certain wildlife passage corridors that will serve to minimize wildlife exposure to artificial light. BIO-MM#89 minimizes operational lighting and, where feasible, requires that operational lighting use longer-wavelength light (green or red) that minimizes the impacts of artificial light on wildlife physiology. The Final EIR/EIS concludes that lighting disturbance of wildlife would be less than significant after mitigation.

17.7.6 SJM-Response-BIO-6: Noise Impacts on Wildlife

Commenters identified concerns that noise produced by passing HSR trains would affect wildlife in a variety of different ways, such as stress, altered behavior, reduced reproductive success, and reduced ability to find food, avoid predators, or communicate with other animals. Commenters also asserted that train noise would prevent wildlife from crossing the rail alignment. Comments

criticized the form and information sources used in the analysis and cited other information sources not used in the analysis.

The following response describes how noise impacts on wildlife were assessed, discusses information relevant to the noise generated by HSR trains, discusses how different kinds of wildlife respond to noise, reviews known existing wildlife use of the study area, and presents conclusions regarding potential noise impacts.

Analysis of Noise Impacts on Wildlife

Noise impacts on wildlife were first evaluated in the context of a stakeholder input analysis focused on impacts on birds in the GEA IBA. That information informed a detailed analysis that appeared in the WCA (Authority 2020a, Appendix C, as cited in Section 3.7, Biological and Aquatic Resources, of the Draft EIR/EIS). Impacts were addressed in the Draft EIR/EIS under Impact BIO#44; impacts were found to be significant due to effects on avifauna of the Upper Pajaro River IBA and the GEA IBA, with mitigation required in the form of Mitigation Measure BIO-MM#80. In response to concerns about the mountain lion and comments on the Draft EIR/EIS, the analysis of noise impacts on bats and terrestrial mammals was revised and presented in Appendix 3.7-E, Supplemental Noise Analysis on Terrestrial Wildlife Species, of the Revised/Supplemental Draft EIR/EIS, with accompanying changes to Impact BIO#44 and Mitigation Measure BIO-MM#80. The changes extended the finding of significant impact to include impacts on mountain lion, San Joaquin kit fox, and Fresno kangaroo rat, with mitigation required to address those impacts.

Noise Produced by Operational HSR Trains

An overview of noise production by HSR trains in general appears in the WCA noise analysis. That analysis discusses the speed of trains, the duration of noise experienced by a nearby receptor, the frequency distribution of the noise produced, and related issues characterizing the noise likely to be produced by operating trains under the project. Horn noise is separately considered in Appendix 3.7-E of the Revised/Supplemental Draft EIR/EIS. Impact BIO#44 of the Draft EIR/EIS presents maps of noise exposure in the Upper Pajaro River IBA and the GEA IBA, based on modeled noise in those areas. Appendix 3.7-E of the Revised/Supplemental Draft EIR/EIS discusses background sound levels measured in the vicinity of the proposed rail alignment and presents a table, with accompanying discussion, of potential noise exposure in areas (other than the IBAs) subject to train noise. The analysis also discusses the likely effectiveness of mitigation measures in attenuating that noise. The analysis is highly conservative, assuming noise exposure at distances considerably greater than those predicted by Shilling et al. (2020), a source repeatedly cited by commenters.

Scientific Understanding of How Wildlife Respond to Noise

The WCA cites and discusses multiple sources of published information regarding how well birds hear and how they have been observed to respond to noise from various different sources and at various different amplitudes. These data are used to designate thresholds of effect for different types of potential impact on birds. Commenters provided no substantial sources of information to alter this analysis. The Draft EIR/EIS analysis for Impact BIO#44 relies mainly on FRA guidance for evaluating noise impacts on wildlife other than birds, and some commenters were critical of that analysis. The analysis was supplanted by a revised analysis of noise impacts on mammals. The analysis also noted that vibration impacts on amphibians and reptiles are of substantially greater concern than noise impacts, and commenters provided no information to alter this conclusion. The revised analysis of impacts on mammals appears in Appendix 3.7-E of the Revised/Supplemental Draft EIR/EIS. The analysis finds that mammals in general have sound perception comparable to or better than that of humans; that they generally rely on sound to find food and/or evade predators and sometimes to communicate; that HSR noise has the potential to disrupt these behaviors; and that the impact potential varies widely between species. Appendix 3.7-E of the Revised/Supplemental Draft EIR/EIS also provides a species-specific analysis of potential noise impacts on all special-status mammals in the study area, as well as a more generalized analysis for non-special-status mammals.

Wildlife and Noise in the Study Area

The existing acoustic environment in the study area and its potential to affect wildlife is evaluated in most detail in the WCA and in the Revised/Supplemental Draft EIR/EIS Appendix 3.7-E. The WCA evaluates potential impacts on birds, finding greatest impact potential in the IBAs, where existing background noise sources are of low intensity, and the HSR alignment would permanently alter that environment in a substantial area used by birds. Appendix 3.7-E evaluates potential impacts on mammals, finding a complex acoustic environment in which impacts are largely constrained by a few important points:

- HSR train noise would be brief and intermittent and would be nearly absent during the late night and early morning hours.
- Much of the alignment outside of rural areas adjoins an existing major transportation corridor that partially masks HSR noise on one side of the alignment, but noise can be propagated for a considerable distance on the other side.
- All special-status and most common mammals are primarily nocturnal and/or are burrowing animals.
- Wildlife habitat is nearly absent in urban areas near San Jose, Morgan Hill, and Gilroy.
- HSR noise has greatest potential to affect mammals at important wildlife passage corridors, which are generally located in Coyote Valley, upper Pacheco Creek, and the Diablo Range from the east portal of the Pacheco Pass tunnel to the west edge of the San Joaquin Valley.
- Camera trap and other data sources document ongoing mammal use of existing major highway crossings at these important wildlife passage corridors.

Findings of the Impact Analysis

The impact analysis for birds appears in the WCA and in the Draft EIR/EIS Impact BIO#44. That analysis finds significant impacts on birds in the IBAs, including a zone of potential hearing damage near the alignment, as well as a more extensive zone of potential behavioral and stress-related effects in a larger area. Mitigation is required in the form of Mitigation Measure BIO-MM#80, which requires noise barriers in the IBAs to minimize noise (approximately a 10 decibel [dB] reduction) and visual disturbance of birds near the rail alignment. Additionally, Mitigation Measure BIO-MM#58 provides compensatory mitigation for bird habitat loss attributed to noise impacts. The Draft EIR/EIS concluded that with implementation of the required mitigation, operational noise impacts on wildlife would be less than significant.

The impact analysis for mammals appears in Revised/Supplemental Draft EIR/EIS Appendix 3.7-E and Revised/Supplemental Draft EIR/EIS Impact BIO#44. That analysis finds that, in areas where HSR train noise is not masked by other noise sources, mammals could experience impaired foraging and/or predator evasion abilities and could be deterred from crossing the rail alignment. For most mammals, at most places, most of the time, those potential impacts are less than significant due to a wide variety of factors, such as evidence of existing habituation to existing noise sources or evidence of peak activity during times of the day when trains would be few or absent. However, due mainly to their high sensitivity to human activity, significant impacts are likely for mountain lion, San Joaquin kit fox, and Fresno kangaroo rat. Mitigation is required in the form of Mitigation Measure BIO-MM#80, which requires installation of noise barriers to minimize noise (approximately a 10 dBA reduction) at important migration corridors in Coyote Valley, near Pacheco Creek west of the Pacheco Pass tunnel, and near the California Aqueduct east of the Pacheco Pass tunnel. The barriers installed to mitigate noise impacts on birds, also, would benefit mammals in those areas (principally Fresno kangaroo rat near the GEA).

With implementation of the required mitigation, noise impacts on all terrestrial wildlife would be less than significant.

17.7.7 SJM-Response-BIO-7: Clarifications Regarding Project Conflicts with the Santa Clara Valley Habitat Plan

Appendix B of Comment Submission #1618 from the Peninsula Open Space Trust, The Nature Conservancy, and the SCVOSA provided comments on Table 1, Assessment of Potential Conflicts with the Santa Clara Valley Habitat Plan, and on Table 2, Assessment of Potential Conflicts with the Santa Clara Valley Greenprint, both in Appendix I of the Biological and Aquatic Resources Technical Report (Authority 2020a, as cited in Section 3.7, Biological and Aquatic Resources, of the Draft EIR/EIS).

The Authority notes that commenters asserted that the project could cause conflicts with very generally described “Strategies, Goals, and Design Principles,” as outlined in the Habitat Plan. These can most accurately be described as general policies for the Habitat Agency to follow and try to attain (i.e., aspirational in nature). None of these general policies have specific actions associated with them. Although these general policies may apply to resources affected by the project, those effects do not preclude the ability of the SCVHA to implement its policies in its day-to-day actions or make it infeasible for the SCVHA to implement its policies. Consequently, the Authority still concludes that no conflicts with general strategies, goals, or design principles would occur.

At the time of the conflicts analysis on specific actions, no direct effects on conservation reserve lands were expected to occur. It has since been determined that certain reserve system lands managed by the SCVHA and The Nature Conservancy would be partially affected by the project footprint. The revised assessment of impacts, including acreages affected under each alternative, appears in Section 3.7, Biological and Aquatic Resources, Impact BIO#51 of the Final EIR/EIS. The impact would be significant, and mitigation is required. Impacts on SCVHA reserve lands are also identified in Impact BIO#53, which identifies a potential conflict with Action LAND-R3 of the SCVHP. Mitigation for these impacts is required and would include the following mitigation measures.

- BIO-MM#9: Prepare and Implement a Groundwater Management Adaptive Management and Monitoring Plan
- BIO-MM#10: Prepare a Compensatory Mitigation Plan for Species and Species Habitat
- BIO-MM#79: Provide Wildlife Movement between the Santa Cruz Mountains and Diablo Range
- BIO-MM#84: Provide Compensatory Mitigation for Impacts on Conservation Easements
- BIO-MM#85: Provide Compensatory Mitigation for Permanent Impacts on California Sycamore Woodland at the Pacheco Creek Open Space Regional Reserve

These measures ensure that compensatory mitigation will be provided for impacts on conservation reserves. Commenters identified concerns that mitigation measures would be implemented without their input. BIO-MM#10 has been revised in the Final EIR/EIS to expressly state that “title to lands acquired in fee would be transferred to the most suitable landowner/manager in the region, which will be determined in coordination with conservation agencies and organizations,” and that the conservation management plan would include “coordination with local conservation agencies and organizations to ensure that the mitigation options promote and don’t conflict with the conservation goals in the region.” These provisions apply to all lands where SCVHA has an interest.

Commenters also identified concerns that special-status species such as tricolored blackbirds would not be protected if they occurred on conservation reserve lands. This is incorrect. All provisions of the analysis relating to special-status species are applicable regardless of current land ownership.

The following includes copies of Tables 1, 2, and 3 from Appendix I of the Biological and Aquatic Resources Technical Report (Authority 2020a, as cited in Section 3.7 of the Draft EIR/EIS). Although the report and its appendices will not be reissued, the information shown here serves to

show to commenters how the analysis was revised to address improved knowledge and their stated concerns. The following text is shown with redline and strikethrough indicating modifications to the assessment in light of revised understanding of the extent of impacts on conservation reserve lands. This version only includes those rows of each table that were commented on in comment submission #1618 from the Peninsula Open Space Trust, The Nature Conservancy, and the SCVOSA.

Table 1 Assessment of Potential Conflicts with the Santa Clara Valley Habitat Plan

Action Type ¹	Statement of Action ²	Function ³	Assessment of Conflict Potential
Acquisition	LAND-WP4. Acquire habitat that is adjacent to permanently protected aquatic resources with a high potential to support CRLF and is in the East San Francisco Bay Recovery Unit for red-legged frog (USFWS 2002) (Coyote Creek, Pacheco, and Pescadero Watersheds).	A	Action does not include quantitative targets for performance, thus the project alternatives would not have any potential to conflict with performance of action.
Acquisition	LAND-R3. Acquire in fee title or obtain conservation easements on lands that protect at least 40 acres of existing Central California sycamore alluvial woodland to ensure that this very rare and threatened land cover type is preserved in the study area.	Q	Effects along Pacheco Creek on an appreciable percentage of this habitat type in the plan area. Moreover, the greatest effects occur in an area not modeled as sycamore woodland (although it is) that SCVHA has recently acquired. It is possible that project alternatives could be modified to avoid this effect, which in the absence of mitigation. This would constitute a significant impact requiring compensatory mitigation.
Management	CHAP-1. Conduct prescribed burns in chaparral and northern coastal scrub to maintain canopy gaps and promote regeneration. Use targeted studies to inform locations and frequency.	A	Action does not include quantitative targets for performance, and <u>no sites for this action have been identified in or are adjoining the project footprint</u> ; thus the project alternatives would not have any <u>have no identified</u> potential to conflict with performance of action.
Management	GRASS-1. Continue or introduce livestock and native herbivore (e.g., elk) grazing in a variety of grazing regimes.	A	This action only occurs with Reserve System lands, which would not occur within the project extent <u>would occur within the Pacheco Creek Regional Open Space Preserve, where the project would have both temporary and permanent effects. Compensatory mitigation for those impacts would address potential so there is no potential for a conflict with action GRASS-1.</u>
Management	GRASS-4. Conduct selected seeding of native forbs and grasses in the Reserve System.	A	<u>This action would occur within the Pacheco Creek Regional Open Space Preserve, where the project would have both temporary and permanent effects. Compensatory mitigation for those</u>

Action Type ¹	Statement of Action ²	Function ³	Assessment of Conflict Potential
			<u>impacts would address potential</u> This action only occurs with Reserve System lands, which would not occur within the project extent, so there is no potential for a conflict with action GRASS-4.
Management	GRASS-6. Introduce livestock grazing where it is not currently used, and where conflicts with covered activities are minimized, to reduce vegetative cover and biomass that currently excludes ground squirrel and encourage ground squirrel colonization of new areas within the Reserve System.	A	This action would occur within the <u>Pacheco Creek Regional Open Space Preserve</u> , where the project would have both temporary and permanent effects. <u>Compensatory mitigation for those impacts would address potential</u> This action only occurs with Reserve System lands, which would not occur within the project extent, so there is no potential for a conflict with action GRASS-6.
Management	GRASS-9. Create and maintain artificial burrows to encourage colonization of sites where ground squirrels establishment is not feasible or during the interim before ground squirrel colonies naturally establish.	A	This action would occur within the <u>Pacheco Creek Regional Open Space Preserve</u> and possibly within <u>Pajaro Ranch</u> . <u>Compensatory mitigation for impacts would address potential</u> This action only occurs with Reserve System lands, which would not occur within the project extent, so there is no potential for a conflict with action GRASS-9.
Management	OAK-1. Conduct prescribed burns in low-density oak woodlands to enhance the community and to reduce non-native, invasive grass cover beneath oaks and encourage growth of a native understory and oak seedlings.	A	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential for</u> Action does not include quantitative targets for performance, thus the project alternatives would not have any potential to conflict with performance of action.
Management	POND-13. Excavate sections of ponds to provide deeper pools that will be utilized by California red-legged frog adults and sub-adults and western pond turtles, while maintaining shallow areas to provide rearing habitat for California red-legged frog tadpoles, California tiger salamander larvae, and western pond turtle hatchlings.	A	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential for</u> This action only occurs with Reserve System lands, which would not occur within the project extent, so there is no potential for a conflict with action POND-13.
Management	POND-16. Restore freshwater marsh, seasonal wetlands, and/or ponds that will support dense reed-like vegetation (cattails) or other native vegetation that will attract nesting tricolored blackbirds.	A	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential for</u> This action only occurs with Reserve System lands, which would not occur within the project extent,

Action Type ¹	Statement of Action ²	Function ³	Assessment of Conflict Potential
			so there is no potential for a conflict with action POND-16.
Management	POND-17. In areas with non-native vegetation (e.g., Himalayan blackberry) that supports existing tricolored blackbird colonies, initiate a gradual (3-4 year) transition from non-native vegetation to native vegetation that is structurally similar.	A	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential.</u> This action only occurs with Reserve System lands, which would not occur within the project extent, so there is no potential for a conflict with action POND-17.
Management	POND-10. In addition to the creation of ponds described in POND-9, create up to 52 acres of ponds in-kind within the Reserve System to increase the amount available habitat and enhance connectivity among existing ponds and wetlands if all anticipated impacts occur.	P	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential.</u> This action only occurs with Reserve System lands, which would not occur within the project extent, so there is no potential for a conflict with action POND-10.
Management	GRASS-2. Conduct prescribed burns. Use targeted studies to inform methods, timing, location, and frequency.	Q	<u>This action would occur within the Pacheco Creek Regional Open Space Preserve, where the project would have both temporary and permanent effects. Compensatory mitigation for those impacts would address potential conflict with Project alternatives intersect a substantial acreage of modeled grassland habitat for these species, but the affected area is a very small fraction of this habitat type in the plan area. Also, most of project extent would be in agricultural/developed areas where prescribed burning is not feasible, and in general, prescribed burning has been a minor management tool under the SCVHP due to regulatory challenges in getting burn permits. Accordingly, the project alternatives would not affect the feasibility of completing action LAND-WP1aGRASS-2.</u>
Management	LM-7a. Restore a minimum of 1.0 miles of stream, 50 acres of riparian forest and scrub, and 20 acres of freshwater marsh, and create 20 acres of ponds to contribute to species recovery.	Q	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential.</u> Project alternatives would affect few streams or freshwater wetlands relative to their abundance, and would affect a small linear length of streams. All project alternatives would affect a variety of ponds in the Pacheco

Action Type ¹	Statement of Action ²	Function ³	Assessment of Conflict Potential
			and Llagas Creek watersheds, but the number and area of effects is small relative to the availability of pond habitat in these areas. Project alternatives would also have few effects on riparian forest and scrub, apart from the sycamore forests along Pacheco Creek (treated in action LAND-R3); however those effects would not be extensive enough to affect the feasibility of completing action LM-7a.
Management	POND-19. Restore a minimum of 20 acres and up to 45 acres of freshwater marsh within the Reserve System in the Santa Cruz Mountains, Santa Clara Valley, and Diablo Range.	Q	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential to</u> Project alternatives would not affect any freshwater marsh in the Santa Cruz Mountains or in the Diablo Range. One section of marsh on lower Llagas Creek would be affected by a rail crossing under Alternative 3. This represents a very small effect relative to the availability of freshwater marsh in the Santa Clara Valley, so the project alternatives would not affect the feasibility of completing action POND-19.
Management	POND-6. Restore 20 acres of perennial freshwater marsh within the Reserve System in suitable sites and those likely to support covered species.	Q	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential to</u> Project alternatives would not affect any freshwater marsh in the Santa Cruz Mountains or in the Diablo Range. One section of marsh on lower Llagas Creek would be affected by a rail crossing under Alternative 3. This represents a very small effect relative to the availability of freshwater marsh in the Santa Clara Valley, so the project alternatives would not affect the feasibility of completing action POND-6.
Management	POND-7. In addition to the perennial freshwater marsh restoration described in POND-6, restore up to 25 acres of perennial freshwater marsh within the Reserve System in the Santa Cruz Mountains, Santa Clara Valley, and Diablo Range.	Q	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential to</u> Project alternatives would not affect any freshwater marsh in the Santa Cruz Mountains or in the Diablo Range. One section of marsh on lower Llagas Creek would be affected by a rail crossing

Action Type ¹	Statement of Action ²	Function ³	Assessment of Conflict Potential
			under Alternative 3. This represents a very small effect relative to the availability of freshwater marsh in the Santa Clara Valley, so the project alternatives would not affect the feasibility of completing action POND-7.
Management	POND-9. Create at least 20 acres of ponds at 40 sites, at least 10 sites in the Santa Cruz Mountains and 20 sites in the Diablo Range.	Q	If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the potential to Project alternatives would affect a variety of ponds in the Pacheco and Llagas Creek watersheds (representing the Santa Clara Valley and Diablo Range areas). However the number and area of effects is small relative to the availability of pond habitat in these areas, so the effects would not affect the feasibility of completing action POND-9.
Management	STREAM-4. Replace concrete, earthen or other engineered channels as part of the 10.4 miles of stream restoration to restore floodplain connectivity. Location and length will be determined by site-specific conditions.	Q	This action would occur within the Pacheco Creek Regional Open Space Preserve, where the project would have both temporary and permanent effects. Compensatory mitigation for those impacts would address potential conflict with Project alternatives would affect few streams relative to their abundance, and would affect a small linear length of streams. Project alternatives therefore would not affect the feasibility of completing action STREAM-4.
Management	STREAM-5. Replace confined channels to restore floodplain connectivity and commensurate functions as part of the 10.4 miles of stream restoration. Location and length will be determined by site-specific conditions.	Q	This action would occur within the Pacheco Creek Regional Open Space Preserve, where the project would have both temporary and permanent effects. Compensatory mitigation for those impacts would address potential conflict with Project alternatives affect few streams relative to their abundance, and affect a small linear length of streams. Therefore the project alternatives would not affect the feasibility of completing action STREAM-5.
Management	LM-2. When replacing small culverts ensure that the culvert has a natural bottom and is large enough for larger mammals such as deer and mountain lions to pass, if feasible. Culverts must provide direct movement from one side of the road to the other and ensure that the	S	BIO-IAMF#25 would provide equivalent protection within the project footprint for each alternative. Installation of wildlife passage structures, combined with implementing Mitigation Measures BIO-MM#77a, BIO-MM#77b, BIO-MM#78, and BIO-MM#79, would avert potentially

Action Type ¹	Statement of Action ²	Function ³	Assessment of Conflict Potential
	culvert is visible to the target species (i.e., do not obscure entrance with vegetation). Install fencing or other features that will direct wildlife towards the culvert or other safe crossing within the first 20 years of implementation.		<u>significant impacts on wildlife passage</u> , so there is no potential for a conflict with action LM-2.
Management	LM-3. Where structurally possible, replace culverts with free span bridges to ensure free movement for wildlife under roadways.	S	BIO-IAMF#25 would provide equivalent protection within the project footprint for each alternative. <u>Installation of wildlife passage structures, combined with implementing Mitigation Measures BIO-MM#77a, BIO-MM#77b, BIO-MM#78, and BIO-MM#79, would avert potentially significant impacts on wildlife passage</u> , so there is no potential for a conflict with action LM-3.
Management	LM-4. Ensure that median barrier removal and/or median perforations are considered as alternatives during project design.	S	BIO-IAMF#25 would provide equivalent protection within the project footprint for each alternative. <u>Installation of wildlife passage structures, combined with implementing Mitigation Measures BIO-MM#77a, BIO-MM#77b, BIO-MM#78, and BIO-MM#79, would avert potentially significant impacts on wildlife passage</u> , so there is no potential for a conflict with action LM-4.
Management	LM-5. Remove median barriers or perforate sections of median barriers along roadways to improve successful wildlife crossings and install fencing or other features to direct wildlife to those open sections within first 20 years of implementation. Use feasibility study to determine location and length of barrier removal.	S	BIO-IAMF#25 would provide equivalent protection within the project footprint for each alternative. <u>Installation of wildlife passage structures, combined with implementing Mitigation Measures BIO-MM#77a, BIO-MM#77b, BIO-MM#78, and BIO-MM#79, would avert potentially significant impacts on wildlife passage</u> , so there is no potential for a conflict with action LM-5.
Management	POND-3. Plant native emergent vegetation around the perimeter and in ponds and wetlands.	S	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the BIO-IAMF#5 and BIO-IAMF#6 would provide equivalent protection within the project footprint for each alternative</u> , so there is no potential for a conflict with action POND-3.
Management	STREAM-2. Plant and/or seed in native understory and overstory riparian vegetation within 15 feet of the edge of the low-flow channel to create structural diversity, provide overhead cover, and	S	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the BIO-IAMF#5 and BIO-IAMF#6 would provide equivalent</u>

Action Type ¹	Statement of Action ²	Function ³	Assessment of Conflict Potential
	moderate water temperature at all riparian restoration sites.		protection within the project footprint for each alternative, so there is no potential for a conflict with action STREAM-2.
Management	STREAM-3. Plant and/or seed in native riparian vegetation in gaps in existing riparian corridors, or re-establish severely degraded or historic riparian corridors, to promote continuity within conservation lands.	S	<u>If this action were performed within conservation reserve lands subject to direct project effects, compensatory mitigation for those impacts would address the BIO-IAMF#5 and BIO-IAMF#6 would provide equivalent protection within the project footprint for each alternative, so there is no potential for a conflict with action STREAM-3.</u>

¹ Action types are Acquisition, which are targeted on acquisition of certain lands for conservation; or Management, which prescribe how acquired conservation lands are to be managed.

² Verbatim statement of the action, taken from the SCVHP.

³ Action functions, defined only within this analysis, include the following:

A = Aspirational; an action that has no quantitative performance parameters and thus can be achieved even if some lands are withdrawn for the purposes of the Project.

P = Plan-based; an action that can only be implemented by the SCVHA as part of their administrative duties.

Q = Quantitative; an action that has quantitative performance parameters and thus there is the potential for the Project to conflict with completion of the action.

S = Shared; an action that would be implemented, under a different regulatory authority, if it were to occur within the footprint of the Project.

CRLF = California red-legged frog

USFWS = U.S. Fish and Wildlife Service

SCVHP = Santa Clara Valley Habitat Plan

SCVHA = Santa Clara Valley Habitat Agency

Table 2 Assessment of Potential Conflicts with the Santa Clara Valley Greenprint

Action Type	Statement of Goal or Strategy	Assessment of Conflict Potential
Goal	Protect and manage an interconnected system of wildlands and natural areas to support native habitats and species and to ensure resilience to a changing environment.	Goal does not include quantitative or specific targets for performance, thus the project alternatives only have potential to conflict with attainment of goal if there is a conflict with one of the Strategies for Protecting Wildlands and Natural Areas listed in this table.
Strategy	1. Focus land conservation efforts in areas critical for the long-term viability of native species and biological communities and the ecosystem services they provide.	No specific focus areas are named, and there are no quantitative or measurable targets named under this strategy. Elsewhere the Greenprint identifies natural communities of concern. With regard to potential effects from the project alternatives, the Greenprint and the SCVHP include the same areas of potential effect, apart from a small area within the City of Gilroy that is not under SCVOSA jurisdiction. Since <u>To the extent that</u> the analysis of SCVHP effects on natural communities (Table 1) did not find any identified potential conflicts, there would also be no conflict between the project alternatives and Strategy 1. <u>The approaches to assess and address those conflicts are identified in Table 1.</u>
Strategy	3. Protect and maintain connections between large open space parcels to provide large habitat blocks, ensure critical linkages, and provide climate resilience.	Areas critical for habitat connectivity are identified on Figure 5 of the Greenprint. There are no quantitative or measurable targets named under this strategy. With regard to potential effects on connectivity, all areas of concern identified in the Greenprint are also identified in the SCVHP. Since the analysis of SCVHP effects on habitat connectivity (Table 1) found that a final determination of the potential for conflict must await conclusion of the analysis of project extent effects on connectivity, determination of the potential for conflict between the project alternatives and Strategy 3 must also await conclusion of that analysis- <u>Impacts and mitigation for those impacts are identified in the Final EIR/EIS. The impact is less than significant after mitigation, thus there is low potential for conflict with Strategy 3. To the extent that there is a conflict, the agencies involved in the Santa Clara Valley Greenprint would be engaged during implementation of required mitigation for wildlife connectivity impacts.</u>

Sources: Santa Clara Valley Open Space Authority 2014
 SCVHP = Santa Clara Valley Habitat Plan
 SCVOSA = Santa Clara Valley Open Space Authority

Table 3 Assessment of Potential Conflicts with the Coyote Valley Landscape Linkage

Action type	Statement of Goal, Design Principle, or Proposed Crossing Modification	Assessment of Conflict Potential
Goal	Permanently protect habitat connectivity for terrestrial and aquatic species.	Goal does not include quantitative or other specific targets for performance. Project alternatives only have the potential to conflict with attainment of goal if there is a conflict with one of the associated Design Principles or proposed wildlife crossings (which are listed below in this table). <u>Moreover, pursuant to Mitigation Measures BIO-MM#10, BIO-MM#77a, and BIO-MM#77b, organizations involved in the Coyote Valley Landscape Linkage would be engaged in project mitigation undertaken to address significant project impacts on wildlife habitat connectivity.</u>
Goal	Provide live-in and dispersal habitat for full community of species, including sensitive species, that can also facilitate daily and seasonal migrations, as well as long-term range shifts as species adapt to changing climate.	Goal does not include quantitative or other specific targets for performance. Project alternatives only have the potential to conflict with attainment of goal if there is a conflict with one of the associated Design Principles or proposed wildlife crossings (which are listed below in this table). <u>Moreover, pursuant to Mitigation Measure BIO-MM#10, organizations involved in the Coyote Valley Landscape Linkage would be engaged in project mitigation undertaken to address significant project impacts on wildlife habitat.</u>
Goal	Accommodate the range of taxa and guilds between mountain ranges, even those that are not currently in the area but might be in the future as species shift distribution in response to climate change.	Goal does not include quantitative or other specific targets for performance. Project alternatives only have the potential to conflict with attainment of goal if there is a conflict with one of the associated Design Principles or proposed wildlife crossings (which are listed below in this table). <u>Analysis has not identified a significant potential for the project to conflict with this goal.</u>
Goal	Protect, expand, and connect habitat patches in a way that minimizes edge effects.	Goal does not include quantitative or other specific performance targets by which the project's effects can be evaluated. The project alternatives only have the potential to conflict with attainment of goal if there is a conflict with one of the associated Design Principles or proposed wildlife crossings (which are listed below in this table). <u>Moreover, pursuant to Mitigation Measures BIO-MM#10, BIO-MM#77a, and BIO-MM#77b, organizations involved in the Coyote Valley Landscape Linkage would be engaged in project mitigation undertaken to address significant project impacts on wildlife habitat and habitat connectivity.</u>

Action type	Statement of Goal, Design Principle, or Proposed Crossing Modification	Assessment of Conflict Potential
Goal	Prevent linkage fragmentation from future incompatible land uses (e.g. urban development, transportation projects, etc.).	Goal does not include quantitative or other specific performance targets by which the project's effects can be evaluated. The project alternatives only have the potential to conflict with attainment of goal if there is a conflict with one of the associated Design Principles or proposed wildlife crossings (which are listed below in this table). <u>Moreover, pursuant to Mitigation Measures BIO-MM#10, BIO-MM#77a, and BIO-MM#77b, organizations involved in the Coyote Valley Landscape Linkage would be engaged in project mitigation undertaken to address significant project impacts on wildlife habitat or habitat connectivity.</u>
Goal	Use landscape resilience planning principles for sustainability (Beller <i>et al.</i> 2015) in an urban ecosystem in the face of a changing and uncertain future: <ul style="list-style-type: none"> • Incorporate as much terrestrial and aquatic landform diversity, complexity, and connectivity as possible. • Provide redundancy of elements (both habitat types and safe crossings). • Consider historical ecology to understand the driving factors of setting. • Provide space for dynamic natural processes (e.g. flooding) to operate. • Develop the project at the scale at which landscape processes can operate meaningfully. 	Goal does not include quantitative or other specific performance targets by which the project's effects can be evaluated. The project alternatives only have the potential to conflict with attainment of goal if there is a conflict with one of the associated Design Principles or proposed wildlife crossings (which are listed below in this table). <u>Moreover, pursuant to Mitigation Measures BIO-MM#10, BIO-MM#77a, and BIO-MM#77b, organizations involved in the Coyote Valley Landscape Linkage would be engaged in project mitigation undertaken to address significant project impacts on wildlife habitat or habitat connectivity.</u>
Design Principle	Maintain a wide wildland area.	Design principle is qualitative in nature and does not provide specific performance targets by which the project's effects can be evaluated. The project alternatives only have the potential to conflict with attainment of the design principle if there is a conflict with one of the proposed wildlife crossings listed below in this table. <u>Although the project potentially conflicts with this design principle due to significant impacts on wildlife habitat connectivity (Impact BIO#43), those impacts are less than significant with mitigation. Pursuant to Mitigation Measures BIO-MM#10, BIO-MM#77a, and BIO-MM#77b, organizations involved in the Coyote Valley Landscape Linkage would be engaged in design and implementation of required mitigation.</u>

Action type	Statement of Goal, Design Principle, or Proposed Crossing Modification	Assessment of Conflict Potential
Design Principle	Protect nature's stage – areas with the least fragmentation, existing protected lands, and the most landform diversity and topographic and hydrological complexity	Design principle is qualitative in nature and does not provide specific performance targets. <u>Although the project potentially conflicts with this design principle due to significant impacts on wildlife habitat connectivity (Impact BIO#43), those impacts are less than significant with mitigation. Pursuant to Mitigation Measures BIO-MM#10, BIO-MM#77a, and BIO-MM#77b, organizations involved in the Coyote Valley Landscape Linkage would be engaged in design and implementation of required mitigation. The project alternatives only have the potential to conflict with attainment of the design principle if there is a conflict with one of the proposed wildlife crossings listed below in this table.</u>
Design Principle	Restore freshwater wetlands and a more natural hydrologic regime.	Design principle is qualitative in nature and does not provide specific performance targets. <u>The project alternatives only have the potential to conflict with attainment of the design principle if there is a conflict with one of the proposed wildlife crossings listed below in this table. Although the project potentially conflicts with this design principle due to a variety of hydrologic impacts, impacts on wetland resources, and impacts on the habitat of plants and wildlife dependent on wetlands and hydrologic regime, those impacts are all either less than significant or less than significant with mitigation. Pursuant to Mitigation Measure BIO-MM#10, which is triggered by all impacts requiring compensatory mitigation for plants or wildlife, organizations involved in the Coyote Valley Landscape Linkage would be engaged in design of required mitigation.</u>
Design Principle	Restore a mosaic of natural communities along the valley floor, especially rare habitat that complements wetlands, such as Valley oak woodlands and savanna.	Design principle is qualitative in nature and does not provide specific performance targets. <u>Although the project potentially conflicts with this design principle due to removal of sensitive habitat types, those impacts are all either less than significant or less than significant with mitigation. Pursuant to mitigation measure BIO-MM#10, which is triggered by all impacts requiring compensatory mitigation for plants or wildlife, organizations involved in the Coyote Valley Landscape Linkage would be engaged in design of required mitigation. The project alternatives only have the potential to conflict with attainment of the design principle if there is a conflict with one of the proposed wildlife crossings listed below in this table.</u>

Action type	Statement of Goal, Design Principle, or Proposed Crossing Modification	Assessment of Conflict Potential
Design Principle	Improve permeability throughout the linkage by maintaining as much open space as possible and constraining further urban development.	Dedicated crossings and project design features are intended to minimize fragmentation at linkages within the Coyote Valley. <u>Although the project potentially conflicts with this design principle due to habitat loss, degradation, and fragmentation, those impacts are all either less than significant or less than significant with mitigation. Pursuant to Mitigation Measures BIO-MM#10, BIO-MM#77a, and BIO-MM#77b, organizations involved in the Coyote Valley Landscape Linkage would be engaged in design and implementation of required mitigation.</u>
Design Principle	Increase the number of engineered strategic connections across the more significant barriers.	Dedicated crossings and project design features are intended to minimize fragmentation at linkages within the Coyote Valley and may contribute to <u>improvements remediation</u> of existing barriers; in particular, there are <u>currently no wildlife crossings of Monterey Road and the adjoining rail corridor, while the project would install many crossings in that area. Moreover, pursuant to Mitigation Measures BIO-MM#77a and BIO-MM#77b, organizations involved in the Coyote Valley Landscape Linkage would be engaged in design, monitoring, and adaptive management of these crossings.</u>
Design Principle	Use multi-benefit landscape planning to ensure actions maximize public benefits while protecting unique values.	Design principle is qualitative in nature, does not provide specific performance targets, and does not define criteria for a “wide wildlife area”. <u>The project alternatives only have the potential to conflict with attainment of principle if there is a conflict with one of the proposed crossing modifications for protecting habitat connectivity listed in this table.</u>

Sources: Santa Clara Valley Open Space Authority 2017
 SCVOSA = Santa Clara Valley Open Space Authority
 CVLL = Coyote Valley Landscape Linkage

17.7.8 SJM-Response-BIO-8: Impacts on Wildlife Movement in the Western Pacheco Pass Region

Several commenters asserted that there are significant project-level and cumulative impacts on wildlife movement, and specifically on mountain lion movement and genetic connectivity, that remain unmitigated or that are inadequately mitigated.

The Draft EIR/EIS and Revised/Supplemental Draft EIR/EIS described several significant impacts from construction and operations on wildlife movement (and genetic connectivity). Impact BIO#42 described impacts from the temporary disruption of wildlife and wildlife movement, Impact BIO#43 described permanent impacts on wildlife movement from the presence of the guideway, Impact BIO#44 described impacts on wildlife movement from intermittent noise during operations, Impact BIO#46 described impacts on wildlife movement from visual disturbance, and Impact BIO#47 described impacts on wildlife movement from intermittent and permanent lighting at night. Each of these impacts was found to be significant prior to mitigation but reduced to a less-than-significant level through the use of various mitigation measures, which were described in detail in Section 3.7.8, Mitigation Measures, of the Draft EIR/EIS and Revised/Supplemental Draft EIR/EIS. Section 3.19, Cumulative Impacts, found that cumulative impacts on wildlife movement

were significant, that the project's contribution was considerable under CEQA, but that with mitigation the project's contribution to cumulative barriers to wildlife movement would be less than considerable.

Several commenters noted a recent movement study for tule elk in the eastern Pacheco Pass region, wildlife (including mountain lion) observations at specific crossings in eastern and western Pacheco Pass, and Wildlife Conservation Board funding in support of the SCVHA's plans to improve wildlife crossings under SR 152 in western Pacheco Pass near the Pacheco Creek Preserve. Commenters generally asserted that potential impacts on gene flow or genetic connectivity between the central coast north and central coast central mountain lion subpopulations from both construction and operations remain significant, even after the incorporation of additional mitigation in the Revised/Supplemental Draft EIR/EIS, and that additional mitigation should be considered. Additionally, commenters asserted that significant impacts from the duration of construction around tunnel portals would preclude or significantly reduce mountain lion movement in eastern Pacheco Pass for a number of years, that the wildlife crossing designs under the rail in eastern Pacheco Pass were insufficient to provide for movement of mountain lions under the rail, and that additional mitigation should also be considered for these impacts.

Several commenters generally commented that additional mitigation should be considered but were not specific on the type of mitigation. Some commenters provided additional specific mitigation measure suggestions, including design changes to designated wildlife crossings in the western portion of the Pacheco Pass Subsection (i.e., near Casa de Fruta) to increase functionality and use by mountain lion and other species or design changes to enclose the HSR tracks; the enhancement of existing wildlife areas and/or crossings under SR 152 (e.g., additional land acquisition or installation of funnel fencing and critter ledges); and funding a "land bridge" (i.e., a dedicated wildlife overcrossing) over SR 152. The Authority has coordinated with local wildlife stakeholders in good faith recently and through numerous meetings over the last several years; however, the listing of the mountain lion under the California Endangered Species Act and a greater understanding of the importance of genetic connectivity for local population resilience form the backdrop of the Authority's consideration of additional mitigation. Consequently, the Authority evaluated the additional measures suggested by commenters for feasibility and subsequently made several changes to mitigation measures in the Final EIR/EIS on that basis, as described below.

The first suggested measure was to replace multiple culverts (wildlife crossings) required under BIO-MM#78 with "short segments of open-span bridge or elevated rail in the embankment sections of the alignment in the west slope of Pacheco Pass" to promote the movement of megafauna such as mountain lion, tule elk, and deer. The Authority has previously discussed this suggested mitigation with SCVHA and explained that the area is potentially subject to geological instability, which limits design options. During the initial design phase, the Authority evaluated the area for the appropriate type of guideway, considered the information available on the potential geological instability of the area, and determined that elevated rail (viaduct) was not feasible without additional geotechnical evaluation to ensure safety and security of the rail. Consequently, the Authority proposed an embankment profile in this area in the Draft EIR/EIS, consistent with our requirements to ensure the reliability, safety and security of the project design. The Draft EIR/EIS evaluated and recognized potential impacts on wildlife movement in this region under Impact BIO#43, and, consequently, the Authority evaluated the placement of several dedicated wildlife crossings in the area and determined that they were feasible and appropriate mitigation to reduce project impacts to a less-than-significant level. These dedicated wildlife crossings were included in the Draft EIR/EIS as BIO-MM#78. The Authority evaluated the suggested mitigation again in response to comments received on the Draft EIR/EIS and the Revised/Supplemental Draft EIR/EIS and has determined that the use of short spans of bridges or elevated rail is still not feasible based on the information available at this time, without additional geotechnical investigation and information to ensure reliability, safety and security. However, the Authority also recognizes the benefits that larger openings in the rail may provide for wildlife movement and has therefore modified BIO-MM#78, Establish Wildlife Crossings at Embankment in West Slope of Pacheco Pass, in the Final EIR/EIS to require additional geotechnical studies to evaluate the replacement of planned wildlife undercrossings with short sections of open-span

bridges or the replacement of all or some of the embankment section (that creates the potential barrier to movement and the need for the required wildlife undercrossings) with viaducts (which are considered permeable to wildlife movement), if feasible. As noted in the revised mitigation measure, the area is potentially subject to geological instability, and the Authority must evaluate feasibility of the measure through detailed geotechnical investigations to ensure safety and security of the rail and passengers. The Authority has committed to implementing the wildlife crossings but would implement open-span bridges or viaduct as outlined in this measure instead, if results of the geotechnical investigations indicate it is feasible. The Authority has included BIO-MM#80, a track enclosure for a geographically limited stretch of the GEA Important Bird Area, and is not proposing additional track enclosures; mitigation included in the Final EIR/EIS to address light and noise impacts to wildlife are discussed in SJM-Response-BIO-5. Secondly, commenters generally suggested that temporary, permanent, and cumulative impacts at the Pacheco Creek Reserve and wildlife crossings under SR 152 at the Reserve from construction of the tunnel portal adjacent to the Reserve would have significant effects, and additional mitigation should be considered. Commenters generally suggested that “the Authority identify opportunities for the Project to enhance nearby areas and movement opportunities including wildlife corridor restoration or enhancement as potential mitigation strategies” or that the Authority “modify adjacent transportation corridors.” Commenters also provided specific suggested mitigation under a similar but more specific idea: the funding and construction of a “land bridge” within the region to facilitate wildlife movement over SR 152, a substantial barrier to wildlife movement in the region. The Authority considered and evaluated these comments and suggested mitigation and adopted BIO-MM#79b in response, as described below.

With respect to the suggestion to enhance nearby areas and movement opportunities, the Authority has included a new measure in the Final EIR/EIS: BIO-MM#76b, Minimize Impacts on Wildlife Movement in the Western Pacheco Pass Region. This measure would help to address the temporary (3–5 years) construction impacts in the western Pacheco Pass area with temporary wildlife movement enhancement measures. The Authority would establish dedicated wildlife movement routes around or through the construction area to facilitate the continued movement of animals (including mountain lions) during construction. Wildlife movement areas would be established between natural lands to the east, west, and south of the construction area and existing wildlife crossing locations under SR 152, in recognition of impediments to wildlife movement posed by the existing SR 152 transportation corridor (the Authority itself cannot modify a Caltrans facility). The movement areas would be created with temporary fencing or opaque sound walls that shield wildlife from project construction activities and “funnel” wildlife around or through construction areas. The Authority has also included BIO-MM#P1 in the Final EIR/EIS, addressing impacts on wildlife, agriculture and open space through the Authority’s commitment to easement purchases, focusing on the Grasslands Ecological Area.

With respect to the suggestion to contribute to “corridor restoration or enhancement” and a “land bridge,” the Authority considered these suggestions for feasibility and has developed additional mitigation. The Authority has added BIO-MM#79b, Provide Wildlife Movement Between the Diablo Range and Inner Coast Range, in the Final EIR/EIS, which requires the Authority to work with local wildlife movement stakeholders and other agencies to implement a wildlife overcrossing to improve wildlife movement and permeability in the region.

The Authority still finds that impacts on wildlife movement described in the Draft EIR/EIS and the Revised/Supplemental Draft EIR/EIS in Section 3.7 under Impact BIO#42 (Temporary Disruption of Wildlife Movement) and Impact BIO#43 (Permanent Impacts on Wildlife Movement) are potentially significant before mitigation. The Authority has modified BIO-MM#78 in the Final EIR/EIS to improve the functionality of the measure and to further reduce and offset potentially significant impacts identified under Impact BIO#43. The Authority also has included two additional refined measures in the Final EIR/EIS, BIO-MM#76b and BIO-MM#79b, to further reduce and offset potentially significant impacts identified under Impact BIO#42 and Impact BIO#43. Lastly, the Authority acknowledges that construction at the tunnel portal near the

Pacheco Creek Reserve may last from 3 to 5 years, and, although considered temporary by the Authority, commenters have noted that they consider construction lasting this duration to represent permanent impacts. With that context, the Authority notes that new measure BIO-MM#79b would also provide substantial benefits in addressing Impact BIO#43. With the incorporation of these revised and more focused mitigation measures in the Final EIR/EIS, the significance of the wildlife movement impacts remain less than significant after mitigation, unchanged from the conclusions of the Draft EIR/EIS and the Revised/Supplemental Draft EIR/EIS. As described in Chapter 3.19, Section 3.19.6.6, the additional mitigation measures considered and now included in the Final EIR/EIS will also further reduce significant cumulative wildlife movement impacts and will specifically reduce impacts on mountain lion and other large species. Considering the additional reductions to cumulative wildlife movement impacts, the Authority has concluded in the Final EIR/EIS that there would not be a cumulatively considerable contribution from the Project alternatives on wildlife movement.

17.8 Safety and Security Standard Responses

17.8.1 SJM-Response-SS-1: At-Grade Crossing Safety

Commenters expressed concern that with Alternative 4, the addition of HSR trains and the speed of HSR trains transiting through at-grade crossings would result in an increase in accidents, injury, and death compared to existing conditions and a significant safety impact on vehicles, bicycles, and pedestrians using those at-grade crossings. Commenters also provided detailed comments about specific configurations of each proposed at-grade crossing.

This response discussed at-grade crossing safety separately for the rail corridor that will be owned by HSR versus the rail corridor owned by Caltrain. The area that will be owned by HSR is referred to as “HSR Corridor” in this response, which would be south of Control Point Lick, which is approximately one mile south of the Caltrain Tamien Station. The Caltrain-owned Corridor, which is referred to as the “Caltrain Corridor” is north of Control Point Lick and continues north to the edge of the project section at Scott Boulevard and then onward to San Francisco.

Existing safety conditions, existing safety regulations, and the safety impacts of the HSR project are analyzed in the Draft EIR/EIS, Section 3.11. The specific potential impacts related to the proposed addition of HSR trains transiting through existing at-grade crossings are discussed in Impact S&S#12: Permanent Exposure to Rail-Related Hazards.

The operation of the HSR system would meet and/or exceed federal safety requirements for train operations for all at-grade crossings. The project would upgrade all existing at-grade rail crossings through the installation of four-quadrant gates (reducing potential vehicle intrusion), median channelization where not present (also reducing potential vehicle intrusion). The project would also include integration of at-grade crossing gate functions with nearby traffic signals where not present (increasing traffic control approaching crossings), intrusion detection (to warn rail operators of intrusion at crossings). The project would also include integrated train control and signal systems (allowing for real-time feedback between on the ground detectors, train operators, and system operators). These improvements are described in Chapter 2, Alternatives. As described in Section 3.11, Safety and Security, the project also includes implementation of SS-IAMF#2 (Safety and Security Management Plan) and SS-IAMF#3: (Hazards Analyses). With the proposed upgrades and implementation of the IAMFs, the Draft EIR/EIS concludes that the safety impact relative to at-grade crossing operations would be less than significant under CEQA and that the project would not have a substantial adverse effect under NEPA.

Studies (Cooper and Ragland 2012; FRA 2015) have shown that a large portion of accidents that occur at at-grade crossings are due to driver behavior or inattention. FRA estimates that 94 percent of train-vehicle collisions can be attributed to driver behavior or poor judgement (FRA 2015). A 2012 California Department of Transportation (Caltrans) study indicated that a key solution to rail crossing crashes is to remove the ability for the driver to engage in a potentially faulty decision-making process by making it more difficult for the driver to bypass lowered gates. Median separators and long-arm gates or four-quadrant gates have been shown to reduce the

potential for collisions by removing or substantially deterring the ability of vehicles to bypass two-quadrant gates. The addition of a four-quadrant gate system was indicated in one study as providing a reduction of the likelihood of a collision by 82 percent compared to at-grade crossings with only two-quadrant gates (Cooper and Ragland 2012).

The discussion below describes the FRA regulatory requirements relative to at-grade crossings, existing conditions, changes with HSR service, safety improvements within the HSR portion of the project (including four-quadrant gates, median separators, automatic train control systems and integration of crossing barrier operations, obstacle detection, traffic signals and signal preemption, and integration of crossing barrier operation with nearby traffic signal operation) and safety aspects of operations within the Caltrain corridor portion of the project.

Federal Railroad Administration Requirements

At-grade rail crossings are regulated at the federal level by the FRA. Federal requirements (per 49 C.F.R. Part 213.307 and 213.347) are as follows (FRA 2015):

- For 110 mph or less, at-grade crossings are permitted. States and railroads cooperate to determine the needed warning devices, including passive crossbucks, flashing lights, two-quadrant gates (close only “entering” lanes of road), long gate arms, median barriers, and various combinations. Crossing lights and/or gates are activated by electrical circuits wired to the track (track circuits). FRA advocates a site-specific approach so that every crossing is evaluated individually and treated appropriately.
- For 111–125 mph, FRA permits rail crossings only if an “impenetrable barrier” blocks roadway traffic when trains approach.
- Above 125 mph, no rail crossings are permitted.

The Rail Safety Improvement Act of 2008 reauthorized the FRA to oversee the nation’s rail safety program. One aim of the statute is to improve conditions of rail bridges and tunnels. The Rail Safety Improvement Act also requires railroads to implement PTC systems by the end of 2015 on certain rail lines.⁸ Because of this requirement, the Authority’s build alternatives for this project have been designed to include PTC. PTC infrastructure consists of integrated command, control, communications, and information systems for controlling train movements that improve railroad safety by promoting improved information to railroad operators about the location of other trains and signal status, and by providing the opportunity to shut down train operations when the system detects certain unsafe conditions (such as trains passing through red signals or exceeding safe speeds). The implementation of PTC will significantly reduce the probability of collisions between trains, casualties to roadway workers and damage to their equipment, and overspeed accidents (49 C.F.R. Parts 200–299).

Existing Conditions

The current maximum speed for rail operations between San Jose and Gilroy is 79 mph but where curves exist or where passenger trains are approaching existing stations, operational speeds are lower. On a daily basis between San Jose Diridon Station and the Tamien Station, there are approximately 54 trains (40 Caltrain, 2 Amtrak Coast Starlight, 8 ACE, 4 freight) with some additional mid-day movement of ACE trains from Diridon to the Michael Yard (which is approximately 1 mile south of the Tamien Station). On a daily basis between Tamien Station and Gilroy, there are approximately 12 trains (6 Caltrain, 2 Amtrak Coast Starlight, 4 freight).

There are 29 public road at-grade rail crossings between San Jose and Gilroy that would be used by the HSR trains under Alternative 4. The existing public road crossings are a mixture of two-quadrant gates (e.g., where road traffic has a barrier in the direction of travel) and locations without gates. The crossings with two-quadrant gates are activated on a timer with approaching train sets triggering the crossing barriers via a track circuit located on the track at a specified

⁸ In late 2015, Congress extended the deadline by at least 3 years to December 31, 2018, with the possibility of an extension to a date no later than December 31, 2020, if a railroad completes certain statutory requirements that are necessary to obtain an extension (www.fra.dot.gov/ptc).

distance away based upon the maximum permissible line speed to ensure the barriers are lowered prior to the train reaching the crossing.

Federal requirements specific a 20-second minimum for right-of-way clearance time as set forth in the *Manual on Uniform Traffic Control Devices* (Federal Highway Administration 2012, as cited in Section 3.11 of the Draft EIR/EIS). Per Caltrain specifications, the existing crossing control systems are designed to provide 25–30 seconds of right-of-way clearance between the time the gates come down and warning lights turn on and the arrival of the train at the crossing. The total gate-down time at the crossing includes the time for the train to pass through the crossing and the gates to come up once the train has been detected to have passed the crossing. Total time is governed by the speed of the train, geometric configuration of the specific crossing, and other site-specific characteristics.

Median separators prevent drivers from going around lowered gates by using the opposite travel lane. Some of the at-grade crossings have median separators as follows”

- Low concrete median separators on both sides of the tracks (9): San Jose (West Virginia Street, Branham Lane, Chynoweth Avenue); Morgan Hill (Tilton Avenue, Main Avenue, Dunne Avenue, Tennant Avenue); San Martin (San Martin Street); Gilroy (Las Animas Avenue, Leavesley Road, 10th Street)
- Low concrete median separators on one side of the track (2): San Jose (Auzerais Avenue); Gilroy (Leavesley Road)
- Metal stickups on one side of the tracks (1): Gilroy (10th Street)
- No median separators (17): San Jose (Skyway Drive, Blanchard Road), Coyote Valley (Palm Avenue, Live Oak Avenue), Morgan Hill (San Pedro Avenue, Middle Avenue); San Martin (Church Avenue); Gilroy (Masten Avenue, Rucker Avenue, Buena Vista Avenue, Cohansey Avenue, IOOF Avenue, Lewis Street, Martin Street, 6th Street, 7th Street, Luchessa Avenue Bloomfield Road)

Existing at-grade crossings between San Jose and Gilroy vary as to whether the railroad preemption is or is not interconnected with adjacent traffic signals:

- At-grade crossings with railroad preemption connected to adjacent traffic signals (9): San Jose (Skyway Drive, Branham Lane, Chynoweth Avenue); Morgan Hill (Tilton Avenue); San Martin (San Martin Street); Gilroy (Masten Avenue, Las Animas Avenue, Leavesley Road, 10th Street)
- Crossings with adjacent traffic signals nearby, but no preemption (8): San Jose (Auzerais Avenue, West Virginia Street, Blanchard Road); Coyote Valley (Palm Avenue); Gilroy (Lewis Street, 6th Street, 7th Street, Luchessa Avenue)
- Crossings with no adjacent traffic signals (12): Morgan Hill (Main Street, Dunne Street, San Pedro Avenue, Tennant Avenue, Middle Avenue); San Martin (Church Avenue); Gilroy (Rucker Avenue, Buena Vista Avenue, Cohansey Avenue, IOOF Avenue, Martin Street, Bloomfield Road)

Where signalized intersections near at-grade crossings have traffic signal preemption connected to the crossing gate and warning light systems, the signal preemption process generally provides for 5–15 seconds of green time to allow queues between the grade crossing and traffic signal to dissipate. During this period, the crossing gates are down, thus prohibiting vehicles from entering the crossing. After the track clearance interval, signals either flash red for all movements (acting as an all-way stop-controlled intersection) or by selectively dwelling on a green phase for movements that do not contribute volume to the grade crossing (i.e., movements parallel to the rail line). After the train passes through the crossing, the signal resumes regular phasing and timing patterns.

HSR Train Service Changes

With the project, there would be an initial increase in total number of trains operating in the rail corridor by up to 2 HSR trains pphpd and up to 48 daily HSR trains (including non-revenue trains) between San Jose and Gilroy. With the project, by 2040 there would be an increase by up to 7 HSR trains pphpd and up to 176 HSR daily trains (including nonrevenue trains) between San Jose and Gilroy. With improved tracks constructed in the rail corridor between the San Jose Diridon Station and the Gilroy Station, the maximum speed that trains could operate would be increased up to 110 mph on straight portions of track, but would be lower in areas of curves such as in the approach to the San Jose Diridon Station.

Four Quadrant Gates and Median Separators with Alternative 4

The HSR project would modify and improve at-grade crossings within the corridor: of the 30 existing at-grade crossings, there would be improvements at 29 crossings and one at-grade crossing (7th Street in Gilroy) would be closed. These improvements would include the installation of four-quadrant gates at the 29 at-grade crossings covering all lanes of travel with new train detection and control equipment and median separators to channelize and regulate paths of travel. Four-quadrant gates would entail gate mechanisms on both sides of the tracks for both directions of automotive traffic. The exit gates blocking the road leading away from the tracks in this application would be equipped with a delay, beginning the descent to their horizontal position several seconds after the entrance gates, to avoid trapping roadway vehicles on the crossing. Four-quadrant gates are safer than two-quadrant gates because they prevent drivers from illegally driving their vehicles around lowered gates to try to beat a train.

The new at-grade crossing control and traffic preemption equipment would be designed to minimize the total period of gate-down time at crossings, while satisfying mandatory requirements and providing for safe warning and clearance intervals.

The existing grade crossings with no barriers will need to be upgraded as the increase in line speed makes it mandatory for crossings to have barriers and warnings of approaching trains. The crossings with barriers must be modified as the existing positioning of the trackside equipment triggering the closure of the barriers will not account for the increased line speeds and longer train lengths of HSR trains.

As described above, the addition of a four-quadrant gate system was indicated in one study as providing a reduction of the likelihood of a collision by 82 percent compared to at-grade crossings with only two-quadrant gates (Cooper and Ragland 2012).

HSR Project Safety Systems and Improvements Within HSR-Owned Corridor

From south of Tamien Station to Gilroy, Alternative 4 would include two dedicated tracks for blended Caltrain and HSR service. This section would be controlled by the Authority and the Authority would be responsible for rail operations and maintenance. With Alternative 4, HSR will operate on its own dedicated tracks from approximately 2 miles south of the Tamien Station to south of Gilroy. HSR will be responsible for railroad operations and dispatch in this portion of the project including at-grade crossing operations. The safety improvements and systems included in Alternative 4 relative to at-grade crossing safety for the HSR corridor portion of the project are discussed below.

Safety conditions within the Caltrain corridor are discussed separately in the following section.

HSR Automatic Train Control System

The HSR system would include an automatic train control (ATC) system that would include automatic train protection functions of train detection; collision and overspeed prevention; broken rail detection; interlocking control, hazard detection, train separation, and work zone protection; automatic train operation information and control functions; automatic train supervision functions to provide central supervisors with rail operation status information and the ability to control train operations; and PTC that would provide a proactive train control system to prevent train collision and derailments due to overspeeding, and protection of work zones. The design of the HSR

system would also include a Safety and Security Management Plan (SS-IAMF#2) that would describe the procedures, processes, and programs the Authority has implemented that would support the safety and security goals. These procedures, processes, and programs would include a maintenance, inspection, and repair program; a rules compliance and procedures review program; and an employee and contractor training program that would maintain system safety to minimize the potential for derailment. The HSR contractor would conduct a supplemental preliminary hazard analysis and a threat and vulnerability assessment to identify potential collision hazards and other facility hazards and vulnerabilities, that then can either be eliminated or minimized by the HSR design (SS-IAMF#3).

The ATC system would cover all functions of a train control system including both safety-critical and non-safety-critical operations and would incorporate PTC in compliance with FRA regulations. A hazard detection system would be applied throughout the system where supported by hazard analyses that would be conducted prior to commencement of operations (SS-IAMF#3). The hazard detection system would also include systems for detection of vehicle or rail car intrusion, and trespassers where supported by hazard analyses (Authority 2013b, as cited in Section 3.11 of the Draft EIR/EIS).

Integration of Grade Crossing Barrier Operations with the HSR Automatic Train Control System

At-grade crossing operations from south of the Tamien Station and Gilroy would be integrated with the new signaling/ATC system. A train would not be granted movement authority to proceed through a grade crossing in a specified section of the ATC system without first receiving positive identification from each crossing in that section that the barriers have been lowered successfully. In the event of a barrier failure, or a lack of communication from a crossing to the main ATC system equipment at the operational control center that the barriers are down, the train would not be allowed to proceed through the crossings and would be required to come to a stop. The crossings with existing barriers would be modified as the existing positioning of the trackside equipment triggering the closure of the barriers would not account for the increased line speeds and longer train lengths of HSR trains.

Addition of Obstacle Detection at Grade Crossings

The Draft EIR/EIS described that the project would include obstacle detection. However, the discussion of obstacle detection in Chapter 2, Alternatives, has been clarified in the Final EIR/EIS, as follows:

- A further upgrade to the at-grade crossings from south of Tamien Station to south of Gilroy would be the addition of obstacle detection. Obstacle detection usually takes the form of local radar and sometimes LIDAR (i.e., low-level radar detection using lasers) installed at each crossing. The detection system uses radio waves (radar) and lasers/light (LIDAR) to scan the area of the crossing road/rail interface to detect the presence or absence of road vehicles, people, animals and other objects which could otherwise obstruct the crossing and cause a potential collision with an oncoming train.
- Obstacle detection would be integrated into the ATC system and would report to the ATC system so that when an approaching train is requesting movement authority from the ATC system to proceed along the railroad through a section containing crossings, the obstacle detection at each crossing in the section reports back through the ATC system that the crossing is clear of obstacles. Only when each crossing in that section has positively confirmed that (a) the barriers are down and (b) the crossing is clear of obstacles would the train be given movement authority by the ATC system to proceed.

Addition of Traffic Signals and Signal Preemption

The Draft EIR/EIS noted that new signals and signal preemption would be provided. For at-grade crossings from south of Tamien Station in San Jose to south of Gilroy, the HSR project would add the following additional signal improvements:

- Addition of railroad preemption connected to adjacent traffic signals where not currently present (6): San Jose (Blanchard Road); Coyote Valley (Palm Avenue); Gilroy (Lewis Street, 6th Street, 7th Street, Luchessa Avenue)
- Addition of new traffic signals where not currently present and railroad preemption connected to the new signals (4): San Martin (Church Avenue); Gilroy (Rucker Avenue, Buena Vista Avenue, Cohansey Avenue)

The text in Chapter 2, Alternatives, has been clarified to note these details.

Integration of Grade Crossing Barrier Operation with Roadway Traffic Control Systems

The Draft EIR/EIS describes that the HSR system will have fully integrated communications and controls for train operations, grade crossings, and roadway traffic.

Control of road traffic signals will be integrated with the HSR ATC system at those grade crossings where there are road traffic control systems that regulate the flow of traffic across rail/road crossings. This can be carried out through a one-way data exchange from the rail ATC system to the road traffic control system. When the crossing barriers are triggered to operate, information is sent to the road system to ensure traffic signals are set to red prohibiting any road traffic from being directed towards or across the rail crossing. Once the barriers are released following the passage of a train, a signal is sent to the road traffic system allowing it to enable the flow traffic across the crossing again. Data are not sent from the road system to the rail ATC system because the road traffic signals should never trigger the lowering or raising of rail crossing barriers.

The text in Chapter 2, Alternatives, has been clarified to note these details.

Alternative 4 At-Grade Crossing Safety Operations within the Caltrain Corridor

North of Control Point Lick, Alternative 4 would be within the Caltrain corridor and PCJPB would be the host railroad. As the host railroad, the PCJPB is responsible for operations within the Caltrain corridor and establishes the operational and safety requirements for all railroad operations using its tracks. At present, the Caltrain corridor uses wayside signal systems for at-grade crossing gate controls. The at-grade crossings at Auzerais Avenue and West Virginia Street are not integrated with nearby traffic intersection signal controls.

The Authority reached out to PCJPB in summer 2020 to identify the status of PTC and what safety investments are likely to be in place by the time that HSR trains will operate in the Caltrain corridor. PCJPB (Bouchard 2020, as cited in Section 3.11, Safety and Security, of the Final EIR/EIS) identified that it could not provide specific detail at the time for several reasons: (1) Caltrain intends to develop a future Capital Improvement Program to support near-term implementation of its recently adopted Caltrain Service Vision, but since the Capital Improvement Program is not yet developed, the future improvements are not known with precision; (2) given the COVID-19 pandemic and the drastic financial impact on Caltrain with its lack of a dedicated funding and necessary overreliance on farebox revenue, current funding capacity for Caltrain corridor improvements is unknown. Caltrain provided information regarding the current configuration of the railroad as an attempt to envision what future improvements will be planned, funded, and implemented.

Caltrain has contracted with Wabtec Corporation to implement the Interoperable Electronic Train Management System (I-ETMS) PTC solution (this takes the place of previously planned Communications Based Overlay Signal System). I-ETMS is a signal system overlay-based solution and thus PCJPB has identified that the basic wayside systems for preemption that are in

place now should be assumed to be in place in the future (Bouchard 2020, as cited in Section 3.11 of the Final EIR/EIS). Wabtec describes I-ETMS generally as follows (Wabtec n.d.):⁹

- Integrates new technology with existing train control and operating systems to enhance train operation and safety.
- Prevents track authority violations, speed limit violations, unauthorized entry into work zones, and train movement through a switch left in the wrong position, all of which reduce the potential for train accidents.
- With I-ETMS, the crew remains in control of the train. The system monitors and ensures the crew's compliance with all operating instructions, while the I-ETMS display screen provides the train crew a wealth of operating information.
- As the train moves down the track, the I-ETMS on-board computer, with the aid of an on-board geographic database and global positioning system, continuously calculates warning and braking curves based on all relevant train and track information including speed, location, movement authority, speed restrictions, work zones, and consist restrictions.
- I-ETMS communicates with wayside devices checking for broken rails, proper switch alignment, and signal aspects.
- All information is combined and analyzed in real time to provide a "safety net" for improved train operation.

PCJPB has a policy to implement grade crossing preemption systems as funding allows. PCJPB also identified that Caltrain has aggressively pursued safety upgrades including signage, pavement markings, and medians at most vehicular and pedestrian crossings. Caltrain uses a hazard analysis tool that is updated periodically to determine whether a particular crossing will receive upgrades (Bouchard 2020, as cited in Section 3.11 of the Final EIR/EIS).

For the project within the Caltrain corridor from south of Tamien Station to Scott Boulevard, as part of Alternative 4, the Authority will include the following features at the at-grade crossings at West Virginia Street and Auzerais Avenue:

- Installation of four-quadrant gates with new train detection and control equipment
- Addition of railroad preemption connected to adjacent traffic signals and integration with Caltrain signal operations, if feasible

Because these two at-grade crossings are within the Caltrain corridor, it is possible that railroad preemption (if feasible) may be installed by PCJPB as part of its other work; in this case, the Authority would fund the improvement and PCJPB would install and operate.

Comments about At-Grade Crossings at Specific Locations

Detailed comments about the specific configuration of each at-grade crossing have been noted. The Applications (A, A1, B, C, etc.) identified on the drawings in Volume 3, Preliminary Engineering for Preliminary Design show different configurations of streets (with differing number of lanes) crossing three railroad tracks. The Applications also show different scenarios where streets (with differing number of lanes) are in close proximity to the adjacent tracks. These Applications were assigned to each at-grade crossing. Each Application lists the existing and proposed improvements. The various Applications would increase at-grade crossing safety by (1) adding two vehicle arm exit gates to achieve a four-quadrant gate system, (2) adding pedestrian arm and swing gates for sidewalks, (3) adding median channelizers to prevent or deter motorists from jumping the queue when the gates are down, and (4) adding traffic detector loops where crossings are adjacent vehicle traffic signals to allow for signal interconnection. Appendix 2-A, Road Modifications and Crossings, lists the type of four-quadrant gate application by location.

⁹ This is a generic description from the Wabtec website; the system features for the Caltrain corridor may vary from those described.

The Authority will work with California Public Utilities Commission and local jurisdictions during detailed design (post-Record of Decision) to address specific concerns at specific locations.

Conclusion

The Authority will work with local authorities and Caltrain to install the safety improvements included as part of the HSR project. The Authority will continue to monitor safety conditions along the portions of the project section where it will be the host railroad and will coordinate with PCJPB concerning safety conditions for HSR operations within the Caltrain corridor.

The HSR project will meet and/or exceed federal safety requirements for train operations relative to at-grade crossings within areas where the Authority will be the host railroad because the project will upgrade existing at-grade crossings through installation of four-quadrant gates, median channelization, integration of at-grade crossing gate functions with nearby traffic signals, intrusion detection, and integrated train control and signal systems. The Authority will work with Caltrain regarding safety in the Caltrain Corridor, where Caltrain is the host railroad. With these upgrades, the Draft EIR/EIS concludes that the safety impact relative to at-grade crossing operations would be less than significant under CEQA and would not be a substantial adverse effect under NEPA.

Additional clarifications have been added to Chapter 2 in the Final EIR/EIS with regard to the safety improvements relative to at-grade crossings.

17.8.2 SJM-Response-SS-2: Emergency Vehicle Response Times

Commenters expressed concern about the potential delay in emergency vehicle response times due to the HSR project, particularly in relation to increased gate-down time due to additional train crossings of at-grade crossings with Alternative 4. Some commenters questioned the rationale for the 30-second delay significance threshold. Some commenters state that some of the mitigation is already in place, is being deferred, will not be effective, and/or the Authority should fund operations of a new fire station (not just construction). Some commenters also requested grade separations to be included as part of Alternative 4 to address this concern.

Draft EIR/EIS Analysis

Section 3.11, Safety and Security, in the Draft EIR/EIS analyzes the potential delay in emergency vehicle response time for all alternatives due to (1) increased station vehicle traffic and associated roadway congestion; (2) narrowing of Monterey Road in south San Jose with Alternatives 1, 2, and 3; and (3) increase in gate-down time due to additional train crossings of at-grade crossings with Alternative 4.¹⁰ The Draft EIR/EIS identified that impacts before mitigation would be significant at certain locations (as discussed in Section 3.11, Impact S&S#4 (Continuous Permanent Impacts on Emergency Access and Response Times) and as shown in Figure 3.11-10) in San Jose, Morgan Hill and Gilroy. Mitigation identified includes Mitigation Measure SS-MM#3 and SS-MM#4.¹¹ Specifics of this mitigation are discussed below. The Draft EIR/EIS concludes that the significant impacts can be reduced to a less-than-significant level with implementation of the identified mitigation.¹²

Significance Threshold

¹⁰ Increased gate-down time at the at-grade crossings due to the increased number of trains can affect emergency vehicle response times in two ways: (1) if the crossing gate is down, it will delay an emergency vehicle that needs to cross the tracks; (2) crossing gates that are down periodically throughout the traffic peak hours can increase traffic congestion, which can also exacerbate emergency vehicle response times.

¹¹ For Alternative 4 only, as described in Section 3.11, Safety and Security, certain site-specific traffic mitigation measures would be required if there were still emergency vehicle response delays greater than the 30-second threshold after implementation of mitigation measures SS-MM#3 and SS-MM#4.

¹² The Draft EIR/EIS also notes that there may be significant unavoidable impacts if affected local jurisdictions choose not to construct and operate the improvements included in the mitigation (the mitigation obligates the Authority to fund the construction of improvements, but operational costs would need to be funded by local jurisdictions).

The rationale for the 30-second delay significance threshold for emergency vehicle response analysis is discussed in Draft EIR/EIS Section 3.11.4.5, Method for Determining Significance under CEQA (specifically, footnote 9 on page 3.11-16 of the Draft EIR/EIS). For the purposes of the analysis, inadequate emergency access was defined as either a substantial blockage of physical access for emergency response purposes or a substantial increase in emergency response times (defined as greater than 30 seconds). While there are local standards for emergency vehicle response time, there are no established state or federal emergency vehicle response time standards, and analysts were not able to identify specific thresholds previously used under CEQA to evaluate this effect.¹³ The 30-second criterion was selected on the basis of several considerations: (1) analysts reviewed local emergency management agency standards for response times (as discussed in Section 3.11 of the Draft EIR/EIS), of which the shortest times were around 5 minutes. Thirty seconds—or 10 percent of 5 minutes (300 seconds)—was considered to represent a substantial delay in emergency response time; and (2) NEPA effects are identified in Section 3.2 of the Draft EIR/EIS for signalized intersections with congested conditions (defined as LOS E or F) where the project would result in 4 seconds of additional delay. Because an emergency vehicle route across the railroad is likely to encounter anywhere from two to six intersections affected by gate-down time, a 30-second delay would include the collective effects of up to seven intersections (7 intersections times 4 seconds = 28 seconds).

Proposed Mitigation

The Draft EIR/EIS includes two mitigation measures to address emergency vehicle response time delays.

Mitigation Measure SS-MM#3 includes the installation of signal priority for emergency vehicles at certain Monterey Road intersections in south San Jose.¹⁴

Mitigation Measure SS-MM#4 includes a variety of improvements to separately address impacts relative to traffic congestion around the San Jose Diridon Station and Gilroy Station (all alternatives for Diridon Station and Alternatives 1, 2, and 4 for Gilroy Station) and to address impacts relative to increased gate-down time (Alternative 4 only).

For the two station areas, the Authority contractor would develop an emergency vehicle priority plan and install emergency vehicle priority treatments with City of San Jose or City of Gilroy approval. With signal priority, delay impacts related to congestion around the two stations are expected to be reduced to less than 30 seconds, a less than significant impact under CEQA and not a substantial adverse effect under NEPA.

For the locations where the EIR/EIS identified there may be significant delays to emergency vehicle response times, the Authority would conduct a baseline monitoring study to determine baseline conditions for travel times without HSR operations. Thereafter, the Authority would conduct monitoring approximately 6 months after initial HSR operations and annually thereafter for 3 years.¹⁵ Since full operations may not occur for years, the Draft EIR/EIS has been clarified to require this regime of monitoring after increases in HSR operations up to the full operation levels noted for 2040 in the EIR/EIS. An Emergency Vehicle Priority Treatment Plan would be developed relative to emergency vehicle response times for at-grade crossing locations where an

¹³ Analysts reviewed prior EIR/EISs and contacted experienced transportation analysts among the project team and could not identify any other specific quantitative thresholds used to evaluate this impact.

¹⁴ The City of San Jose commented that it has installed signal priority at 900 locations in San Jose and that this mitigation will not improve conditions. The City did not specifically identify if signal priority is installed at all of the proposed locations identified in the mitigation. The City is correct that no additional benefit would occur at locations that already have signal priority. If there are any remaining locations without signal priority of those identified in the mitigation measure, there would be additional benefit to emergency vehicle response times.

¹⁵ As discussed in the Draft EIR/EIS, initial HSR operations would be more limited in scope than full operations expected by 2040. Chapter 2 of the Draft EIR/EIS identifies that initial operations would include a maximum of two trains pphpd, which corresponds to up to four one-way trains per hour or every 15 minutes on average. The project would have up to seven trains pphpd, which corresponds to up to 28 one-way trains per hour or every 2 to 3 minutes on average at full service by 2040. The intent of monitoring initial operations to identify the potential need for emergency vehicle response time improvements will be able to identify needs early enough to be in place prior to full operations

increase in emergency response times of 30 seconds or more above baseline travel time would occur due to HSR service, as indicated by either monitoring of initial service or predicted for future HSR service increases based on evaluations of the likely future effects based on the monitoring of initial service and the planned future HSR service levels. The performance standard for the plan is to reduce HSR train operation effects on emergency vehicle response time to less than 30 seconds.

Various commenters expressed concerns regarding different aspects of Mitigation Measure SS-MM#4, which applies when impacts exceeding the 30-second threshold occurred, because the commenters noted that the mitigation does not reduce the delay at the at-grade crossings themselves. While it is correct that SS-MM#4 does not reduce the delay at the at-grade crossings themselves, the different aspects of the mitigation would reduce the delay of the emergency vehicle response time, which is the identified concern. The following describes the benefits in different parts of Mitigation Measures SS-MM#3 and SS-MM#4 in reducing delays in emergency vehicle response time and also addresses certain specific comments on aspects of the mitigation.

- **Emergency vehicle preemption equipment at traffic signals**—The provision of emergency vehicle priority at nearby traffic signals would help emergency response times after the train has passed.
- **Route-based traffic signal priority control systems**—The provision of emergency vehicle priority at traffic signals along their response route away from the at-grade crossing would help emergency response times for the rest of their route.
- **Emergency vehicle and transit queue bypass lanes**—The provision of emergency vehicle queue bypass lanes along their response route away from the at-grade crossing would help emergency response times for the rest of their route.
- **Roadway capacity and operational improvements to facilities paralleling the rail line to improve access to adjacent grade-separated rail crossings**—Improvements to routes to grade-separated rail crossings will reduce the response times along alternative routes to the at-grade crossing, which will help reduce response times.
- **Construction of new fire stations to reduce fire station response times in affected areas**—Comments noted that relocation of existing stations may reduce existing service in areas further from the new location. Comments also expressed concern about the need to purchase additional fire station equipment and fund the ongoing cost of staffing an additional station and that this may not be feasible for local jurisdictions. Mitigation Measure SS-MM#4 does not propose relocation of existing stations. Instead it proposes the construction of new fire stations.¹⁶ Thus, if new fire stations are built this would not result in reduction to other service areas. If necessary, as part of this mitigation, the Authority would fund the construction of new fire stations and the initial equipment associated with the new fire stations and local jurisdictions would not incur these costs. However, the Authority cannot fund ongoing operations and maintenance of fire stations due to limitations on the Authority's ability to fund operations and maintenance activities based on its funding sources. While HSR can provide funding for the construction of emergency vehicle response improvements, it cannot compel the City of San Jose, Santa Clara County, or the City of Gilroy to construct and operate the improvements. Therefore, the impact under Alternative 4 would be significant and unavoidable.
- **Expansion of existing fire stations to reduce fire station response times in affected areas**—The intent of this provision is that the “expansion” would include additional emergency response equipment that could expand the ability of the station to respond to multiple calls at the same time, which could reduce the delay of individual calls where existing

¹⁶ Mitigation Measure SS-MM#1 includes the potential for local relocation of one fire station to a location nearby if necessary to provide adequate access to Monterey Road, but this relocation would not lower service to any area because the potential relocation area is very close to the current location. Mitigation Measure SS-MM#4 does not include relocation of existing fire stations.

equipment is constraining. This provision may only provide benefits in certain circumstances. Section 3.11 of the Final EIR/EIS has been clarified to describe the intent of this provision.

- **Increase in contracted first responder ambulance services to reduce first responder ambulance response times in affected areas**—Contracted ambulance services often patrol and/or temporarily stage themselves on streets in response areas as opposed to only at fixed bases of operations. An increase in ambulance services would allow for patrol or temporary staging on multiple sides of the railroad alignment, which could help to reduce emergency response times and increase the ability to respond to multiple calls.

With the exception of the potential inability of local jurisdictions to fund ongoing fire station operations, the mitigation described above is considered feasible and would reduce emergency response times for the reasons described above.

Grade Separations as Mitigation

Comments state that the Authority should implement grade separations at at-grade crossings to address emergency vehicle response impacts at certain locations in San Jose, Morgan Hill, and Gilroy.

As an alternative to the specific mitigation strategies noted above, as described in Mitigation Measure SS-MM#4, the Authority and a local agency may reach a mutual agreement to have the Authority make an in-lieu payment toward other infrastructure projects including nearby grade separation projects. The in-lieu payment would be the capital contribution that the Authority would have otherwise made to one or more of the above emergency vehicle priority treatment strategies.

Please also see SJM-Response-GS-1: Requests for Grade Separations, for further discussion.

17.9 Agricultural Resources Standard Responses

17.9.1 SJM-Response-AG-1: Temporary and Permanent Disruption of Agricultural Infrastructure Serving Important Farmland as a Result of Project Construction

Multiple comments expressed concern regarding disruption of agricultural infrastructure, including energy and utilities, irrigation facilities, drainage facilities, and roads, that could result from construction of the San Jose to Merced Project Section. These comments included concern that agricultural water supply could be disrupted, agricultural infrastructure such as irrigation facilities could be damaged during construction, temporary disruption of drainage facilities could result in impounding irrigation and flood waters on productive agricultural land, temporary and permanent road closures and permanent road modifications may impair the ability of agricultural operators to access their parcels in a timely manner, and construction of the embankment would create two remnant parcels separated from each other.

As discussed in Impact AG#4 and Impact AG#5, construction of the HSR project would result in both temporary and permanent disruption of existing infrastructure on agricultural lands. This could include utility services (including power supplies), irrigation systems (including distribution lines, canals, and gravity-flow systems), drainage systems, and road access. IAMFs incorporated into the design of the project would largely avoid temporary and permanent disruptions to utilities, irrigation infrastructure, and access (road) infrastructure.

Temporary Disruption of Agricultural Infrastructure Serving Important Farmland

Temporary disruption to agricultural infrastructure would include temporary disruption of energy and utility services, irrigation facilities, drainage facilities, and road access.

Construction in the right-of-way would require the temporary shutdown of aboveground, below-ground, or overhead electrical transmission lines; natural gas transmission pipeline facilities; petroleum product conveyance facilities; and irrigation infrastructure. Shutdowns could interrupt utility services to agricultural customers, among others. Table 3.14-10 of the Draft EIR/EIS shows

the number of electrical lines and canals/pipelines affected by each alternative. For disruptions to utilities and energy infrastructure, including that serving agricultural land, PUE-IAMF#4 would require the contractor to coordinate with service providers. Through this coordination, the contractor would be able to minimize or avoid interruptions to utility and energy services. PUE-IAMF#3 would require the contractor to notify the public of unavoidable construction short-term interruptions to utility service through communications media in advance of planned construction activities. This notification would provide agricultural operators with notice to plan in advance for outages. For required temporary construction disruptions to irrigation facilities, PUE-IAMF#2 would require the contractor to verify that a new irrigation facility is operational prior to disconnecting the original facility, where relocation of a facility is necessary. Because the requirement provides that new irrigation facilities be operational before disconnecting the original facility, there would be no disruption to agricultural productivity as a result of lack of irrigation.

Mitigation measures were proposed to address identified significant impacts. Mitigation Measure AG-MM#5 would convert the embankment design to an aerial guideway near Casa de Fruta (from Station 3148+60 to Station 3154) to avoid impacts on irrigation infrastructure. Further, Mitigation Measure AG-MM#4 would require the construction contractor to verify that a replacement agricultural drainage facility is operational prior to disconnecting the original facility. This requirement would result in minimal interruptions to drainage infrastructure.

In addition, the project would require temporary construction easements and temporary closures of parking areas or roadway travel lanes, and construction of overcrossings and interchanges. These road closures and temporary road relocations could result in delays and limited access to agricultural infrastructure, including limitations to existing livestock and equipment crossings. Reconductoring of the electrical line could also occasionally necessitate short-term road closures, which could also result in delays and limited access to agricultural infrastructure. For temporary construction disruptions to access (road) infrastructure, TR-IAMF#2 would require the identification of detour routes, temporary signage, advanced notification of temporary road closures, and other measures to maintain traffic flow and avoid delays. These measures would provide for continued access to irrigation infrastructure, enabling ongoing access to irrigation canals. With ongoing access during construction, maintenance activities for irrigation canals would not be interrupted. Road closures as a result of construction in agricultural areas would be coordinated with local and state agriculture and trucking agencies in advance of the closures to minimize or avoid disruptions to agricultural activities, particularly during June through September (i.e., peak harvest season in the resource study area). In addition, AG-IAMF#5 would require the Authority to coordinate with agricultural property owners or leaseholders to provide temporary livestock and equipment crossings. These temporary crossings would allow routine operations, including movement of equipment and livestock, and normal business activities to continue during project construction. This measure would allow for continued agricultural activity on farmland that is not used for temporary construction or acquired for permanent right-of-way.

Permanent Disruption of Agricultural Infrastructure Serving Important Farmland

Permanent disruption to agricultural infrastructure would include permanent relocation of some irrigation facilities and agricultural drainage facilities and closure or modifications to some roads.

Relocated irrigation and drainage facilities would need to have new access built at the same time the facilities are made operational in order not to disrupt agricultural operations. Where irrigation facilities need to be relocated, except for at an identified site near Casa de Fruta (discussed below), new irrigation facilities would be installed and operational before existing facilities would be disconnected (PUE-IAMF#2).

Relocation of major agricultural drainage facilities could affect Important Farmland. Loss of access to major agricultural drainage infrastructure could result in increased nutrient retention in soil, higher soil salinity, and standing water as a result of perched groundwater that could damage root systems.

Mitigation measures were proposed to address identified significant impacts. At the identified site near Casa de Fruta, PUE-IAMF#2 would be ineffective because the embankment design would

permanently interfere with multiple irrigation lines. As a result, the alternatives would result in conversion of Important Farmland to nonagricultural use at the identified site. Mitigation Measure AG-MM#5 would convert the embankment design to an aerial guideway near Casa de Fruta (from Station 3148+60 to Station 3154) to avoid impacts on irrigation infrastructure. In addition, Mitigation Measure AG-MM#4 would require the construction contractor to verify that a replacement agricultural drainage facility is operational prior to disconnecting the original facility, where feasible. This requirement would result in minimal interruptions to drainage infrastructure.

Road closures and permanent road modifications could limit or eliminate access to fields, as well as irrigation canals or ditches used for irrigation needs and maintenance activities. These closures and modifications could disrupt basic agricultural activities, such as managing soil, sowing, planting, and harvesting. Table 3.14-10 of the Final EIR/EIS shows the number of permanent road closures on agricultural land by alternative, and Table 3.14-11 shows the number of permanent modifications to farm roads by alternative. To address potential permanent disruptions to road access, the Authority would provide for road crossings to be spaced at no greater distance than 2 miles. In addition, AG-IAMF#6 would require the Authority to coordinate the final alignments of affected access roads with owners of land in agricultural use. The Authority also would provide equipment crossings to minimize long-term impediments to routine agricultural operations and normal business activities.

Where partial property acquisitions would result in remnant agricultural parcels, under Mitigation Measure AG-MM#3 the Authority and the construction contractor would evaluate, with property owner's input, the potential for modified access to allow continued use of agricultural lands and facilities. The contractor would prepare a technical memorandum for Authority review and approval detailing what measures were implemented to address severed parcels, the contractor's outreach to affected property owners, and the evaluation results. Modified access could include the design of overcrossings or undercrossings to allow farm equipment passage.

These IAMFs and mitigation measures would minimize interruptions to utilities and irrigation infrastructure and access (road) infrastructure, thereby minimizing any effect on agricultural productivity. As such, Important Farmland is unlikely to be converted to nonagricultural use as a result of disruptions to agricultural infrastructure.

17.9.2 SJM-Response-AG-2: Farmland Impacts—Remnant Parcels

Multiple comments expressed concern regarding the loss of agricultural farmland that could occur from the creation of remnant parcels as a result of construction of the project. These included concerns that agricultural production would be less efficient and potentially less economically viable on remnant parcels than on original parcels.

The project would result in the creation of remnant parcels of Important Farmland due to severance. Some parcels could be severed from a larger parcel because the HSR right-of-way would divide the parcel. Other remnant parcels could be created when roadway access is permanently restricted or eliminated as a result of project construction. Impacts related to loss of roadway access are discussed under SJM-Response-AG-1: Temporary and Permanent Disruption of Agricultural Infrastructure Serving Important Farmland As a Result of Project Construction. This response addresses acreage of Important Farmland that would be converted as a result of such severance.

Two types of remnant parcels would be created by project construction, those that are viable to remain in agricultural production and those that are considered nonviable for continued agricultural production because of a lack of access, insufficient size, lack of farmable shape, or location adjacent to nonfarmable land. Such nonviable remnant parcels would be acquired by the Authority. The estimated acreage of nonviable Important Farmland remnant parcels ranges from 147 acres (Alternative 4) to 253 acres (Alternative 3).

Analysts conducted a parcel-by-parcel review, first identifying severed parcels, based on whether the HSR project right-of-way or associated road closures would divide a parcel into multiple portions, creating one or more remnant parcels. After identifying severed parcels and the resulting remnant parcels, real estate specialists reviewed each remnant parcel to determine

whether it lacked the size, shape, or location adjacent to farmable land that would make it amenable to consolidation with adjacent farmland. The primary criteria related to remnant parcel size—remnant parcels 20 acres or less were assumed to have the potential to become unfarmable—and whether the remnant parcel was adjacent to other farmland with which it could be consolidated.

Two types of remnant parcels were identified that would be viable for continued agricultural production. Larger remnant parcels greater than 20 acres with access, regardless of shape, were assumed to still be viable for agricultural activities. Smaller remnant parcels that were directly adjacent to other Important Farmland parcels were assumed to have potential to remain in agricultural production. An IAMF included as part of the project (AG-IAMF#3) includes a farmland consolidation program. The program will provide for continued agricultural use on the maximum feasible amount of the remnant parcel resulting from implementation of the HSR project by facilitating the sale of remnant parcels to neighboring landowners of agricultural land. The consolidation program is a realistic commitment by the Authority to help ensure continued agricultural use on remnant parcels. The consolidation program also is consistent with programs used for other linear transportation facilities (e.g., projects sponsored by Caltrans). Such viable remnant parcels were not included in the acreage of remnant parcel calculations and accordingly were not added to HSR's acquisition area.

However, based on the remnant parcel evaluation criteria (i.e., lack of access, size, shape, or location), analysts determined that some remnant parcels were not viable for continued agricultural production by the existing owner or adjacent owners. Examples of remnant parcels determined to be nonviable include, for example, sliver-shaped or corner remnant parcels smaller than 20 acres that cannot be consolidated with adjacent parcels because of intervening rail alignments or roads.

Mitigation Measure AG-MM#1 requires that the Authority (in partnership with the California Department of Conservation) acquire conservation easements to protect an equivalent amount of Important Farmland from future conversion. This measure requires a replacement ratio of not less than 0.5:1 for Important Farmland that is indirectly converted through parcel severance and other indirect impacts. The Authority will work with local, regional, and state organizations and agencies to identify suitable land in the region, as well as willing landowners, and establish agricultural conservation easements on the basis established in Mitigation Measure AG-MM#1 to provide for permanent protection and long-term stewardship of working agricultural lands. Even with this commitment, the Authority recognizes that the impacts cannot be fully mitigated.

The analysis of parcel severance (including nonviable remnant parcels) was conducted for the purpose of satisfying CEQA and NEPA by describing the nature and extent of the impact, focusing on the topics of Important Farmland conversion (Section 3.14, Agricultural Farmland, of the Draft EIR/EIS) and social/economic effects (Section 3.12, Socioeconomics and Communities, of the Draft EIR/EIS). Such analysis is not, however, assumed to be adequate for the real estate transactions that would occur during the right-of-way acquisition process. More detailed parcel-specific analysis would take place during the appraisal process before property acquisition. This analysis would be consistent with the Uniform Relocation Assistance and Real Property Acquisition Policies Act, which establishes minimum standards for the treatment and compensation of individuals whose real property is acquired for a federally funded project (see Volume 2, Appendix 3.12-A, Relocation Assistance Documents, for more information). Additional information about acquisition, compensation, and relocation assistance is available by request at the Authority's website: http://www.hsr.ca.gov/Programs/private_property.html.

Responses to comments regarding the interrupted access to remnant parcels is discussed under SJM-Response-AG-1: Temporary and Permanent Disruption of Agricultural Infrastructure Serving Important Farmland As a Result of Project Construction.

17.9.3 SJM-Response-AG-3: Wind Effects—Dust Deposition and Pesticide and Herbicide Drift on Adjacent Important Farmland

Multiple comments expressed concerns regarding application of herbicide and pesticide during construction and operation of the project and drift of dust, pesticides, and herbicides as a result of project construction and operation. Concerns include decrease in agricultural productivity as a result of deposition of dust on adjacent fields and the potential for herbicides used for weed control during project construction and operation to compromise Certified Organic status of adjacent fields in organic agricultural production.

Airborne materials such as dust, pesticides, and herbicides have potential to affect agricultural productivity on adjacent parcels of Important Farmland if carried by wind. Deposition of dust can reduce productivity by interfering with photosynthesis and creating an environment favorable to pests, in particular spider mites (Authority 2012, as cited in Section 3.14, Agricultural Farmland, of the Draft EIR/EIS; see also Volume 2, Appendix 3.14-D, Induced Wind Impacts: Effects on Pollination; Blossoms and Dust). Pesticide and herbicide drift to adjacent parcels has potential to adversely affect agricultural productivity, particularly when the adjacent parcel has Certified Organic status. Additionally, MM-BIO#2, Prepare and Implement a Weed Control Plan, would establish approaches to minimize and avoid the spread of invasive weeds during ground-disturbing activities during construction, operations, and maintenance.

Dust Deposition

Construction activities, such as grading and movement on staging areas and temporary access roads, have potential to increase airborne dust. In addition, project operation has potential to raise dust during maintenance activities.

During project construction, contractors would control fugitive dust through compliance with requirements of the California Air Resources Board and San Joaquin Valley Air Pollution Control District permits (Volume 2, Appendix 3.14-D, page 4). Such measures may include watering exposed surfaces. Minimizing construction-caused airborne dust would minimize impacts of dust on crop productivity on Important Farmland.

During project operation, high train speeds could increase dust generation. In order to minimize dust generation, maintenance would be required to minimize dust creation so that induced wind would not cause the dust to drift. During the right-of-way process, revised dust plans would be developed (Volume 2, Appendix 3.14-D, page 4).

Pesticide and Herbicide Drift

Induced wind from the HSR train could cause pesticides and herbicides applied to one parcel to drift to an adjacent parcel (Authority 2012, as cited in Section 3.14 of the Draft EIR/EIS; see Volume 2, Appendix 3.14-D). In addition, some of the agriculture in production adjacent to the resource study area is organic, associated with a 3-year certification period. Drift of pesticide and herbicide used during construction at construction sites and maintenance activities along the HSR corridor could compromise the organic certification of these farms, undermining their viability.

Existing laws prohibit drift from pesticide applications off the parcel(s) where the pesticide is applied. Volume 2, Appendix 3.14-D notes (page 4) that current pesticide application practices include both ground and aerial applications. These practices, including limiting application of pesticides to times when winds are below 5 to 10 mph, are presently used successfully for application of pesticides in areas with transportation routes (roads, highways, and railroads). Pesticide application along the San Jose to Merced Project Section would be similar to other linear transportation routes. The primary difference is that the HSR would induce wind. Commenters expressed concern that HSR-induced wind could cause pesticides to drift to an adjacent field. However, the wind generated by the passing train is less than 5 to 10 mph at the edge of the right-of-way, so any pesticides used to control weeds within the right-of-way would not blow onto adjacent agricultural parcels (page 2 of Volume 2, Appendix 3.14-D). Therefore, operation of the project is not expected to exacerbate pesticide drift.

In addition, it is possible that herbicides would be used at construction sites. Impact AG#7, Permanent Induced Wind Interference with Agricultural Activities on Important Farmland, of the Draft EIR/EIS was revised to mention herbicide application during project construction. As described in Impact AG#1 on page 3.14-28 in the Draft EIR/EIS, some Important Farmland would be used for construction of the project. Pursuant to AG-IAMF#1, all construction access, mobilization, material laydown, and staging areas on Important Farmland would be returned to a condition equal to the pre-construction staging condition. For any Important Farmland with Certified Organic status at the time of construction, restoration would include restoring the land so that it can receive Certified Organic status. Implementation of Mitigation Measure BIO#2, Prepare and Implement a Weed Control Plan, would further minimize any effects of herbicide application during the construction phase. The CEQA conclusion for this impact was revised to recognize that implementation of Mitigation Measure BIO#2 would further reduce risk of spread of herbicide during project construction.

17.10 Cultural Resources

17.10.1 SJM-Response-CUL-1: Baseline for Identification of Historic Properties

Several commenters noted concern for details regarding treatment of properties that may turn 50 years of age between 2017 and completion of the project.

The project's environmental baseline for analysis across all resources types is 2016–2017, which reflects the project's Notice of Intent and Notice of Preparation. In accordance with the project's Section 106 Programmatic Agreement, subsequent memoranda of agreement (MOA) would provide a provision for the development and implementation of a post-review identification and evaluation effort as applicable to the undertaking. Please see EIR/EIS Volume 2, Appendix 3.17-D, Programmatic Agreement Among the FRA, the ACHP, the SHPO, and the Authority Regarding Compliance with Section 106 of the NHPA, As It Pertains to the California High-Speed Rail Project. The project's archaeological and built environment treatment plans would also address the identification and treatment of historic properties that may turn 50 years of age between 2017 and the completion of the project.

17.10.2 SJM-Response-CUL-2: Changes to the Archeological Survey Report

Several commenters suggested revisions to the Archeological Survey Report (ASR; Authority 2019b, as cited in Section 3.17, Cultural Resources, of the Draft EIR/EIS).

The Authority consulted with the California State Historic Preservation Office (SHPO) on the technical findings in the ASR, including several workshop meetings to preview eligibility determinations. The Authority also consulted on the Section 106 finding of effects on archaeological resources. Please refer to the consulting parties record in EIR/EIS Volume 2, Appendix 3.17-A, Correspondence. The SHPO concurred with the identification of archaeological historic properties as represented in the ASR on August 27, 2019, as well as the finding of effects on those historic properties, on March 27, 2020. The ASR was circulated to Section 106 consulting parties for review, and those comments were considered for revisions made prior to submittal to SHPO. Please refer to the agency and interested parties outreach record in EIR/EIS Volume 2, Appendix 3.17-A and ASR Appendix C. Based on the detailed technical analysis presented in the ASR, as well as the input provided by California's SHPO, the Authority contends that there is sufficient substantial evidence to support the findings presented in the EIR/EIS. No further revisions to the ASR are warranted.

17.10.3 SJM-Response-CUL-3: Changes to the Historic Architectural Survey Report

Several commenters suggested revisions to the Historic Architectural Survey Report (HASR; Authority 2019a, as cited in Section 3.17, Cultural Resources, of the Draft EIR/EIS).

The Authority consulted with the California SHPO on the technical findings in the HASR, including several workshop meetings to preview eligibility determinations. The Authority also consulted on the Section 106 finding of effects on historic architectural resources. The SHPO concurred with

the identification of historic architectural resources as represented in the HASR on July 12, 2019, as well as the finding of effects on those historic properties, on March 27, 2020. The HASR was circulated to Section 106 consulting parties for review, and those comments were considered for revisions made prior to submittal to SHPO. Please refer to the agency and interested parties outreach records in EIR/EIS Volume 2, Appendix 3.17-A, Correspondence. Based on the detailed technical analysis presented in the HASR, as well as the input provided by California's SHPO, the Authority contends that there is sufficient substantial evidence to support the findings presented in the EIR/EIS. No further revisions to the HASR are warranted.

17.10.4 SJM-Response-CUL-4: Continued Tribal Consultation

Several commenters refer to the need for tribal consultation and impacts on indigenous sites.

The Authority is currently in ongoing confidential consultation with the Amah Mutsun Tribe. To date, this has included general informational meetings, specific consultation meetings, and outreach correspondence. Please see the tribal consultation records in EIR/EIS Volume 2, Appendix 3.17-B, Cultural Resources—San Jose to Merced Project Section Tribal Outreach and Consultation Efforts 2009–2018. The Authority will continue to discuss concerns throughout project planning and development of the Section 106 MOA and associated treatment plans (if needed). The Authority anticipates having a signed MOA prior to achieving the Record of Decision.

17.11 Public and Agency Involvement Standard Response

17.11.1 SJM-Response-OUT-1: Public Outreach

Multiple commenters were concerned with the public involvement process and suggested that the outreach was not adequate for a project of this size and scope. Several commenters requested an extension of the public comment period on the Draft EIR/EIS. Some of those requests indicated a need for at least a 30-day extension. Commenters also expressed concern regarding availability of supporting technical reports.

Pursuant to the requirements of NEPA and CEQA, the Authority has conducted an extensive public and agency involvement program as part of the environmental review process. Public involvement and outreach included development and provision of informational materials such as fact sheets, informational and scoping meetings (including town hall meetings), public and agency meetings, meetings with individuals and groups, as well as presentations and briefings to interested and/or affected organizations and associations.

Agency involvement included agency scoping meetings, Interagency Working Group meetings with agency representatives, and other agency consultation. Tables 9-1 to 9-4 of the Final EIR/EIS list the key stakeholder outreach meetings held as part of the Authority's outreach efforts associated with the San Jose to Merced Project Section development process. Public and agency outreach also included notification and circulation of the Draft EIR/EIS. Chapter 9 of the Final EIR/EIS describes the public and agency involvement efforts conducted during the preparation, and after publication, of the Draft EIR/EIS.

Requests for an Extension

The Authority was the CEQA and NEPA lead agency for the Draft EIR/EIS. As such, public noticing of the availability of the Draft EIR/EIS for public review was conducted by the Authority.

The San Jose to Merced Project Section Draft EIR/EIS was initially circulated for 45 days as required by CEQA (CEQA Guidelines §§ 15080–15088). The CEQA Guidelines provide:

The public review period for a draft EIR shall not be less than 30 days nor should it be longer than 60 days except under unusual circumstances. When a draft EIR is submitted to the State Clearinghouse for review by state agencies, the public review period shall not be less than 45 days, unless a shorter period,

not less than 30 days, is approved by the State Clearinghouse.
(14 Cal. Code Regs. § 15105)

Likewise, the Authority, in its role as NEPA lead agency, circulated the Draft EIR/EIS consistent with Section 13(c)(9) of the FRA Procedures for Considering Environmental Impacts, which provides:

The Draft EIS shall be made available for public and agency comment for at least 45 days from the Friday following the week the draft EIS was received by EPA [U.S. Environmental Protection Agency]. The time period for comments on the draft EIS shall be specified in a prominent place in the document, but comments received after the stated time period expires should be considered to the extent possible. (64 Fed. Reg. 101, page 28545, May 26, 1999)

The Draft EIR/EIS was originally made available for review and comment for a 45-day public review beginning on April 24, 2020, and ending on June 8, 2020, pursuant to CEQA and NEPA. In response to agency and stakeholder requests and in consideration of limitations caused by the novel coronavirus (COVID-19) pandemic, the Authority extended the comment period by 15 days to end on June 23, 2020. The Authority believes the time provided, including the 15-day comment period extension, was sufficient for the public to review and provide comments on the San Jose to Merced Project Section Draft EIR/EIS.

Circulation and Notice of Availability

Per the requirements set out by the CEQA Guidelines Sections 15086 and 15087, the Authority provided widespread notice of the availability of the Draft EIR/EIS to ensure that members of the public; local, state, and federal agencies; and tribes had the opportunity to review and provide comments. The Authority provided broad notice of the availability of the Draft EIR/EIS in the following ways:

- Publication in the legal section of eight local newspapers, including some in Spanish, Mandarin, and Vietnamese
- E-mail to all individuals/organizations who had previously registered to receive information via e-mail about the Draft EIR/EIS
- Direct mailing to those on the project mailing list and those that had requested notice in writing
- Direct mailing to owners/occupants of property within 1,000 feet of the project alternative's footprints for unincorporated areas, within 300 feet of the project footprint for incorporated areas, and within 1,200 feet of the HSR station footprint(s)
- Direct mailing to agencies, elected officials, and tribes
- Direct mailing to schools and educational facilities within 0.5 mile of the project footprint
- Direct mailing to schools, educational facilities, and school districts within 0.25 mile of the project footprint
- Filed electronic notices with the County Clerks' Offices in Santa Clara, San Benito, and Merced Counties
- Submitted copies to the State Clearinghouse
- Publication in the *Federal Register*

The Authority provided access to the Draft EIR/EIS in the following ways: the entire Draft EIR/EIS, Volumes 1 through 3, were made available on the Authority's website; electronic media containing these documents were made available to anyone who requested them via the Authority's website, free of charge; and electronic media and printed copies were made available

for public view in the Authority's Sacramento and San Jose offices. In the months prior to the April 24, 2020 Draft EIR/EIS publication date, the Authority maintained regular contact with the repositories regarding their capacity to receive and maintain the distribution materials for public review, and electronic media and printed copies were prepared for the public libraries in the vicinity of the project. However, considering the COVID-19 pandemic, all repositories were closed or operating with limited public access in compliance with Governor Newsom's shelter in place order (Executive Order N-33-20) and applicable County Health Officer directives.

All technical reports and other documents referenced in the Draft EIR/EIS were available in electronic form by request via the Authority's website or by calling the Authority office at (800) 455-8166. These supporting documents not included in the volumes of the Draft EIR/EIS were not provided on the website because the Authority makes every effort to ensure the website and its contents meet mandated Americans with Disabilities Act requirements as per the California State-mandated Web Content Accessibility Guidelines 2.0 Level AA standard.

The Authority also facilitated awareness of the availability of the Draft EIR/EIS and the comment period in the following ways: by using mailed announcements and e-blasts, by providing information during monthly agency meetings and regular consultations, and by holding three virtual community open houses and a virtual public hearing during the 45-day review period for the Draft EIR/EIS.

The public was given the opportunity to comment on the Draft EIR/EIS in several ways. Comments could be submitted to the Authority by mailing a hardcopy letter, verbally at the public hearing, by means of e-mail, or electronically on the Authority's website. The Authority has considered all comments on the Draft EIR/EIS received during the 60-day comment period between April 24 and June 23, 2020. These comments and the Authority's responses are included in the following chapters of this Final EIR/EIS: Chapters 21, Federal Agency Comments; Chapter 22, State Agency Comments; Chapter 23, Elected Official Comments; Chapter 24, Local Agency Comments; Chapter 25, Business and Organization Comments; and Chapter 26, Individual Comments. A total of 747 submission letters (a submission letter could consist of one or multiple comments) were submitted on the Draft EIR/EIS. These submissions were provided via e-mail, via mailed letters, and via the Authority's website. Within these submission letters were approximately 4,889 individual comments.

Public Hearing and Meeting Notices

The Notice of Availability (NOA), which was distributed initially on April 24, 2020, included notice of an in-person May 27, 2020, Public Hearing as well as in-person Community Open Houses on May 11, May 14, and May 18, 2020.

In addition to notification efforts described above in the Circulation and Notice of Availability section, the Authority also posted the NOA on the San Jose to Merced Project Section webpage with a link from the Authority's homepage. The Authority also issued a press release on April 22, 2020, with the specific hearing and meeting information.

After the distribution of the NOA, California Governor Gavin Newsom announced directives to address the need to slow the spread of COVID-19 in California (and globally) by prohibiting gatherings of any size. In addition, Governor Newsom issued Executive Order N-33-20, which orders all individuals living in the State of California to stay home or at their place of residence, effective immediately and until further notice. In order to comply with the Governor's directives and Executive Order N-33-20, and to protect public health, the Authority changed the traditional in-person format for the public hearing and community open houses to a "virtual" format held online and via telephone. Up-to-date information on the Public Hearing and Community Open Houses was made available on the Authority website.

To facilitate the three virtual open houses and public hearing, various publications and materials were developed in English, Spanish, Vietnamese, and Chinese. These documents included the Statewide High-Speed Rail Fact Sheets, the San Jose to Merced Project Section Executive Summary, and the NOA. In addition, the Authority website includes information about HSR, the proposed HSR route, the Authority's Business Plans since 2008, newsletters, press releases,

board of directors' meetings, recent developments, status of the environmental review process, Authority contact information, and related links. Language interpreters were available at the virtual Community Open Houses and Public Hearing.

Comments Received After the Comment Period

The Draft EIR/EIS for the San Jose to Merced Project Section was circulated for public review and comment for 60 days between April 24, 2020 and June 23, 2020. There were approximately 38 comment submissions received by the Authority following the close of the comment period. While these submissions were late, they were still considered and responded to in Volume 4 of this Final EIR/EIS.

Comments Received on the Revised/Supplemental Draft EIR/EIS

The Revised/Supplemental Draft EIR/EIS for the San Jose to Merced Project Section was circulated for public review and comment for 45 days between April 23, 2021 and June 9, 2021. The Authority received a total of 16 comment submissions through a combination of letters and emails. These 16 submissions yielded a total of 226 discrete comments.

17.11.2 SJM-Response-OUT-2: Consultation with Local Agencies and Consistency with Local Regulations

Some commenters claimed that the Authority has failed to consult with local agencies as required by law. Several commenters questioned the statement made in the Draft EIR/EIS that the Authority is not required to comply with local regulations for various resources.

The Authority has consulted extensively with local government officials and local public agency staff during the planning and design of the San Jose to Merced alternatives and the development of the EIR/EIS. Chapter 9 of this Final EIR/EIS documents local public agency consultation activities from 2009 to 2020. Additionally, Section 9.4.7, Agency Meetings and Consultation, of this Final EIR/EIS summarizes the coordination efforts with cooperating agencies.

The project is being undertaken by a state agency (the Authority), and the Authority is acting as the federal lead agency pursuant to the MOU executed by the FRA and the Authority on July 23, 2019. The project must conform to the policies and objectives of the statutes and regulations under which the Authority operates, including all applicable state and federal regulations. Some commenters suggested the HSR project must conform to local general plans. Since an agency of the State of California is the project proponent, the project is not subject to local government general plan policies or zoning regulations.

Nevertheless, the Authority recognizes that the project can be most successful if designed in a manner that is as sensitive as possible to the local environment through which it must travel, while still meeting the unique design constraints of HSR service. Furthermore, through meetings with local agency staff and direct discussions with individual local government officials and staff, the Authority has endeavored to develop a project design that minimizes local impacts and is as consistent with local plans as possible. Consistent with CEQA and NEPA requirements, the project's consistency with local general plans and zoning regulations is discussed in the EIR/EIS in Section 3.13, Station Planning, Land Use, and Development, and further in Volume 2, Appendix 2-J, Regional and Local Plans and Policies, and Volume 2, Appendix 2-K, Policy Consistency Analysis. Appendix 2-K also contains a discussion of the extent to which the Authority would reconcile the project with the plan as required by 40 C.F.R. Section 1506.2(d).

17.11.3 SJM-Response-OUT-3: Coordination with Local Conservation Agencies

Commenters suggested that the Authority should work with local expert conservation agencies on wildlife issues.

The Authority conducted extensive outreach with stakeholders, community working groups, technical working groups, and agencies as discussed in Chapter 9, Public and Agency Involvement. This chapter details the groups and agencies with which the Authority met, and Volume 2, Appendix 9-A, Public and Agency Involvement, includes more details about these

meetings, topics, and dates. Through the public comment period, many of these groups and agencies provided comments on the Draft EIR/EIS and Revised/Supplemental Draft EIR/EIS. As a result of comments and information provided, the Authority has revised portions of the Final EIR/EIS to reflect this information. The Authority will also continue to work with agencies through various permitting processes and with stakeholders, including conservation agencies, to further address their concerns.