3 Affected Environment, Environmental Consequences, and Mitigation Measures

3.11 Safety and Security

3.11.1 Introduction

Section 3.11, Safety and Security, of this *Merced to Fresno Section: Central Valley Wye Final Supplemental Environmental Impact Report (EIR)/ Environmental Impact Statement (EIS)* (Final Supplemental EIR/EIS) updates the *Merced to Fresno Section California High-Speed Train Final Project EIR/EIS* (Merced to Fresno Final EIR/EIS) (California High-Speed Rail Authority [Authority] and Federal Railroad Administration [FRA] 2012) with new and revised information relevant to safety and security, analyzes the potential impacts of the No Project Alternative and the Central Valley Wye alternatives, and describes impact avoidance and minimization features (IAMF) that would avoid, minimize, or reduce these impacts. Where applicable, mitigation measures are proposed to further reduce, compensate for, or offset impacts of the Central Valley Wye alternatives. Section 3.11 also describes the affected environment for safety and security in the resource study area (RSA).

The analysis herein has similarities to and differences from the analysis conducted in the Merced to Fresno Final EIR/EIS. Both analyses include an evaluation of the exposure of high-speed rail (HSR) passengers, employees, and the public or structures to significant risk of loss, injury, or death during construction and operations. Where information has changed or new information has become available since the Merced to Fresno Final EIR/EIS was prepared in 2012, the Central Valley Wye alternatives analysis uses the updated versions of these sources or datasets. Relevant portions of the Merced to Fresno Final EIR/EIS that remain unchanged are summarized and referenced in this section but are not repeated in their entirety. The analyses differ in the following ways:

- The safety and security impact analysis of the Merced to Fresno Final EIR/EIS and this Final Supplemental EIR/EIS is based on international rail operating experience and existing conditions of the design and operational features of their respective alternatives. The current analysis of this Final Supplemental EIR/EIS also incorporates the hazard and vulnerability management process described in the Authority's *Technical Memorandum: Safety and Security Management Plan: California High-Speed Train Project* (Authority 2014a) and *Technical Memorandum: Safety and Security Design Requirements for Infrastructure Elements* (Authority 2013), which include the identification and assessment of safety and security hazards that directly or indirectly affect the safety of passengers, employees, rolling stock, and facilities of the HSR system.
- Security issues related to state prison facilities were addressed in the Merced to Fresno EIR/EIS, but are not included in this Final Supplemental EIR/EIS because the perimeter and property of the nearest state prison, the Central California Women's Facility, is located outside of the safety and security RSA for the Central Valley Wye alternatives. Construction activities would not require access through the secure perimeter of this facility. Because impacts related to dust were included in the Merced to Fresno Final EIR/EIS analysis and were determined to have negligible intensity under National Environmental Policy Act (NEPA) and a less than significant impact on state prisons under California Environmental Quality Act (CEQA) (Authority and FRA 2012), the analysis of safety impacts from dust (i.e., Valley fever) on prisons is not included in this Final Supplemental EIR/EIS.

Additional details on safety and security are provided in the following appendices of this Final Supplemental EIR/EIS:

- Appendix 2-C, Applicable Design Standards, provides the list of relevant design standards for the Central Valley Wye alternatives.
- Appendix 3.11-A, Safety and Security Local and Regional Plans and Laws Consistency Analysis, provides a discussion of inconsistencies or conflicts that may exist between the Central Valley Wye alternatives and regional or local plans or laws.

- Appendix 3.11-B, Safety and Security Data, provides data used in the analysis of impacts on safety and security.
- Appendix 3.11-C, Existing and Proposed Railroad Crossings, provides lists of existing and proposed railroad crossings in relation to the Central Valley Wye alternatives.

Since publication of the Draft Supplemental EIR/EIS, there have been no substantive changes to this section beyond the global issues described at Section S.1.2, Global Changes in the Final Supplemental EIR/EIS, of the Summary.

Given its complex and high-speed operating environment, safe and secure operation of the HSR is of highest priority, and it is important to understand all aspects related to safety and security, including emergency services and systems in the RSAs and surrounding San Joaquin Valley. Six other resource sections in this Final Supplemental EIR/EIS provide additional information related to safety and security:

- **Section 3.2, Transportation**—Analysis of potential safety improvements that could result from grade separations and road closures of the Central Valley Wye alternatives and their potential beneficial impacts on automobile, pedestrian, and bicycle traffic.
- **Section 3.3, Air Quality and Global Climate Change**—Impacts of constructing the Central Valley Wye alternatives on safety from air emissions, such as air toxics and fugitive dust emissions.
- **Section 3.6, Public Utilities and Energy**—Impacts of constructing the Central Valley Wye alternatives on utilities, energy, water infrastructure, such as irrigation and drainage canals, stormwater systems, water districts, groundwater use, and water supply. Additionally, this section addresses the Central Valley Wye alternatives' construction impacts on natural gas and petroleum fuel pipelines (identified as high-risk facilities in the context of safety and security in this section).
- **Section 3.8, Hydrology and Water Resources**—Impacts of constructing the Central Valley Wye alternatives on changes in flood flows and flood risk.
- **Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources**—Impacts of constructing the Central Valley Wye alternatives on seismicity and geotechnical resources.
- **Section 3.10, Hazardous Materials and Wastes**—Impacts of constructing the Central Valley Wye alternatives on safety related to hazardous materials and waste, such as use of hazardous materials or exposure to soil and groundwater contamination.

Definition of Resources

The following are definitions for resources and facilities related to safety and security analyzed in this Final Supplemental EIR/EIS. These definitions are the same as those used in the Merced to Fresno Final EIR/EIS (Authority and FRA 2012).

- **Emergency Services**—Emergency services include emergency response by fire, law enforcement, and emergency services to fire, seismic events, or other emergency situations.
- **Fire**—Fire protection services provide predominantly emergency firefighting and rescue services. These services typically include local fire departments, including paid and volunteer fire departments, county fire services, and equipment used to respond to incidents.
- **Law Enforcement**—Law enforcement services address the discovery, deterrence, rehabilitation, or punishment of criminal behavior and that the laws of an area are obeyed. These services are provided by federal, state, and local law enforcement agencies. Railroad operators, including the Authority, may also employ railroad police officers to enforce state laws for the protection of railroad property, personnel, passengers, and cargo (49 Code of Federal Regulations [C.F.R.] Part 207).

- **Emergency Medical Services**—Emergency medical services refer to the treatment and transport of people in crisis health situations that may be life threatening. These services are typically provided by local fire departments, emergency medical service agencies, and independent ambulance services.
- **Emergency Response Plans**—Emergency response plans are created by counties and cities within the RSA and outline procedures for operations during emergencies such as earthquakes, floods, fires, and other natural disasters; hazardous materials spills; transportation emergencies; civil disturbance; and terrorism.
- **Community Safety and Security**—Community safety and security addresses safety and security concerns of construction site workers, HSR passengers and employees, and members of the general public (including motorists, pedestrians, and bicyclists) that could be exposed to significant risks of loss, injury, or death during construction, and HSR system passengers and employees or structures that could be exposed to significant risk of loss, injury, or death during operations.
  - Community safety addresses emergency and fire response; automobile, pedestrian and bicycle safety; landfill safety; Valley Fever; fire hazards; rail and airport safety; school safety; and high-risk facilities and fall hazards.
  - Community security addresses high-risk facility security, criminal acts (including vandalism, theft and violence), and acts of terrorism.

3.11.2 Laws, Regulations, and Orders

This section identifies laws, regulations, and orders that are relevant to the analysis of safety and security in this Final Supplemental EIR/EIS. Also provided are summaries of new, additional, or updated laws, regulations, and orders that have occurred since publication of the Merced to Fresno Final EIR/EIS.

3.11.2.1 Federal

The following federal laws, regulations, orders, and plans are the same as those described in Section 3.11.2, Laws, Regulations, and Orders, of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012: page 3.11-3):

- Federal Railroad Administration Procedures for Considering Environmental Impacts (64 Federal Register 28545)[1]
- Rail Safety Improvement Act 2008 (Public Law 110-432)
- United States Code on Railroad Safety (49 United States Code [U.S.C.] § 20101 et seq.)
- Department of Homeland Security/Transportation Security Administration (49 C.F.R. Part 1580)
- Transportation Security Administration—Security Directives for Passenger Rail
- Emergency Planning and Community Right-to-Know Act (42 U.S.C. § 11001-11050)

New, additional, or updated federal laws, regulations, and orders follow.

[1] On December 6, 2016, FRA published a Notice of Proposed Rulemaking (NPRM) proposing to amend its regulations on passenger equipment safety standards. See 81 Federal Register 8006. The NPRM addresses three major subject areas: (1) Tier III transit safety standards; (2) alternative crashworthiness and occupant protection performance requirements for Tier 1 passenger equipment; and (3) the maximum authorized speed for Tier III passenger equipment. These standards will not become effective unless FRA publishes a final rule. On November 21, 2018, FRA published a final rule amending FRA's passenger equipment safety standards (83 Fed. Reg. 59182). A minor error in this final rule was corrected on April 19, 2019 (84 Fed. Reg. 16414).

Federal Railroad Administration—System Safety Program (49 C.F.R. Part 270)

This regulatory program requires commuter and intercity passenger railroads to develop and implement a system safety program to improve the safety of their operations. A system safety program is a structured program with proactive processes and procedures, developed and implemented by railroads to identify and mitigate or eliminate hazards to reduce the number and rates of railroad accidents, incidents, injuries, and fatalities.

Federal Aviation Administration

Helicopter external lift operations are regulated under Title 14 C.F.R. Part 133, Rotorcraft External-Load Operations, Section 133.33 Operation Rules. The Federal Aviation Administration requires helicopter operators to submit an External Load Lift Plan to the agency for review and approval for public-safety purposes prior to lifting external loads over or immediately adjacent to structures and/or roads. The plan would specify the following:

- Pilot qualifications and experience (pilots must be qualified in accordance with 14 C.F.R. Part 133 for Class A and B, external load operations)
- Requirement for an aerial hazard analysis of the construction site
- Protective clothing/equipment for ground personnel
- Specifications for all rope used to suspend external loads
- Responsibility for providing load calculations
- Requirements for mission briefing prior to aerial operations
- Safety considerations from Chapter 11 of the *Interagency Helicopter Operations Guide* (National Wildfire Coordination Group 2016), adapted to meet the project's requirements
- Emergency procedures in the event of a mechanical failure

The plan would be required to show the exact routes that the helicopter would use and the proximity of the routes to all nearby roads and structures. If the helicopter must fly over a building, the building must be vacated, and if it would fly over a road, all traffic on the road must be temporarily stopped. If external load helicopter operations are conducted in an area away from structures and roads, a waiver may be obtained exempting the operator from submitting a plan.

3.11.2.2 State

The following state laws, regulations, orders, and plans are the same as those described in Section 3.11.2 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012: page 3.11-4):

- California Public Utilities Code (§§ 7710–7727, 7661, and 7665 et seq.)
- California Emergency Services Act (§§ 8550–8692)
- California Public Resources Code (§ 21096)

New, additional, or updated state laws, regulations, and orders follow.

California General Plan Law (Gov. Code, § 65302)

California Government Code (Gov. Code) Section 65302 requires cities and counties to include in their general plan a statement of development policies setting forth objectives, principles, standards and plan proposals for seven policy areas, including safety. The safety element is to provide for the protection of the community from any unreasonable risks associated with seismic and geologic hazards, flooding, and wildland and urban fires. The element must also address evacuation routes, peak-load water supply requirements, and minimum road widths and clearances around structures, as those items are related to identified fire and geologic hazards. For example, the Central Valley Wye alternatives would include IAMFs that would require that construction contractors coordinate with local jurisdictions before and during construction to maintain emergency vehicle access.

California Public Resources Code Section 21098

California Public Resources Code Section 21098 specifies notification procedures if a proposed project is located within a "low-level flight path" for aircraft that fly lower than 1,500 feet above the ground or a "military impact zone" within 2 miles of a military installation under the jurisdiction of the U.S. Department of Defense.

California Public Utilities Code Section 765.5

Under California Public Utilities Code Section 765.5, the California Public Utilities Commission (CPUC) is required to establish minimum inspection standards, to ensure that railroad locomotives, equipment, and facilities location in Class 1 railroad yards in California will be inspected not less frequently than every 120 days, and inspection of all branch and main line track not less frequently than every 12 months. The CPUC is required to conduct focused inspections of railroad yards and track as determined to be necessary. The focused inspection program will target railroad yards and track that pose the greatest safety risk, based on inspection data, accident history, and rail traffic density.

California Public Utilities Code Section 768

Under California Public Utilities Code Section 768, the CPUC may, after a hearing, require every public utility to construct, maintain, and operate its line, plant, system, equipment, apparatus, tracks, and premises in a manner so as to promote and safeguard the health and safety of its employees, passengers, customers, and the public. The CPUC may prescribe, among other things, the installation, use, maintenance, and operation of appropriate safety or other devices or appliances, including interlocking and other protective devices at grade crossings or junctions and block or other systems of signaling. The CPUC may establish uniform or other standards of construction and equipment, and require the performance of any other act that the health or safety of its employees, passengers, customers, or the public may demand.

CPUC General Order 95

Overhead transmission lines must meet the requirements of the CPUC, General Order No. 95, Rules for Overhead Electric Line Construction. This design code addresses shock hazards to the public by providing guidelines on minimum clearances to be maintained for practical safeguarding of persons during the installation, operation, or maintenance of overhead transmission lines and their associated equipment.

CPUC General Order 128

Underground electrical supply and communications must meet the requirements of the CPUC, General Order No. 128, Rules for Construction of Underground Electric Supply and Communication Systems. This design code requires that the design, construction, and maintenance of underground electrical supply and communications systems be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of the communication or supply lines and equipment. It also indicates depths, clearances, materials, locations, and other guidelines for underground infrastructure, as well as safety precautions for workers and the public.

California Department of Forestry and Fire Protection—Strategic Fire Plan for California

The *Strategic Fire Plan for California* (California Department of Forestry and Fire Protection [CAL FIRE] 2010) provides the state's road map for reducing the risk of wildfire. Part of this plan identifies and assesses community assets at risk of wildfire damage. CAL FIRE generated a list of California communities at risk for wildfire and created fire hazard severity zones.

Gas Monitoring and Control at Active and Closed Disposal Sites (California Code of Regulations title 27, § 20917 et seq.)

California Code of Regulations, title 27, section 20917 et seq. sets forth the performance standards and the minimum substantive requirements for landfill gas monitoring and control as it relates to active solid waste disposal sites and to proper closure, post-closure maintenance, and

ultimate reuse of solid waste disposal sites. These standards and requirements are intended to ensure that public health and safety and the environment are protected from pollution that may occur because of the disposal of solid waste.

Power Line Safety and Fire Prevention

California Code of Regulations, title 14, section 1250, Fire Prevention Standards for Electric Utilities, specifies utility-related measures for fire prevention. It also provides specific exemptions from electric pole and tower firebreak clearance standards, electric conductor clearance standards and to specify when and where the standards apply.

3.11.2.3 Regional and Local

The *Madera County General Plan* (Madera County 1995) and the *Fresno County General Plan* (Fresno County 2003) are the same as described in Section 3.11.2 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012: pages 3.11-4 through 3.11-6). There are no new or updated regional laws, regulations, and orders.

All general plans must include a safety element for the protection of the community from any unreasonable risks associated with seismic and geologic hazards, flooding, and wildland and urban fires (Gov. Code, § 63502(g)). The element must also address evacuation routes, peak-load water supply requirements, and minimum road widths and clearances around structures because those items relate to identified fire and geologic hazards.

Other Requirements

Many state and local safety requirements may incorporate National Fire Protection Association (NFPA) Codes and Standards. The NFPA develops, publishes, and disseminates more than 300 codes and standards intended to minimize the possibility and effects of fire and other risks. *Technical Memorandum: Safety and Security Design Requirements for Infrastructure Elements* (TM 2.8.1) (Authority 2013) incorporates several NFPA codes and standards. For example, TM 2.8.1 relies on *NFPA 130—Standard for Fixed Guideway and Passenger Rail Systems* (NFPA 2010) to specify guidance on incorporating passenger safety in system design; egress routes in the event of an emergency; emergency response planning, training, and operations; and fire and smoke prevention and suppression. Additionally, *NFPA 1710—Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* (NFPA 2016) includes measures to protect citizens and the occupational safety and health of fire department employees.

General Plan Policies and Ordinances

Table 3.11-1 lists county and city general plans, municipal codes, and emergency plans relevant to the Central Valley Wye alternatives. Refer to Section 3.11.2.3, Regional and Local, of the Merced to Fresno Final EIR/EIS for more information.

Table 3.11-1 Regional and Local Plans and Policies

Policy Title	Summary
Merced County	
2030 Merced County General Plan (Merced County 2013a)	Merced County adopted the *2030 Merced County General Plan* on December 10, 2013, updating the previous version of the general plan that was included in Section 3.11.2.3 (page 3.11-5) of the Merced to Fresno Final EIR/EIS. The general plan includes the following goals and policies, which are applicable to safety and security: ▪ Policy CIR-4.1: Encourage a complete, safe, and interconnected bicycle and pedestrian circulation system that serves both commuter and recreational travel, and provides access to major destinations within and between urban communities and cities.

Policy Title	Summary
	▪ Goal CIR-5: Maintain and expand a rail transportation system that provides safe, efficient, and reliable movement of freight and passengers within and through Merced County. ▪ Policy CIR-5.4: Encourage alternatives to at-grade rail crossings at existing and future roads. ▪ Goal HS-3: Minimize the exposure of county residents and public and private property to the effects of urban and wildland fires. ▪ Policy PFS-7.6: Strive to achieve and maintain optimum staffing levels and appropriate response times to provide adequate emergency medical services for all county residents.
County of Merced Emergency Operations Plan (2013b)	Merced County adopted the *County of Merced Emergency Operations Plan* on December 2013, updating the previous version of the general plan that was included in Section 3.11.2.3 (page 3.11-5) of the Merced to Fresno Final EIR/EIS. The emergency plan includes the following goals and policies, which are applicable to safety and security: ▪ Facilitates multijurisdictional and interagency coordination. ▪ Serves as a county plan to be used for pre-emergency planning in addition to emergency operations. ▪ Establishes the organizational framework for implementation of the California Standardized Emergency Management System, and the National Incident Management System, within Merced County. ▪ Establishes the operational concepts and procedures associated with Initial Response Operations (field response) to emergencies, the Extended Response Operations (County Emergency Operations Center activities) and the recovery process.
Merced County Municipal Code, Title 2 – Administration and Personnel, Chapter 2.72: Office of Emergency Services and Operational Area Council (Merced County 2013c)	Merced County updated the County Municipal Code, Chapter 2.72 in 2013, updating the previous version of the code that was included in Section 3.11.2.3 (page 3.11-5) of the Merced to Fresno Final EIR/EIS. The emergency plan provides for the preparation and carrying-out of plans for the protection of persons and property within the county in the event of an emergency; the direction of the emergency organization; and the coordination of the emergency functions of the county with all other public agencies, corporations, organizations, and affected private persons.
Madera County	
Madera County Municipal Code, Title 18: Zoning, Chapter 18.88.040: Public Utilities (Madera County 1989)	The Madera County Municipal Code, Chapter 18.88.040 establishes that communications equipment buildings, substations, underground and overhead transmission lines and power lines above 70 KV, trunk and interregional communication lines, and supporting structures shall be permitted in any district, subject to review by the zoning administrator. *Public utility* distribution and transmission lines, both overhead and underground, shall be permitted in all districts without limitation as to height except in Airport Approach Overlay districts, and without the necessity of first obtaining a use permit; provided, however, that the routes of proposed electric transmission lines shall be submitted to the planning commission for recommendation prior to acquisition of rights-of-way therefore.
Operational Area Emergency Operations Plan (2010)	The *Operational Area Emergency Operations Plan* was adopted in 2010 and addresses the planned response to extraordinary emergency situations associated with natural disasters, technological incidents, weapons of mass destruction, and national security emergencies in or affecting Madera County.

Policy Title	Summary
Madera County Municipal Code, Title 2: Administration and Personnel, Chapter 2.78: Emergency Services and Disaster (2013)	Madera County updated the County Municipal Code Title 2 in 2013, updating the previous version of the code that was included in Section 3.11.2.3 (page 3.11-5) of the Merced to Fresno Final EIR/EIS. Chapter 2.78 provides for the preparation and carrying through of plans for the protection of persons and property within the county in the event of an emergency; the direction of the emergency organization; the coordination of the emergency functions of the county with all other governmental agencies, incorporated areas, corporations, organizations, and affected private persons.
City of Chowchilla 2040 General Plan (2011)	The City of Chowchilla adopted the new general plan on May 2, 2011, updating the previous version of the general plan that was included in Section 3.11.2.3 (page 3.11-5) of the Merced to Fresno Final EIR/EIS. The general plan includes the following objectives and policies which are applicable to safety and security: ▪ Policy PS 1.3: Geologic and engineering studies are required for all public and critical facility projects (e.g., school, hospital, utility substation, water storage reservoir, wastewater treatment facility, public safety building, bridges and overpasses). ▪ Policy PS 1.4: Require new and redevelopment projects to comply with adopted seismic and geotechnical requirements of the Uniform Building Code. ▪ Policy PS 4.2: New and redevelopment projects in which the elimination of a wildland fire hazard would require the significant removal of, or damage to, established trees and other riparian vegetation associated with Ash Slough or Berenda Slough shall not be permitted. ▪ Policy PS 5.6: The City of Chowchilla shall require that new development provide adequate access for emergency vehicles, particularly firefighting equipment, as well as provide evacuation routes, where applicable. ▪ Policy PS 6.1: Provide for efficient and cost-effective fire and emergency medical service to minimize potential injury, loss, or destruction to persons or property. ▪ Policy PS 10.2: The City of Chowchilla shall require, as appropriate and as a component of the environmental review process, a hazardous materials inventory for project sites, including an assessment of materials and operations for any development applications. Particular attention shall be paid to land that previously contained agricultural uses. ▪ Policy PS 10.7: The City of Chowchilla shall require that all new habitable structures be setback at least 85 feet from the nearest railroad track. These setback areas shall be measured from the edge of the outermost railroad track. ▪ Policy PS 14.1: Enhance and maintain pedestrian safety through the inclusion of well-designed streets, sidewalks, crosswalks, traffic control devices, and school routes throughout the City.
Chowchilla Municipal Code, Title 2: Administration, Chapter 2.28: Emergency Services Act (2012)	City of Chowchilla Ordinances include titles for disaster and emergency protection. ▪ These ordinances provide for the preparation and carrying through of plans for the protection of persons and property within this city in the event of a disaster, and provide the coordination of civil defense and disaster functions of this city with all other public agencies, private persons, corporations and organizations in compliance with the state of California's Standardized Emergency Management System. Any expenditures made in connection with such civil defense or disaster activities, including mutual aid activities, shall

Policy Title	Summary
	be deemed conclusively to be for the benefit of the inhabitants and the property of the city.
Fresno County	
Fresno County Multi-Hazard Mitigation Plan (2009)	Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies to lessen impacts are determined, prioritized, and implemented. This plan documents Fresno County's hazard mitigation planning process and identifies relevant hazards and vulnerabilities and strategies Fresno County and participating jurisdictions will use to decrease vulnerability and increase resiliency and sustainability in Fresno County. Fresno County and 12 other jurisdictions prepared this local hazard mitigation plan to guide hazard mitigation planning to better protect the people and property of Fresno County from the effects of hazard events.
Stanislaus County	
Stanislaus Airport Land Use Compatibility Plan (2016)	The *Stanislaus Airport Land Use Compatibility Plan* contains the individual compatibility plans for three airports in Stanislaus County: the Modesto City-County Airport, the Oakdale Municipal Airport, and the former Crows Landing Air Facility. As adopted by the Stanislaus County Airport Land Use Commission, the basic function of the plan is to promote compatibility between these airports and the land uses surrounding them to the extent that these areas have not already been devoted to incompatible uses. The plan accomplishes this function through establishment of a set of compatibility criteria applicable to new development around each airport.
Stanislaus County Emergency Operations Plan (2015)	The Emergency Operations Plan addresses the planned response to extraordinary emergency situations associated with natural or human-caused disasters, technological incidents, and national security emergencies in or affecting the county of Stanislaus. The plan serves as the basis for response as well as recovery efforts and activities within the county.
Draft Local Hazard Mitigation Plan (2016)	The Draft *Local Hazard Mitigation Plan* identifies risks posed by disasters and identifies ways to minimize damage from those disasters. The plan is a comprehensive resource document that serves many purposes, including enhancing public awareness and understanding, creating a decision tool for management, promoting compliance with state and federal program requirements, enhancing local policies for hazard mitigation capability, and providing inter-jurisdictional coordination.
Oakdale Municipal Airport Master Plan 1995-2015 (1996)	The *Oakdale Municipal Airport Master Plan* defines primary, approach, transitional, horizontal, and conical surfaces.[1]
City of Merced	
Merced Vision 2030 General Plan (2015)	The *Merced Vision 2030 General Plan* was updated in 2015, updating the previous version of the plan that was included in Section 3.11.2.3 (page 3.11-5) of the Merced to Fresno Final EIR/EIS. The plan was adopted by the City Council on January 3, 2012, with updates following in 2015, and includes the following policy: ▪ Policy S-2.2 Encourage the improvement of all public facilities and infrastructure such as natural gas, fuel, sewer, water, electricity, and railroad lines and equipment with up-to-date seismic safety features.

Policy Title	Summary
City of Merced Draft Local Hazard Mitigation Plan (2015)	On March 16, 2015, the City of Merced City Council adopted the *City of Merced Draft Local Hazard Mitigation Plan*. The plan identifies potential natural hazards that threaten communities, such as flooding, earthquakes, fire, and fog. The intent of the plan is to help save lives and reduce property damage. The public is encouraged to participate and comment on the plan during its drafting stages.
City of Waterford	
Waterford Vision 2025 General Plan (2006)	The Waterford City Council adopted the *Waterford Vision 2025 General Plan* on October 26, 2006, which includes the following policy: ▪ Policy S-2.2 Encourage the improvement of all public facilities and infrastructure such as natural gas, fuel, sewer, water, electricity, and railroad lines and equipment with up-to-date seismic safety features.
Draft Local Hazard Mitigation Plan (2011a)	The *Draft Local Hazard Mitigation Plan* is a preparedness document and is designed to be read, understood, and exercised prior to an emergency. The plan was developed in accordance with the Standardized Emergency Management System and the National Incident Management System.
City of Waterford Emergency Operations Plan (2011b)	The purpose of the *City of Waterford Emergency Operations Plan* is to establish a comprehensive approach to various identified natural, man-made and technological disasters. The plan provides an overview of operational concepts, identifies the components of the City's Emergency Management Organization, and describes overall responsibilities of federal, state and local agencies.

Sources: City of Chowchilla, 2011; City of Merced, 2015a, 2015b; City of Oakdale, 1996; City of Waterford, 2006, 2011a, 2011b; Fresno County, 2009; Madera County, 1989, 2010, 2013; Merced County, 2013a, 2013b, 2013c; Stanislaus County Airport Land Use Commission, 2016; Stanislaus County, 2015, 2016

[1] The Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line is within the horizontal surface that begins at the primary surface (which is a 200-foot buffer around the runway) and extends 10,000 feet at an elevation 150 feet above the airport grade.

3.11.3 Compatibility with Plans and Laws

As indicated in Section 3.1.5.3, Compatibility with Plans and Laws, CEQA and NEPA regulations[2] require a discussion of inconsistencies or conflicts between a proposed undertaking and federal, state, regional, or local plans and laws. As such, this Final Supplemental EIR/EIS describes the inconsistency of the Central Valley Wye alternatives with federal, state, regional, and local plans and laws to provide planning context.

There are a number of federal and state laws and implementing regulations, listed in Section 3.11.2.1, Federal, and Section 3.11.2.2, State, that are relevant to safety and security. These federal and state requirements include:

- Federal and state acts and laws that provide comprehensive directives for safety and security on passenger rail. Applicable acts and laws include the Federal Rail Safety Improvement Act, States Code on Railroad Safety, FRA regulations for railroad transportation safety, Transportation Security Administration Security Directives for Passenger Rail, and the California General Plan Law.
- Federal and state acts and laws that provide comprehensive requirements for safety, security, and emergency response planning include the Federal Emergency Planning and Community Right-to-Know Act, the California Public Utilities Code, General Orders issued by the CPUC, the California Emergency Services Act, the California Public Resources Code, and the California General Plan Law.

[2] NEPA regulations refer to the regulations issued by the Council on Environmental Quality located at 40 CFR Part 1500-1508.

The Authority, as the NEPA and CEQA lead agency proposing to construct and operate the HSR system, is required to comply with all federal and state laws and regulations and to secure all applicable federal and state permits prior to initiating construction on the selected alternative. Therefore, there would be no inconsistencies between the Central Valley Wye alternatives and these federal and state laws and regulations.

The Authority is a state agency and therefore is not required to comply with local land use and zoning regulations; however, it has endeavored to design and construct the HSR project so that it is compatible with land use and zoning regulations. For example, the Central Valley Wye alternatives would include IAMFs that would require construction contractors coordinate with local jurisdictions before and during construction to maintain emergency vehicle access. A total of 20 plans and 46 local and regional policies and ordinances were reviewed. The Central Valley Wye alternatives are consistent with 19 policies and ordinances and inconsistent with 27 policies and ordinances within the following regional and local plans and laws:

- **2030 Merced County General Plan** (Merced County, 2013a)—Policy CIR-4.1, Policy CIR-5.4, Goal HS-3, and Policy PFS-7.6. The Central Valley Wye alternatives would be inconsistent with these policies because their construction could lead to the closure of local roadways, thereby potentially increasing the distance it would take to cross the HSR and increasing emergency response times, and could also potentially interfere with the development of a complete and interconnected bicycle and pedestrian circulation system. However, IAMFs incorporated into the Central Valley Wye alternatives would include effective coordination and emergency vehicle access procedures, which would prevent substantial temporary changes to service ratios, response times, or other performance objectives for emergency services.
- **County of Merced Emergency Operations Plan** (Merced County, 2013b)—This plan features three primary goals: 1) pre-emergency planning; 2) implementation of the California Standardized Emergency Management, and 3) establishment of operational concepts and procedures associated with initial and extended response operations. The Central Valley Wye alternatives would be inconsistent with these policies because their implementation would lead to the closure of local roadways, thereby potentially increasing the distance it would take to cross the HSR and increasing emergency response times. In addition, the Central Valley Wye alternatives may result in inconsistencies with the operational concepts and procedures of the County of Merced Emergency Operations Plan.
- **Madera County Municipal Code** (Madera County 2013)—Title 2 Administration, Chapter 2.78: Emergency Services and Disaster. The Central Valley Wye alternatives would be inconsistent with these policies because reconfiguration of local roadways, including the closure of some local roadways, could increase the potential for traffic conflicts as they relate to bicyclists and pedestrians.
- **Madera County General Plan** (Madera County 1995)—Policy 2.D.13, Policy 2E.1, Policy 2E.8, Policy 2.F.9, Goal 3.G, Policy 3.G.1, Policy 3.G.4, Policy 3.H.2, Policy 3.H.5, and Policy 6.C.5. The Central Valley Wye alternatives would be inconsistent with these policies since their implementation would lead to the closure of local roadways, thereby potentially increasing the distance it would take to cross the HSR and increasing emergency response times.
- **Operational Area Emergency Operations Plan** (Madera County 2010)—Policy to serve as a county plan to be used for pre-emergency planning in addition to emergency operations. The Central Valley Wye alternatives would be inconsistent with this operations plan because their implementation would potentially increase emergency response times through the closure of local roadways, thereby increasing the distance it would take to cross the HSR.
- **City of Chowchilla 2040 General Plan** (City of Chowchilla 2011)—Policy PS 4.2, Policy PS 5.6, Policy PS 6.1, Policy PS 10.2, Policy PS 10.7, Policy PS 14.1. The Central Valley Wye alternatives would be inconsistent with these policies because their implementation would result in local road closures that could increase the distance it would take to cross the HSR

and increase emergency response times, and because the Authority would follow its own safety system program plans designed to protect the safety and security of construction workers and users of the HSR.

- **Chowchilla Municipal Code** (City of Chowchilla 2012)—Title 2 Administration and Personnel, Chapter 2.28: Emergency Services Act. The Central Valley Wye alternatives would be inconsistent with this policy because the Authority would follow its own safety system program plans designed to protect the safety and security of construction workers and users of the HSR.

Further details and reconciliations are discussed in Appendix 3.11-A. The Central Valley Wye alternatives would be in compliance with state and federal safety regulations and would follow system-wide HSR safety programs. HSR compliance with additional local safety regulations for emergency operations, including local regulations for access to firefighting equipment and evacuation routes, would not be required. Therefore, the inconsistency would not be reconciled. Although the Central Valley Wye alternatives would be inconsistent with these specific provisions, they would be consistent with the public and environmental health and safety objectives of these ordinances and plan policies. For example, the Central Valley Wye alternatives would incorporate SS-IAMF#2, Safety and Security Management Plan, which would require the Authority to follow safety system program plans designed to protect the safety and security of construction workers and users of the HSR. Further, SS-IAMF#1, Construction Safety Transportation Management Plan, would incorporate construction safety and health plans to establish minimum safety and health guidelines for contractors of, and visitors to, construction projects, including the incorporation of fire/life safety programs and the creation of evacuation routes.

3.11.4 Methods for Evaluating Impacts

The evaluation of impacts on safety and security is a requirement of NEPA and CEQA. The following sections summarize the RSAs and the methods used to analyze impacts on safety and security. As summarized in Section 3.11.1, Introduction, six other resource sections in this Final Supplemental EIR/EIS also provide additional information related to safety and security.

3.11.4.1 Definition of Resource Study Areas

As defined in Section 3.1, Introduction, RSAs are the geographic boundaries in which the environmental investigations specific to each resource topic were conducted. The RSA for impacts on safety and security includes the project footprint for each of the Central Valley alternatives plus an additional distance from the project footprints, including new or modified electrical infrastructure required to implement the Central Valley Wye alternatives, where impacts from construction and operations could occur on emergency services and community safety and security. Specific RSA boundaries vary for different facilities, as identified in Table 3.11-2.

The safety and security RSA also includes communities, cities, and counties along the Central Valley Wye alternatives that could be indirectly affected by construction. Indirect impacts for construction and operations could influence an area outside of the safety and security RSA for direct impacts because certain service providers (e.g., fire departments, police departments, hospitals) are located outside of, but have service boundaries or provide service within, the safety and security RSA for direct impacts. Locations of these service providers include the cities of Oakdale, Los Banos, Madera Acres, Madera, and Merced.

Table 3.11-2 Definitions of Safety and Security Facility Resource Study Area Boundaries

Facility	Definition of Facility Resource Study Area Boundaries
Construction and Operations – Direct Impacts	
Rights-of-way	Areas within 0.5 mile of the Central Valley Wye alternatives, including electrical infrastructure required to construct and operate the Central Valley Wye alternatives
Schools	Areas within 0.25 mile of the Central Valley Wye alternatives, including electrical infrastructure required to construct and operate the Central Valley Wye alternatives
Landfills	Areas within 0.25 mile of the Central Valley Wye alternatives, including electrical infrastructure required to construct and operate the Central Valley Wye alternatives
Airports and high-risk facilities[1]	Areas within 2 miles of the Central Valley Wye alternatives,[2] including electrical infrastructure required to construct and operate the Central Valley Wye alternatives
Oil and gas wells[3]	Areas within 200 feet of the Central Valley Wye alternatives, including electrical infrastructure required to construct and operate the Central Valley Wye alternatives
Emergency service providers	Emergency service providers service areas
Construction and Operations – Indirect Impacts	
Service providers – e.g., fire departments, police departments, hospitals	Service provider service areas

Sources: Authority and FRA, 2016a, 2016b
[1] California Code of Regulations, title 5, section 14010(d), requires a safety study for new school sites within 1,500 feet (approximately 0.25 mile) of an existing railroad track.
[2] High-risk facilities limited to the Central Valley Wye alternatives.
[3] Oil and gas wells would be identified within 200 feet of the tracks per California Code of Regulations title 14, chapter 4, article 2, section 1720.

3.11.4.2 Impact Avoidance and Minimization Features

As noted in Section 2.2.3.7, Impact Avoidance and Minimization Features, the Central Valley Wye alternatives incorporate standardized IAMFs to avoid and minimize impacts. The Authority would incorporate IAMFs during project design and construction and as such, the analysis of effects of the Central Valley Wye alternatives in this section factors in all applicable IAMFs. Appendix 2-B, California High-Speed Rail: Impact Avoidance and Minimization Features, provides a detailed description of IAMFs that are included as part of the Central Valley Wye alternatives design. IAMFs applicable to safety and security include:

- SS-IAMF#1, Construction Safety Transportation Management Plan
- SS-IAMF#2, Safety and Security Management Plan
- SS-IAMF#3, Hazard Analyses
- SS-IAMF#4, Oil and Gas Wells
- AQ-IAMF#1, Fugitive Dust Emissions
- GEO-IAMF#3, Evaluate and Design for Large Seismic Ground Shaking
- GEO-IAMF#4, Suspension of Operations During an Earthquake
- HMW-IAMF#9, Landfill

3.11.4.3 Methods for NEPA and CEQA Impact Analysis

This section describes the sources and methods the Authority used to analyze potential impacts from implementing the Central Valley Wye alternatives on safety and security. These methods apply to both NEPA and CEQA unless otherwise indicated. Refer to Section 3.1.5.4, Methods for Evaluating Impacts, for a description of the general framework for evaluating impacts under NEPA and CEQA. As described in Section 3.11.1 and in the following discussions, the Authority has applied methods and sources to this Final Supplemental EIR/EIS similar to the Merced to Fresno Final EIR/EIS. Laws, regulations, and orders (see Section 3.11.2) that regulate safety and security were also considered in the evaluation of impacts.

Emergency Services

Analysts reviewed general plans, emergency plans, and other relevant local municipality planning documents and corresponded with local fire protection, police, and other emergency service providers. Analysts reviewed the locations of police departments and law enforcement call response times within the RSA. Crime rates in Merced and Madera Counties were also compared with crime rates throughout the state to evaluate conditions for law enforcement and response times within the RSA in comparison to statewide averages. The analysis of crime on board passenger trains used statistics obtained from the Los Angeles County Metropolitan Transportation Authority and San Francisco Bay Area Rapid Transit. These data represent the best publicly available statistics for the types of crimes that might occur during HSR operations. The locations of fire departments and the types of equipment operated within the RSA were also evaluated and inventoried as part of the analysis. Emergency response times for fire departments within the RSA were then compiled and reviewed to identify potential impacts resulting from implementation of the Central Valley Wye alternatives.

Community Safety and Security

The evaluation of community safety and security impacts was based primarily on (1) existing conditions compared to the design and operational features of the Central Valley Wye alternatives, and (2) international rail operating experience. The analysis addresses safety issues related to traffic hazards, exposure to landfills and high-risk facilities, Valley Fever, wildfire risks, and interference with airports and community facilities. Additionally, this analysis evaluates HSR passenger and employee safety risks from onboard fire, tunnel fire and the potential for security concerns, such as criminal acts or acts of terrorism that would result in automated train shutdowns or emergency evacuations.

Analysts reviewed the potential for roadway improvements or closures and HSR operations to affect motor vehicle drivers, pedestrians, and bicyclists. Analysts gathered data from sources, including the California Highway Patrol (California Highway Patrol 2013, 2017) and FRA (FRA 2016a, 2016b, 2016c, 2016d, and 2016e) to evaluate automobile, pedestrian, and bicycle safety, including incidents occurring at highway-rail grade crossings and to characterize accidents within the RSAs. In addition, analysts developed a geographic information system database with electronic information from local and regional government sources related to local land uses and potential hazards associated with wildfire, landfills, and high-risk facilities, such as nearby oil and gas wells, to evaluate how construction and operations of the Central Valley Wye alternatives may contribute to community safety and security hazards.

Security impacts were assessed by reviewing police department and law enforcement call response times within the RSA. Onboard crime statistics from the Los Angeles County Metropolitan Transportation Authority and San Francisco Bay Area Rapid Transit were used to identify the types of potential operational security impacts resulting from implementation of the Central Valley Wye alternatives. These data represent the best publicly available statistics for the types of crimes that might occur during HSR operations.

3.11.4.4 Determining Significance under CEQA

CEQA requires that an EIR identify the significant environmental impacts of a project (CEQA Guidelines § 15126). One of the primary differences between NEPA and CEQA is that CEQA requires a significance determination for each impact using a threshold-based analysis (see Section 3.1.5.4 for further information). By contrast, under NEPA, significance is used to determine whether an EIS will be required; NEPA requires that an EIS is prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment. Accordingly, Section 3.11.9, CEQA Significance Conclusions, summarizes the significance of the environmental impacts on safety and security for each Central Valley Wye alternative. The Authority is using the following thresholds to determine if a significant impact on safety and security would occur as a result of the Central Valley Wye alternatives. A significant impact is one that would:

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the safety or security of such facilities.
- Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses.
- Result in a safety hazard for people residing or working in the project vicinity (for a project located within an area where there is an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport or within the vicinity of a private airstrip).
- Result in a safety hazard for people in the study area as a result of construction or operations activities.
- Result in substantial adverse physical impacts associated with the provision of and the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services, including fire protection, police protection, and emergency services.
- Result in inadequate emergency access.[3]
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.11.5 Affected Environment

This section describes the affected environment for emergency services and community safety and security in the RSAs of the Central Valley Wye alternatives. It also discusses changes to safety and security in the San Joaquin Valley since publication of the Merced to Fresno Final EIR/EIS. This information provides the context for the environmental analysis and evaluation of impacts.

[3] For the purposes of this analysis, inadequate emergency access is defined as a substantial increase in emergency response times.

3.11.5.1 Emergency Services

Emergency Response Plans

All applicable emergency response plans for the affected communities are included in emergency operations requirements summarized and discussed in Table 3.11-1. In addition to emergency operations requirements set forth in the county and city general plans, all counties and cities operate under the guidance of emergency operations plans. These plans outline procedures for fire, law enforcement, and emergency medical service operations during emergencies such as earthquakes, floods, fires, and other natural disasters; hazardous materials spills; transportation emergencies; civil disturbance; and terrorism. The plans also identify the location of emergency response facilities, such as emergency dispatch and operations centers, government structures, and hospitals or other medical facilities. Figure 3.11-1 and Appendix 3.11-B identify these facilities.

Regionally significant roads, illustrated in Section 3.2, are typically identified as emergency evacuation routes in county and city general plans and emergency response plans. Several regionally significant roads (such as Sandy Mush Road, Robertson Boulevard/State Route [SR] 233/Avenue 26, Avenue 24, and Avenue 20) cross the Union Pacific Railroad (UPRR) and BNSF Railway (BNSF) tracks at grade within the safety and security RSA, and would result in potential delays to emergency response and evacuation if trains block these roads. No federal or state buildings or centers are within the safety and security RSA for the Central Valley Wye alternatives.

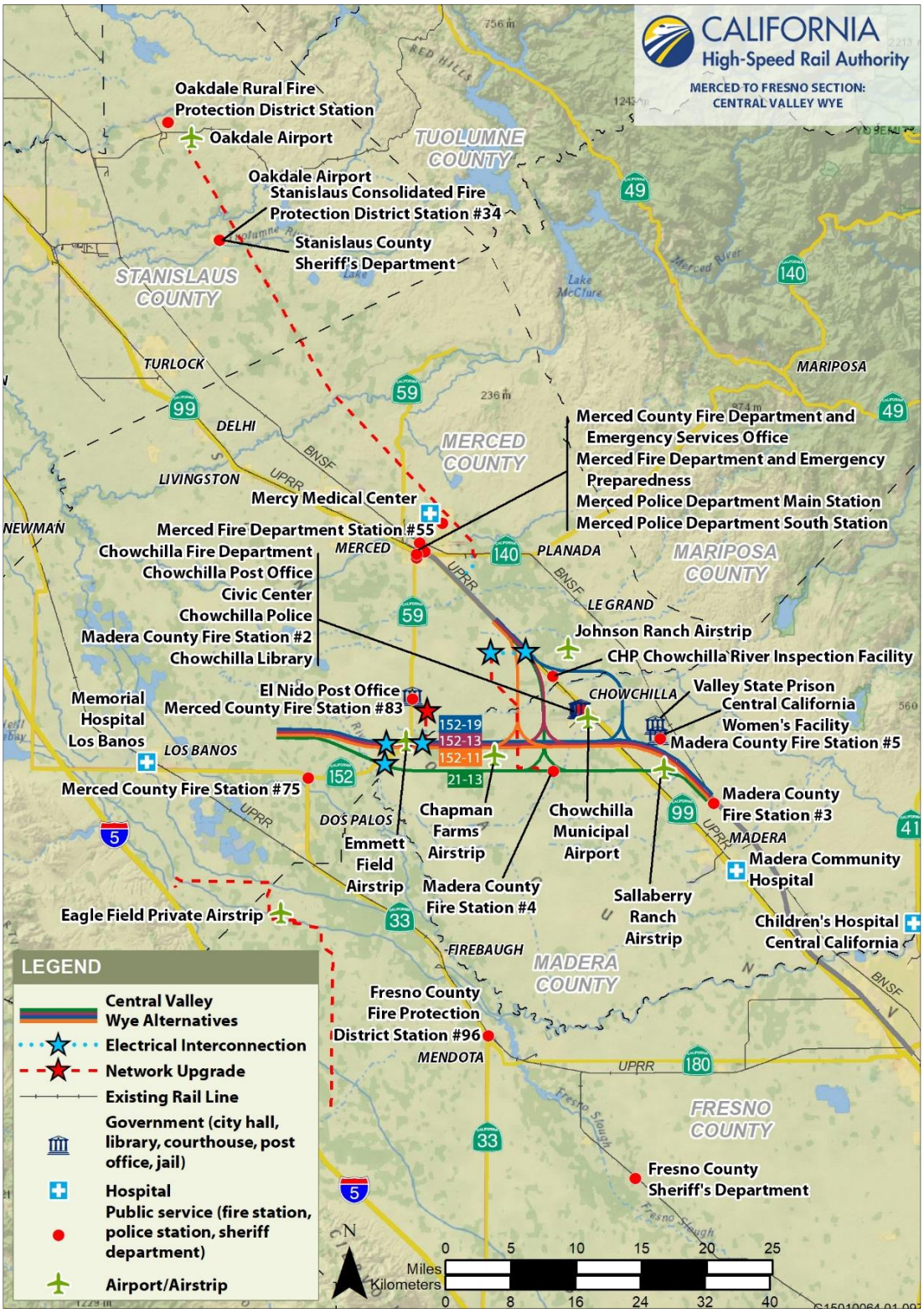
Law Enforcement and Crime Rates

There are six police departments within the safety and security RSA. Response times[4] to high-priority calls for law enforcement vary in the safety and security RSA. As of 2016, the Madera County Sheriff's Department reports average response to high-priority calls in the community of Madera Acres as 4 to 5 minutes, which is representative of other portions of the RSA serviced by the Madera County Sheriff's Department (Pogue 2016). As of July 2016, City of Chowchilla police officers responded to high-priority calls in an average of 1–3 minutes (Galpini 2016), and Merced County responds to high-priority calls in approximately 6 minutes and 23 seconds (St. Marie 2016). In 2015, Stanislaus County Sheriff's Department responded to all high-priority calls in Waterford in less than 4 minutes (Doering 2016), police officers in the city of Merced responded to all high-priority calls in less than 5 minutes 45 percent of the time (Eber 2016), and Fresno County Sheriff's Department responded to all high-priority calls in approximately 18.9 minutes (Botti 2016).

Crime rates in Merced and Madera Counties were compared with crime rates throughout the state.[5] Violent crime rates in both counties are higher than the state average: approximately 5.5 crimes in Merced County and 5.7 crimes in Madera County occur per 1,000 adults (age 18–69) in each county, versus 3.9 crimes per 1,000 adults (age 18–69) in California as a whole. Violent crime has decreased in Merced County and California since 2010, during which time the rates were 5.6 and 4.3 crimes per 1,000 adults, respectively. Violent crime rates have increased in Madera County since 2010, during which time there were 4.3 crimes per 1,000 adults. Property crime in Merced County is higher than the state average: 26.6 crimes per 1,000 adults versus 24.4 crimes per 1,000 adults, respectively, while property crime in the Madera County is lower than the state average: 21.9 per 1,000 adults. Property crime rates have increased in Merced and Madera Counties as well as in the overall state of California since 2010, during which time the rates were 17.6, 15.2, and 15.6 crimes per 1,000 adults, respectively (Center on Juvenile and Criminal Justice 2016).

[4] All law enforcement response times reported are for the highest priority calls as defined be each law enforcement agency.

[5] There would be no impact on crime rates or law enforcement in Fresno and Stanislaus Counties because only network upgrades to existing electrical lines are proposed, which would not result in the congregations of people or new high-value items attractive to thieves. Although temporary lane closures may occur during reconductoring activities, emergency vehicles would be accommodated per the Work Area Protection and Traffic Control Manual (Caltrans 2014). Therefore, crime rates and law enforcement are discussed only for Merced and Madera Counties (where the HSR would operate).



Sources: Brown, 2016; City of Waterford, 2006; FireDepartment.net, n.d.; Fresno County, 2003; 2009 Higginbotham, 2016; Federal Aviation Administration, 2013; Moore, 2009; Madera County Fire Department, n.d.; City of Chowchilla Volunteer Fire Department, n.d.

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Figure 3.11-1 Safety and Security Existing Conditions

Analysis of onboard crime for passenger trains used statistics gathered from the Los Angeles County Metropolitan Transportation Authority and San Francisco Bay Area Rapid Transit. The reported crimes include crimes committed on board trains and at transit facilities such as stations and parking lots. Compared to statewide crime totals for Part 1 Offenses (i.e., violent or property crimes) crime rates on heavy rail systems (Los Angeles County Metropolitan Transportation Authority and the San Francisco Bay Area Rapid Transit) in California are lower. In 2014, 20,546 Part 1 Offenses occurred statewide in California, excluding heavy rail system agencies. In 2014, 3,514 Part 1 Offenses occurred on the Metropolitan Transportation Authority and San Francisco Bay Area Rapid Transit lines, combined (FBI 2015).

Fire Response

The fire departments and types of equipment operated within the safety and security RSA are summarized in Table 3.11-3, and the locations of the fire stations are illustrated on Figure 3.11-1. The fire departments serving the safety and security RSA consist of paid employees, except for the City of Chowchilla, which operates a volunteer fire department. The city fire departments have mutual aid agreements with county fire protection services (and in some cases with other fire departments) to provide concurrent, cooperative response and assistance during emergencies.

Table 3.11-3 Fire Departments and Equipment

Fire Department	Service Area	Equipment
Merced County (contracted through CAL FIRE)	Unincorporated areas of Merced County	▪ 80 vehicles ▪ Hazardous materials rig
City of Los Banos	City of Los Banos and within 5 miles of city limits. Also responds to rail incidents in the vicinity of the Central Valley Wye alternatives.	▪ 5 type-one fire engines ▪ 75-foot ladder truck ▪ Medium-size rescue unit ▪ Water tender truck ▪ 3 Command vehicles ▪ Air unit ▪ 1 Rescue trailer ▪ 1 Decontamination unit
City of Merced	City of Merced	▪ 5 type-one fire engines ▪ 1 type-two fire engine ▪ 85-foot ladder truck ▪ 105-foot ladder truck (soon to be replaced) ▪ Hazardous materials decontamination trailer ▪ Rescue boat ▪ Rescue trailer ▪ Aircraft crash fire rescue engine ▪ 6 vehicles (a mix of trucks, SUVs, sedans); 2 additional vehicles soon to be replaced ▪ Prevention trailer (for purposes of public education)
Madera County (contracted through CAL FIRE)	Unincorporated areas of Madera County	▪ 56 vehicles (including fire engines of various capacities, water tenders, squads, 1 fire truck, and support vehicles)

Fire Department	Service Area	Equipment
City of Chowchilla Volunteer Fire Department	City of Chowchilla and surrounding unincorporated areas	▪ 3 fire engines ▪ 1 squad engine ▪ 1 command truck ▪ Fire prevention trailer
City of Madera (contracted through CAL FIRE)	City of Madera	▪ 2 fire engines ▪ Reserve fire engine ▪ Mini pumper
Stanislaus County Fire Protection District	Unincorporated sections of East Modesto, the cities of Riverbank and Waterford, and the communities of Empire, La Grange and Hickman	▪ 1 Type-one Fire Engine ▪ 1 Type-three Fire Engine ▪ 1 Type-one Water Tender ▪ 1 Rescue Boat and Tow Vehicle
Oakdale Rural Fire Protection District	Unincorporated communities of Valley Home, Knights Ferry, and the East Oakdale area	▪ 1 Light Rescue ▪ 2 Type-one Engines ▪ 1 Type-three Engine ▪ 1 Type-one Water Tender ▪ 1 Rescue Boat and Tow Vehicle
Fresno County Fire Protection District	Approximately 3,800 square miles of Fresno County	▪ 1 Fire Engine ▪ 1 Water Tender

Sources: Koerperich, 2016; Marrison, 2016; Henry, 2016; Madera County Fire Department, n.d.; City of Chowchilla Volunteer Fire Department, n.d.; Giardini, 2016; Brown, 2016; City of Waterford, 2006; FireDepartment.net, n.d.; Fresno County, 2003; Higginbotham, 2016; ORFPD, 2009
CAL FIRE = California Department of Forestry and Fire Protection
SUV = sport utility vehicle

Response times vary for fire departments within the safety and security RSA. The City of Merced has established a geographic response area with an average response time of 6 minutes (Henry 2016). The City of Madera's response times are, on average, 6 minutes (Giardini 2016).[6] Regional and local plans demonstrate, based on policy goals and objectives, that in rural areas, such as unincorporated areas of Merced and Madera Counties, response times can be more than 20 minutes, depending on how close the nearest stations are and whether firefighters are responding to other emergencies at the time (Madera County 1995). Along the western portion of the safety and security RSA, the Los Banos Fire Department, in addition to the Merced County Fire Department, would respond to incidents upon request and the Los Banos Fire Department's average response time is 5 minutes within the city of Los Banos (Marrison 2016).

In the City of Chowchilla, most of the present development lies within a 5-minute emergency response time service area from the City of Chowchilla Volunteer Fire Department's Station 1. A second station is planned for the east side of SR 99, north of Greenhills Estates. This station would aid in reducing response times to development areas east of the SR 99/UPRR corridor (City of Chowchilla 2011).[7] The community of Fairmead is served by the Madera County Fire Department, which operates and equips 17 fire stations and has an estimated response time of 10 to 14 minutes to calls within Fairmead. The closest fire station to Fairmead is Station 2, located at the state prison facility in Chowchilla, approximately 3 miles north of Fairmead. However, this facility does not have guaranteed service, as its main obligation is to the prison (Madera County Planning Department 2012).[8] Madera Acres is served by the Madera County Fire Department Station 3, located in Madera Acres south of the project footprints for the Central

[6] Most recent study available
[7] Most recent information available
[8] Information unchanged

Valley Wye alternatives but within the safety and security RSA for emergency response times. Response time within Madera Acres are between 5 and 7 minutes (Biesenthal 2016).

The Fresno County Fire Protection District's (FCFPD) response standard is 5 minutes in commercial and residential areas near Fresno and Clovis, and 20 minutes in rural areas. The FCFPD normally meets these standards unless multiple incidents are occurring or the incidents are located in a few areas that cannot be reached within the referenced time standard (Fresno County 2003). FCFPD serves approximately 3,800 square miles of Fresno County from 24 fire stations. The closest fire station to the Site 6—El Nido, Oro Loma–Panoche Junction 115 kV Power Line in Fresno County is Fire Station # 96 located at 100 McCabe Avenue, Mendota. It is staffed by two full-time paid firefighters by contract with CAL FIRE and provides fire protection services to the City of Mendota and to the rural areas around Mendota and Firebaugh. The average response time from Station #96 is 13.9 minutes (Brown 2016).

The Oakdale Rural Fire Protection District (ORFPD) does not have adopted performance measures. The NFPA recommends a response time of 14 minutes or less in rural areas 80 percent of the time. With a district-wide first unit incident response time of 14 minutes achieved 90 percent of the time, ORFPD is delivering service at NFPA recommendations (ORFPD 2009). The ORFPD is located in northern Stanislaus County and serves the unincorporated communities of Valley Home, Knights Ferry, and the East Oakdale. The ORFPD is part of the Stanislaus Consolidated Fire Protection District (discussed in the paragraph below) and covers the northern part of Stanislaus County, including Oakdale and the northern terminus of the Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line. The closest fire station to the Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line is Station # 28 located at 325 East G Street in Oakdale. The average response time from this station is 5 minutes 45 seconds (Higginbotham 2016)

The Stanislaus Consolidated Fire Protection District (SCFPD) staffs nine fire stations and provides fire suppression, emergency first responder, and rescue services. Fire Station #34 located at 321 E Street in Waterford is the closest fire station to the Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line within Stanislaus County. The SCFPD works with the City of Waterford to adopt and enforce codes and ordinances relative to fire and life safety, and reviews development projects within the city for potential impacts on fire protection services (City of Waterford 2006). The average response time from Station #34 is 5 minutes 48 seconds (Higginbotham 2016).

CAL FIRE prepared the *Strategic Fire Plan for California*. The plan provides the state's road map for reducing the risk of wildfire (CAL FIRE 2010).[9] Part of this plan identifies and assesses community assets at risk of wildfire damage. CAL FIRE generated a list of California communities at risk for wildfire and created fire hazard severity zones (CAL FIRE 2007a, 2007b).[10] The safety and security RSA is within a Local Responsibility Zone, meaning that CAL FIRE is not responsible for primary fire response. Nearly all of the area surrounding the Central Valley Wye alternatives is identified as "unzoned" because of its low wildfire hazard potential (CAL FIRE 2007a, 2007b).[11] Isolated areas along the alternative alignments along an approximately 3-mile section of the existing Site 7 – Le Grand Junction/Sandy Mush Road, Warnerville – Wilson 230 kV Transmission Line are identified as having "moderate" wildfire hazard.

Fire protection services and response times within the safety and security RSA are the same for all of the alternatives.

Fire Hazards

Fire hazards models provide a measure of the likelihood of an area burning and how it burns (e.g., intensity, speed, embers produced), so people are able to predict the likely damage by a fire. Fire hazard measurement includes the speed at which wildfire moves, the amount of heat the

[9] Most recent plan available

[10] Most recent maps available

[11] Most recent maps available

fire produces, and the burning fire brands that the fire sends ahead of the flaming front (CAL FIRE 2012. This information is identified as part of the fire hazard zoning performed by CAL FIRE (2007a, 2007b). All of the Central Valley Wye alternatives avoid fire hazard severity zones classified as high or very high, but do extend through several small areas classified as moderate fire-hazard severity zones. These areas of moderate fire-hazard severity generally occur in isolated areas of Stanislaus County, southeast of Chowchilla, and in the community of Fairmead.

3.11.5.2 Community Safety and Security

Automobiles and Highways

In the 2015 federal fiscal year, the California Highway Patrol reported 3,363 fatalities and 247,523 nonfatal injuries on California's highways (California Highway Patrol 2017). The following factors may influence automobile and highway safety:

- Operator age, experience, and ability
- Vehicle reliability, maintenance, and crashworthiness
- Environmental considerations, including roadway conditions, weather and lighting conditions (e.g., wind, rain, fog, darkness, and sun glare), and driver distractions, interferences, and impairment

SR 152 is a four-lane divided highway under jurisdiction of the California Department of Transportation (Caltrans) and serves local traffic and regional and super-regional travelers between Interstate 5 and SR 99, as well as travelers from the Bay Area, the Central Valley and destinations beyond, such as the Sierra Nevada and Yosemite National Park. By contrast, Avenue 21 is a rural two-lane road situated approximately 2 miles south of SR 152, which primarily serves local and agricultural traffic. In the winter months, the Central Valley is subject to dense fog that reduces visibility and increases the accident risk.

In 2015, California ranked second for most highway-rail grade crossing collisions in the nation and first for highway-rail grade crossing fatalities (FRA 2016d). There were 31 highway-rail grade crossing collisions in Merced and Madera Counties from January 2011 to December 2015. Additional information on train accidents is presented in Appendix 3.11-B, and information on existing railroad crossings is presented in Appendix 3.11-C. Further discussion of existing vehicular traffic conditions is included in Section 3.2 and in the *Merced to Fresno Section: Central Valley Wye Transportation Technical Report* (Authority and FRA 2016a). The conditions within the safety and security RSA for vehicular safety associated with operations are the same for the Central Valley Wye alternatives.

Pedestrians and Bicycles

According to FRA, California ranked first in the nation in pedestrian rail-trespass casualties (deaths and injuries) in 2015 (FRA 2016c). These fatalities occurred primarily from suicidal pedestrian rail trespass, followed by accidental pedestrian trespass. Between 2011 and 2015, a total of 31 at-grade highway-rail crossing accidents (motor vehicles and pedestrians) occurred in Merced and Madera Counties; 3 of these accidents involved pedestrians. None of these accidents occurred within the safety and security RSA for Central Valley Wye alternatives (FRA 2016e). Appendix 3.11-B provides information on the at-grade crossing accidents and Appendix 3.11-C provides information on existing railroad crossings.

Concerning cyclist safety, few bicycle facilities are located in the safety and security RSA. Cyclist safety issues associated with the BNSF and UPRR tracks in the safety and security RSA primarily result from the conflict between bicyclists and trains on at-grade crossings. No Class I bike paths (paved bikeways physically separated from the roadway) exist near the at-grade crossings of the BNSF and UPRR tracks. Class II bike lanes (lanes for cyclists adjacent to the outside travel lane of the roadway, with special lane markings, pavement legends, and signs) and Class III bike routes (signed for bike use but with no separate or exclusive right-of-way or lane striping on the roadway) are on or are proposed for several streets with at-grade crossings of the UPRR tracks in the city of Chowchilla (MCTC 2004; MCAG 2008).

At-grade (pedestrian and bicycle) crossing conditions are the same within the safety and security RSAs of the Central Valley Wye alternatives. A total of eight at-grade (pedestrian and bicycle) crossings occur in the safety and security RSA under the SR 152 (North) to Road 13 Wye Alternative and the SR 152 (North) to Road 19 Wye Alternative. A total of six and a total of five at-grade crossings occur in the safety and security RSA under the Avenue 21 to Road 13 Wye Alternative and the SR 152 (North) to Road 11 Wye Alternative, respectively. Intersections near the at-grade crossings are generally signalized or stop-controlled. However, because of the rural nature of the safety and security RSA, the majority of these intersections do not have marked crosswalks for safe pedestrian movement or sidewalks that meet the standards for the Americans with Disabilities Act. No at-grade crossing accidents occurred between January 2008 and April 2016 within the safety and security RSA for any of the Central Valley Wye alternatives (FRA 2016e).

Railroad Operations

The safety and security RSA includes freight train operations along the UPRR and BNSF tracks. Also within the safety and security RSA, Amtrak provides passenger service on its *San Joaquin* trains, which operate on the BNSF tracks, with direct service to Merced and Madera. Road crossings of the UPRR are either grade-separated or at-grade. Road crossings of the BNSF are all at-grade. SR 99 is the major north-south roadway within the safety and security RSA and runs adjacent to the UPRR south and north of Chowchilla, where fencing or stormwater drainage ditches separate SR 99 from the railroad right-of-way. Through Chowchilla, SR 99 travels parallel to the UPRR at a distance of approximately 0.25 mile. For the BNSF, stormwater drainage ditches provide a topographic separation between rail operations and oncoming traffic.

The FRA defines a train accident as a safety-related event involving on-track equipment, whether standing or moving (FRA 2014). Accidents[12] are categorized as derailments, collisions with other trains or vehicles, and other types of accidents that involve pedestrians on the railway. According to FRA accident reports (FRA 2016a, 2016b, 2016e), 92 railroad-related accidents, including Amtrak accidents, occurred in Merced and Madera Counties during the 5-year period between January 2011 and December 2015. Of these 92 accidents, 33 accidents resulted in fatalities, and 59 were nonfatal accidents (injuries or property damage only). These accidents comprise all train accidents in the two counties, including accidents outside of the safety and security RSA.

Between 2011 and 2015, 31 of the 92 railroad-related accidents in Merced and Madera Counties occurred at highway-railroad crossings.[13] These 31 accidents (approximately 24 percent of all accidents for Merced and Madera Counties between 2011 and 2015) were attributed to human error, such as going around gates, stopping on tracks/crossings, or driving through gates (FRA 2016a, 2016b). One accident involved a trail derailment. The remaining 60 accidents (approximately 76 percent of all accidents for Merced and Madera Counties between 2011 and 2015) were classified as “other” and were attributed to trespassing incidents and activities such as getting on or off equipment, performing maintenance work, throwing switches, setting handbrakes, or stumbling and tripping (FRA 2016a, 2016b, 2016e). None of the accidents involved train-to-train collisions (FRA 2016a, 2016b). Appendix 3.11-B provides detailed information on the railroad-related accidents, and Appendix 3.11-C provides information on existing railroad crossings.

SR 152 (North) to Road 13 Wye Alternative

The SR 152 (North) to Road 13 Wye Alternative safety and security RSA includes freight train operations along the UPRR and BNSF tracks and Amtrak passenger service on its *San Joaquin*

[12] This document uses the term *accident* to refer to all safety-related events. The FRA uses two terms, *accident* and *incident*, to describe safety-related events involving railroads (C.F.R. 49 Part 225). These include collisions, derailments, and other events involving the operation of on-track equipment and causing reportable damage above an established threshold; impacts between railroad on-track equipment and highway users at crossings; and all other incidents or exposures that cause a fatality or injury to any person, or an occupational illness to a railroad employee (FRA 2014).

[13] FRA defines a highway-rail grade crossing accident or incident as any impact between railroad on-track equipment and a highway user (including motorists, bicycles, pedestrians, or any other mode of surface transportation), regardless of whether the impact results in a certain amount of property damage or a reportable injury.

trains, which operate on the BNSF tracks, with direct service to Merced and Madera. There are three at-grade crossings of the BNSF tracks and five at-grade crossings of the UPRR tracks in the safety and security RSA under the SR 152 (North) to Road 13 Wye Alternative.

SR 152 (North) to Road 19 Wye Alternative

Rail freight and passenger service in the SR 152 (North) to Road 19 Wye Alternative safety and security RSA are the same as described for SR 152 (North) to Road 13 Wye Alternative. There are four at-grade crossings of the BNSF tracks and five at-grade crossings of the UPRR tracks in the safety and security RSA under the SR 152 (North) to Road 19 Wye Alternative.

Avenue 21 to Road 13 Wye Alternative

Rail freight and passenger service in the Avenue 21 to Road 13 Wye Alternative safety and security RSA are the same as described for SR 152 (North) to Road 13 Wye Alternative. There are two at-grade crossings of the BNSF tracks and four at-grade crossings of the UPRR tracks in the safety and security RSA under the Avenue 21 to Road 13 Wye Alternative.

SR 152 (North) to Road 11 Wye Alternative

Rail freight and passenger service in the SR 152 (North) to Road 11 Wye Alternative safety and security RSA are the same as described for SR 152 (North) to Road 13 Wye Alternative. There are three at-grade crossings of the BNSF tracks and three at-grade crossings of the UPRR tracks in the safety and security RSA under the SR 152 (North) to Road 11 Wye Alternative.

Airports and Airstrips

Table 3.11-4 presents the airports and airstrips within 2 miles of the Central Valley Wye alternatives (Figure 3.11-1). Within Madera County, two private airstrips—Chapman Farms Airstrip and Sallaberry Airstrip—are in unincorporated, agricultural areas, and the Chowchilla Municipal Airport is in the southern portion of Chowchilla. Emmett Field Airstrip and Johnson Ranch Airstrip are in unincorporated, agricultural areas of Merced County. Within Fresno County, one private airstrip, Eagle Field Airport, is located in an unincorporated, agricultural area approximately 5.5 miles southwest of the central business district of Dos Palos. The Oakdale Municipal Airport is located in unincorporated Stanislaus County.

One public-service airport and four private airports/airstrips are within 2 miles of the SR 152 (North) to Road 13 Wye Alternative safety and security RSA. Two public-service airports and five private airports/airstrips are within the SR 152 (North) to Road 19 Wye Alternative safety and security RSA. Four private airports/airstrips are within the Avenue 21 to Road 13 Wye Alternative safety and security RSA. One public-service airport and four private airports/airstrips are within the SR 152 (North) to Road 11 Wye Alternative safety and security RSA.

As public-service airports, the Chowchilla and Oakdale Municipal Airports are subject to the *Madera Countywide Airport Land Use Compatibility Plan* prepared by the Madera County Airport Land Use Commission (2015) and the *Stanislaus County Airport Land Use Compatibility Plan* prepared by the Stanislaus County Airport Land Use Commission (2016), respectively, for the purpose of regulating land use within airport influence areas to minimize airport hazards and risks of accidents. Airport influence areas are often delineated and incorporated into local comprehensive planning documents to depict areas around an airport that are subject to periodic overflights and aircraft noise. With the exception of the Site 7–Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line associated with the SR 152 (North) to Road 19 Wye Alternative, which is located within the influence area of the *Stanislaus County Airport Land Use Compatibility Plan,* no other Central Valley Wye alternatives are located within the airport influence area of any public-service airport. Regarding reconductoring of the Site 7–Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line, the final height of the self-supporting lattice steel towers within the influence area would be, at most, 111 feet, which is below the 200-foot height threshold for construction or alternation of facilities within the influence area (Stanislaus County Airport Land Use Commission 2016). As such, this document does not include a detailed analysis of potential airport obstructions presented by the Central Valley Wye alternatives.

Table 3.11-4 Airports and Airstrips within 2 Miles of the Central Valley Wye Alternatives

Facility	County	Distance from Central Valley Wye Alternatives Project Footprints (miles)	Alternatives
Emmett Field Airstrip (private)	Merced	0.3	SR 152 (North) to Road 13 Wye
		0.3	SR 152 (North) to Road 19 Wye
		1.5	Avenue 21 to Road 13 Wye
		0.3	SR 152 (North) to Road 11 Wye
Johnson Ranch Airstrip (private)	Merced	0.3	SR 152 (North) to Road 19 Wye
Chapman Farms Airstrip (private)	Madera	0.4	SR 152 (North) to Road 13 Wye
		0.4	SR 152 (North) to Road 19 Wye
		0.8	Avenue 21 to Road 13 Wye
		0.4	SR 152 (North) to Road 11 Wye
Chowchilla Municipal Airport	Madera	1.4	SR 152 (North) to Road 13 Wye
		1.5	SR 152 (North) to Road 19 Wye
		1.4	SR 152 (North) to Road 11 Wye
Sallaberry Ranch Airstrip (private)	Madera	0.7	SR 152 (North) to Road 13 Wye
		0.6	SR 152 (North) to Road 19 Wye
		0.1	Avenue 21 to Road 13 Wye
		0.6	SR 152 (North) to Road 11 Wye
Eagle Field Airport (private)[1]	Fresno	0.25	SR 152 (North) to Road 13 Wye
		0.25	SR 152 (North) to Road 19 Wye
		0.25	Avenue 21 to Road 13 Wye
		0.25	SR 152 (North) to Road 11 Wye
Oakdale Municipal Airport[2]	Stanislaus	1.0	SR 152 (North) to Road 19 Wye

Sources: Federal Aviation Administration, 2013; Airport-Data.com, 2013
[1] Associated with the Site 6—EL Nido, Los Banos–Oro Loma–Canal 70 kV Power Line.
[2] Associated with the Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line.
SR = State Route

SR 152 (North) to Road 13 Wye Alternative

One public-service airport and four private airports/airstrips are within 2 miles of the SR 152 (North) to Road 13 Wye Alternative project footprint (Table 3.11-4). As a public-service airport, the Chowchilla Municipal Airport is subject to the land use regulations and airport influence areas outlined in the *Madera Countywide Airport Land Use Compatibility Plan* (Madera County Airport Land Use Commission 2015). The SR 152 (North) to Road 13 Wye Alternative does not encroach on areas covered by the *Madera Countywide Airport Land Use Compatibility Plan* (Madera County Airport Land Use Commission 2015).

SR 152 (North) to Road 19 Wye Alternative

As listed in Table 3.11-4, the Chowchilla Municipal Airport, Oakdale Municipal Airport, and five private airports/airstrips—Chapman Farms Airstrip, Sallaberry Ranch Airstrip, Emmet Field

Airstrip, Johnson Ranch, and Eagle Field Airport—are within 2 miles of the SR 152 (North) to Road 19 Wye Alternative project footprint. The SR 152 (North) to Road 19 Wye Alternative does not encroach on areas covered by the *Madera Countywide Airport Land Use Compatibility Plan* (Madera County Airport Land Use Commission 2015). The northern terminus of the Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line associated with the SR 152 (North) to Road 19 Wye Alternative is located within the Referral Area 2 of the Influence Area Policy Map of the *Stanislaus County Airport Land Use Compatibility Plan* (Stanislaus County Airport Land Use Commission 2016).

Avenue 21 to Road 13 Wye Alternative

As listed in Table 3.11-4, there are four known private airports/airstrips—Chapman Farms Airstrip, Sallaberry Ranch Airstrip, Emmet Field Airstrip, and Eagle Field Airport—within 2 miles of the Avenue 21 to Road 13 Wye Alternative project footprint. The Avenue 21 to Road 13 Wye Alternative does not encroach on any areas covered by the *Madera Countywide Airport Land Use Compatibility Plan* (Madera County Airport Land Use Commission 2015).

SR 152 (North) to Road 11 Wye Alternative

As listed in Table 3.11-4, there is one public-service airport and four known private airports/airstrips—Chapman Farms Airstrip, Sallaberry Ranch Airstrip, Emmet Field Airstrip, and Eagle Field Airport—within 2 miles of the SR 152 (North) to Road 11 Wye Alternative project footprint. The SR 152 (North) to Road 11 Wye Alternative does not encroach on any areas covered by the *Madera Countywide Airport Land Use Compatibility Plan* (Madera County Airport Land Use Commission 2015).

Schools

Table 3.11-5 lists public and private schools within 0.25 mile of the Central Valley Wye alternatives. There are six schools located within the RSA for the Central Valley Wye alternatives.

SR 152 (North) to Road 13 Wye Alternative

Two schools are within 0.25 mile of the SR 152 (North) to Road 13 Wye Alternative in Madera County. The SR 152 (North) to Road 13 Wye Alternative is approximately 0.2 mile north of Fairmead Elementary School and 0.1 mile north of the Fairmead Head Start Childcare Center (Fairmead Head Start) (Table 3.11-5).

SR 152 (North) to Road 19 Wye Alternative

As shown in Table 3.11-5, four schools are within 0.25 mile of SR 152 (North) to Road 19 Wye Alternative, two are located in Merced County and two in Madera County. The SR 152 (North) to Road 19 Wye Alternative is approximately 0.2 mile north of Fairmead Elementary School and 0.1 mile north of Fairmead Head Start. The Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line is less than 0.1 mile east and west of Washington Elementary School and El Capitan High School, respectively.

Avenue 21 to Road 13 Wye Alternative

Two schools—Alview Elementary School and Chowchilla Seventh-day Adventist School—are within 0.25 mile of the Avenue 21 to Road 13 Wye Alternative in Madera County (Table 3.11-5). Alview Elementary School is located 0.4 mile from the Avenue 21 to Road 13 Wye Alternative centerline but is within the alternative's temporary construction easement and utility easement. Chowchilla Seventh-day Adventist School is less than 0.1 mile east of the San Jose to Merced leg of the Avenue 21 to Road 13 Wye Alternative, placing the school within the project footprint of this alternative.

Table 3.11-5 Educational Facilities within 0.25 Mile of the Central Valley Wye Alternatives

Facility	Approximate Distance from Project Centerline to Edge of Property (miles)	Direction from Alternative	County	Status
Fairmead Elementary School	0.2	South of SR 152 (North) to Road 13 Wye Alternative	Madera	Active
	0.2	South of SR 152 (North) to Road 19 Wye Alternative		
	0.2	South of SR 152 (North) to Road 11 Wye Alternative		
Fairmead Head Start Childcare Center	0.1	South of SR 152 (North) to Road 13 Wye Alternative	Madera	Active
	0.1	South of SR 152 (North) to Road 19 Wye Alternative		
	0.1	South of SR 152 (North) to Road 11 Wye Alternative		
Alview Elementary School	0.4	Avenue 21 to Road 13 Wye Alternative project footprint intersects the school property[1]	Madera	Active
Chowchilla Seventh-day Adventist School (private)	<0.1	East (and within the project footprint) of Avenue 21 to Road 13 Wye Alternative	Madera	Active
Washington Elementary School	<0.1	West of Site 7–Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line associated with the SR 152 (North) to Road 19 Wye Alternative	Merced	Active
El Capitan High School	<0.1	East of Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line associated with the SR 152 (North) to Road 19 Wye Alternative	Merced	Active

Sources: CDE, 2013, 2016
Distances are rounded to the nearest tenth of a mile.
SR = State Route
[1] The portion of the project footprint that intersects the school property is for an underground utility easement; no permanent features would be visible on the ground surface of the school property or playfields.

SR 152 (North) to Road 11 Wye Alternative

As shown in Table 3.11-5, two schools are within 0.25 mile of the SR 152 (North) to Road 11 Wye Alternative in Madera County. The SR 152 (North) to Road 11 Wye Alternative is approximately 0.2 mile north of Fairmead Elementary School and 0.1 mile north of Fairmead Head Start.

Landfills

Landfills within 0.25 mile of the Central Valley Wye alternatives were evaluated as part of this analysis for their potential to release methane gas, which may present an explosion risk.

SR 152 (North) to Road 13 Wye Alternative

No landfills were identified within 0.25 mile of the SR 152 (North) to Road 13 Wye Alternative project footprint.

SR 152 (North) to Road 19 Wye Alternative

One active landfill, the Highway 59 Landfill in Merced, is located within the RSA of the Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line. The landfill gas monitoring system at the Highway 59 Landfill has detected levels of methane in excess of those permitted under title 27, section 20921(a)(2,) Gas Monitoring and Control. Merced County Regional Waste Management Authority is coordinating with the Merced County Department of Public Health and the California Department of Resource Recycling and Recovery to resolve the issue.

Avenue 21 to Road 13 Wye Alternative

One active landfill, the Fairmead Solid Waste Disposal Site, is approximately 0.1 mile north of the Avenue 21 to Road 13 Wye Alternative project footprint and within the safety and security RSA for landfills. Under current regulations (see Section 3.11.2.2), all operating and most closed landfills are required to have landfill gas migration control systems and monitoring programs. Additionally, most active and many closed landfills have landfill gas capture and treatment and destruction systems. Therefore, the likelihood of methane landfill gas affecting an area beyond the landfill property is low.

SR 152 (North) to Road 11 Wye Alternative

No landfills were identified within 0.25 mile of the SR 152 (North) to Road 11 Wye Alternative project footprint.

Valley Fever

Valley Fever (*Coccidioides immitis* or “cocci”)—a fungal infection caused by inhalation of fungus in airborne dust after soil disturbance—is a regional concern in the San Joaquin Valley (California Department of Public Heath (CDPH) 2018), and as such is a concern under all of the Central Valley Wye alternatives. The fungus that causes Valley Fever resides in the soil and thrives in the dry dirt and desert-like weather conditions of the San Joaquin Valley. Exposure to *C. immitis* does not guarantee that an individual will become ill; approximately 60 percent of people exposed to the fungal spores are asymptomatic and show no signs of an infection (United States Geological Survey 2000). Individuals with symptoms may develop fever, chest pain, respiratory irritation, headaches, and fatigue. The number of reported Valley Fever cases in California, more than 75 percent of which have occurred in the San Joaquin Valley, has increased since 2000, with more than 4,000 documented cases in 2012 (CDPH 2016). Merced and Madera Counties are among the counties in California with the highest average of annual rates of Valley Fever—more than 10 cases per 100,000 people are reported annually (CDPH 2016).

High-Risk Facilities and Fall Hazards

High-risk facilities, such as high-pressure pipelines and oil wells/fields, and fall hazards, such as industrial facilities with tall structures, could pose threats to operations of the Central Valley Wye alternatives in the event of a disaster at those facilities.

Propane, bulk fuel, and bulk chemical storage facilities may be located in industrial areas of the Central Valley, some of which may be adjacent to railroads and highways. Sites of potential environmental concern (PEC) located within the RSA are identified and discussed in Section 3.10 (Section 3.10.5.2, Sites of Potential Environmental Concern; Table 3.10-4 and Figure 3.10-2). These PEC sites have contamination from hazardous materials releases and may aboveground and underground bulk storage tanks or other bulk hazardous material storage on-site.

High-risk facilities within or near the project footprints for the Central Valley Wye alternatives are discussed in Section 3.6, Section 3.9, and Section 3.10. The fire and rescue agencies follow standard emergency response protocols for industrial sites when responding to emergencies at

high-risk facilities (Anderson 2010; Moore 2009). Table 3.11-6 describes the high-risk facilities within the safety and security RSA for the Central Valley Wye alternatives that could pose safety hazards. High-risk facilities within the safety and security RSA for the Central Valley Wye alternatives include two substations and one petroleum pipeline. Additionally, the Central Valley Wye alternatives pass close to numerous active and abandoned gas wells that were once part of the Chowchilla Gas Field and are considered high-risk facilities (Figure 3.9-5).

Table 3.11-6 High-Risk Facilities within Safety and Security RSA of the Central Valley Wye Alternatives

High-Risk Facility	SR 152 (North) to Road 13 Wye Alternative	SR 152 (North) to Road 19 Wye Alternative	Avenue 21 to Road 13 Wye Alternative	SR 152 (North) to Road 11 Wye Alternative
PG&E Company Chowchilla Substation, located north of the intersection of Road 17 1/2 and Avenue 23 1/2	Yes	Yes	No	Yes
PG&E Company Dairyland Substation east of Robertson Boulevard, located at the Avenue 21 and Railroad Avenue intersection	No	No	Yes	No
Kinder-Morgan high-pressure petroleum pipeline, extending along the UPRR corridor	Yes	Yes	Yes	Yes
Various high-pressure gas pipelines	Yes	Yes	Yes	Yes
Various oil and gas wells	Yes	Yes	Yes	Yes

Source: Authority and FRA, 2016b
SR = State Route
PG&E = Pacific Gas and Electric
Yes/No – Yes indicates the high-risk facility is within the alternative's resource study area. No indicates the high-risk facility is outside of the alternative's resource study area.

Tall structures can also pose a safety hazard because of their potential to topple onto HSR facilities caused by accidents, severe weather, or terrorist acts. No tall structures were identified in the safety and security RSA; therefore, these facilities are not discussed further.

SR 152 (North) to Road 13 Wye Alternative

The following high-risk facilities are located in the safety and security RSA for the SR 152 (North) to Road 13 Wye Alternative:

- PG&E Chowchilla Substation, north of the intersection of Road 17 1/2 and Avenue 23 1/2
- Kinder-Morgan high-pressure petroleum pipeline, extending along the UPRR corridor within the safety and security RSA
- Various high-pressure gas pipelines

Twelve oil and gas wells are located within the SR 152 (North) to Road 13 Wye Alternative within the oil and gas wells RSA (1 idle and 11 plugged).

SR 152 (North) to Road 19 Wye Alternative

High-risk facilities within the safety and security RSA of the SR 152 (North) to Road 19 Wye Alternative would be the same as described for the SR 152 (North) to Road 13 Wye Alternative.

Fourteen wells are located within the oil and gas wells RSA for the SR 152 (North) to Road 19 Wye Alternative (1 idle dry gas and 13 plugged). There is one inactive oil and gas well within 200 feet of the Site 7—Le Grand Junction/Sandy Mush Road, Wilson–Dairyland (idle) 115 kV Power Line and one inactive well within 200 feet of the Site 7—Le Grand Junction/Sandy Mush Road, 115 kV Tie-Line.

Avenue 21 to Road 13 Wye Alternative

The following high-risk facilities are located in the safety and security RSA for the Avenue 21 to Road 13 Wye Alternative:

- PG&E Company Dairyland Substation east of Robertson Boulevard, at the Avenue 21 and Railroad Avenue intersection
- Kinder-Morgan high-pressure petroleum pipeline, extending along the UPRR corridor within the safety and security RSA
- Various high-pressure gas pipelines

Additionally, five wells are within the oil and gas wells RSA for the Avenue 21 to Road 13 Wye Alternative (one idle dry gas and four plugged).

SR 152 (North) to Road 11 Wye Alternative

High-risk facilities within the safety and security RSA of the SR 152 (North) to Road 11 Wye Alternative would be the same as described for the SR 152 (North) to Road 13 Wye Alternative. Twelve wells are within the oil and gas wells RSA for the SR 152 (North) to Road 11 Wye Alternative (1 idle dry gas and 11 plugged).

3.11.6 Environmental Consequences

3.11.6.1 Overview

This section evaluates how the No Project Alternative and the Central Valley Wye alternatives could affect safety and security. The impacts of the Central Valley Wye alternatives are described and organized in Section 3.11.6.3, Central Valley Wye Alternatives, as follows:

Construction Impacts

Emergency Services Impacts

- Impact SS#1: Temporary Interference with Emergency Response Times
- Impact SS#2: Permanent Interference with Emergency Response Times

Community Safety and Security Impacts

- Impact SS#3: Temporary Exposure to Construction Site Hazards
- Impact SS#4: Temporary Motor Vehicle, Pedestrian, and Bicycle Safety Risks
- Impact SS#5: Permanent Motor Vehicle, Pedestrian, and Bicycle Safety Risks
- Impact SS#6: Temporary Exposure to Landfill Hazards
- Impact SS#7: Temporary Exposure to Valley Fever

Operations Impacts

Emergency Services Impacts

- Impact SS#8: Continuous Permanent Interference with Emergency Response

Community Safety and Security Impacts

- Impact SS#9: Continuous Permanent Exposure to Wildlife Hazards
- Impact SS#10: Temporary and Continuous Permanent Interference with Airport Safety
- Impact SS#11: Continuous Permanent Exposure to High-Risk Facilities
- Impact SS#12: Continuous Permanent Criminal and Terrorist Activity
- Impact SS#13: Continuous Permanent Safety Hazard to Schools

3.11.6.2 No Project Alternative

The population in the San Joaquin Valley is expected to grow through 2040 (see Section 2.2.2.2, Planned Land Use). The No Project Alternative considers the impacts of current land use and transportation plans in Merced and Madera Counties, including planned improvements to the highway, aviation, conventional passenger rail, and freight rail systems through the 2040 planning horizon for the environmental analysis. Development in the San Joaquin Valley to accommodate the population increase would continue under the No Project Alternative and result in associated direct and indirect impacts on safety and security. Such planned projects anticipated to be constructed by 2040 include transportation, housing, commercial, and other development.

As described in Section 3.11.5, Affected Environment, past development has led to conditions affecting emergency services and community safety and security. Regional and local plans outline procedures for current and future community conditions including, fire, law enforcement, and emergency medical service operations during emergencies such as, fires and other natural disasters; hazardous materials spills; transportation emergencies; civil disturbance; and terrorism. Average law enforcement and fire department response times are provided in Section 3.11.5; these response times are consistent with applicable goals and objectives contained in regional and local planning documents. For example, Madera County is meeting the Madera County General Plan (Madera County 1995) Policy 3.H.2 emergency response time goal of 10 minutes in urban areas and the 20-minute response time goal in rural areas. Violent crime rates in both Merced and Madera Counties are higher than the state average. Violent crime rates in Merced County and the state of California have decreased since 2010 while violent crime rates have increased in Madera County. While the property crime rate for Merced County is higher than the state average, the property crime rate for Madera County is lower than the state average. Property crime rates have increased since 2010 for Merced and Madera Counties and the state of California. This increase in crime may correspond with the increase in population and development that has occurred since 2010. As population and development continues to increase, it is expected that crime rates would also increase.

Future development projects in Merced and Madera Counties include dairy farm expansions, implementation of airport development and land use plans, and implementation of general and specific plans throughout both counties. Planned projects under the No Project Alternative would also include transportation projects, such as the expansion of SR 99, and residential, commercial and industrial developments. A full list of anticipated future development projects is provided in Appendix 3.19-A, Cumulative Plans and Non-Transportation Projects List, and Appendix 3.19-B, Cumulative Transportation Projects List. The residential and commercial growth expected in and around the city of Chowchilla, as described in the Introduction and Land Use sections of the *City of Chowchilla 2040 General Plan* (pages I-1 through L-69) (City of Chowchilla 2011), is anticipated to affect safety and security resources. It is expected that development activities and ongoing infrastructure operations would continue to occur and could affect traffic volumes on regional roadways. However, currently planned roadway capacity expansions would incorporate design features that reduce, but would not completely avoid, the potential for automobile and truck accidents. For these reasons, it is expected that existing accident rates would continue into the future. Transportation improvements would also incorporate design features that minimize the potential for accidents, and service level goals for emergency responders would have to be adjusted and met for the growing population on a regional level.

Under the No Project Alternative, the demand for law enforcement, fire and emergency services would change and coincide with the anticipated population growth and needs of planned industrial, residential and commercial developments. Counties and cities have financial mechanisms in place to meet service level goals for emergency responders based on the projected population growth in Merced and Madera Counties. In addition, the demand for newly planned development continues to increase from increasing population demands; incidents of crime are also expected to increase, leading to safety and security impacts. However, crime rates depend, in part, on economic conditions. Planned development and transportation projects that would occur as part of the No Project Alternative would likely include various forms of mitigation to address impacts on safety and security.

3.11.6.3 Central Valley Wye Alternatives

Construction and operations of the Central Valley Wye alternatives could result in temporary and permanent direct and indirect impacts on safety and security related to fire response, law enforcement, emergency medical services, emergency response plans, vehicular safety, pedestrian and bicycle safety, rail safety, airports, schools, high-risk facilities, landfills, and Valley Fever. This section discusses those impacts in detail.

Construction Impacts

Construction of the Central Valley Wye alternatives would involve, for example, demolition of existing structures, clearing and grubbing; handling, storing, hauling, excavating, and placing fill; possible pile driving; and construction of aerial structures, bridges, road modifications, utility upgrades and relocations, HSR electrical systems, and railbeds. Construction activities are described in Chapter 2, Alternatives.

Emergency Services Impacts

Impact SS#1 Temporary Interference with Emergency Response Times

Construction activities associated with the Central Valley Wye alternatives would require temporary construction easements, which may require the temporary closure of parking areas and roadway travel lanes, construction adjacent to highways, and changes in traffic routes along closures. Such road closures could temporarily affect emergency response times by forcing emergency responders to take detours in the Central Valley Wye construction and operations RSA for direct impacts. Construction staging plans at the 15 percent design level include roadway detours during the construction phase for each of the Central Valley Wye alternatives (refer to the Transportation Technical Report, Appendix E, Construction Staging Plans and Possible Detour Routes by Alternative). The SR 152 (North) to Road 13 Wye Alternative would have the most temporary road closures (17), followed by the Avenue 21 to Road 13 Wye Alternative (15), and the SR 152 (North) to Road 19 and SR 152 (North) to Road 11 Wye alternatives (each with 13 temporary road closures). Although the Avenue 21 to Road 13 Wye Alternative would have the second-most temporary road closures, it is expected to have the greatest length of detours among the alternatives (36 miles). The SR 152 (North) to Road 13 Wye Alternative would have 30 miles of detours, followed by the SR 152 (North) to Road 11 Wye and SR 152 (North) to Road 19 Wye Alternatives (26 miles and 25 miles of detours, respectively). As a result, the potential for temporary direct impacts on emergency response times caused by temporary road closures would be greatest under the Avenue 21 to Road 13 Wye Alternative, followed by the SR 152 (North) to Road 13 Wye Alternative, SR 152 (North) to Road 11 Wye Alternative, and SR 152 (North) to Road 19 Wye Alternative.

In rural areas, increases in response times as a result of temporary road closures may be greater than in urban areas because there would be fewer grade-separated crossings of HSR tracks. As a result, emergency response teams could be forced to use longer alternate routes to reach their intended destination when compared to urban areas, where there would be more grade-separated crossings and therefore shorter distances for emergency responders to travel. This temporary direct impact would occur in rural Merced, Madera, Fresno, and Stanislaus Counties, where there is low population density and greater distances between residences and emergency service providers. In these remote areas of the safety and security RSA, the impact would be regional because responders from multiple jurisdictions may be involved. This would result in temporary indirect impacts where service provides are located outside of, but have service boundaries or provide service within, the safety and security RSA.

As described in Section 3.11.4.2, Impact Avoidance and Minimization Features, the Central Valley Wye alternatives would incorporate IAMFs to avoid and minimize impacts related to safety and security. As part of SS-IAMF#1, the Authority would develop and incorporate a construction safety transportation management plan, which describes the contractor's coordination efforts with local jurisdictions for maintaining emergency vehicle access to address the impact on emergency service response time. This plan would also specify the contractor's procedures for implementing temporary road closures, including emergency vehicle access. The plan would provide for 24-

hour access by emergency vehicles during construction. This emergency access provision would be included in the contract between the Authority and the contractor and would be required for all construction areas. Specific emergency access routes would be finalized during preparation of the construction safety transportation management plan in coordination with the Authority and local municipalities. The plan also would provide traffic controls pursuant to the *California Manual on Uniform Traffic Control Devices* sections on temporary traffic controls (Caltrans 2014)[14] and would include elements for minimizing impacts on emergency access, mainly through establishing detour provisions for temporary road closures and identified routes for construction traffic. Therefore, impacts on emergency response would be minimized under all of the Central Valley Wye alternatives because the alternatives include effective coordination and emergency vehicle access procedures that would minimize temporary changes to service ratios, response times, or other performance objectives for emergency services.

CEQA Conclusion

The impact under CEQA would be less than significant because emergency vehicle access procedures would be incorporated during construction of the Central Valley Wye alternatives. These procedures would avoid impacts on service ratios, response times, or other performance objectives for emergency services through coordination with local jurisdictions to maintain emergency vehicle access and by establishing detour provisions for temporary road closures and routes for construction traffic. Therefore, CEQA does not require any mitigation.

Impact SS#2 Permanent Interference with Emergency Response Times

Construction of any of the Central Valley Wye alternatives would require permanent road closures that could affect traffic patterns, including emergency vehicle access, in the Central Valley Wye construction and operations RSA for direct impacts. The SR 152 (North) to Road 13 Wye Alternative would require the most permanent road closures (38), and therefore would have the greatest potential for impacts on emergency response times, compared to the other alternatives. Construction of the SR 152 (North) to Road 19 Wye Alternative would require 36 road closures, while the SR 152 (North) to Road 11 Wye Alternative and Avenue 21 to Road 13 Wye Alternative would require closures of 33 and 30 roads, respectively.

Grade-separated interchanges proposed as part of the Central Valley Wye alternatives would provide a benefit by reducing traffic delay at current at-grade intersections and provide direct access for emergency responders across the HSR right-of-way. New, permanent road crossings would total 24 for the SR 152 (North) to Road 13 Wye Alternative, 29 for the SR 152 (North) to Road 19 Wye Alternative, 28 for the Avenue 21 to Road 13 Wye Alternative, and 24 for the SR 152 (North) to Road 11 Wye Alternative. Thus, the SR 152 (North) to Road 19 Wye and Avenue 21 to Road 13 Wye Alternatives would have the greatest beneficial impacts, and the SR 152 (North) to Road 13 Wye and SR 152 (North) to Road 11 Wye alternatives would have the least beneficial impacts. The exact locations and other details of all permanent roadway closures and other modifications, such as grade separations and crossing configuration (e.g., underpass, overpass), are presented in Appendix 3.2-A, High-Speed Rail Grade Separations and Road Closures for Central Valley Wye Alternatives, and on Figures 3.2-6 through 3.2-9 of Section 3.2.

In rural areas in Merced and Madera Counties,[15] where fewer grade-separated crossings would be constructed under the Central Valley Wye alternatives than in urban areas, longer reroutes and potentially longer response times could occur for emergency response providers traveling across or in the Central Valley Wye construction and operations RSA for direct impacts. In these remote areas of the RSA, the impact would be regional because responders from multiple jurisdictions may be involved. This would result in indirect impacts where service provides are located outside of, but have service boundaries or provide service within, the safety and security

[14] As a state agency, the Authority would be required to follow the regulations of other state agencies. Should this manual be revised prior to construction, the Authority would follow the revised version.

[15] There would be no permanent road closures associated with new/modified Central Valley Wye alternatives-related electrical infrastructure in Merced, Madera, Fresno or Stanislaus Counties. Therefore, impacts from permanent road closures are appropriately confined to Merced and Madera Counties where the HSR would travel.

RSA. However, even in rural areas, the distance between overcrossings or undercrossings would vary from less than 2 miles to approximately 5 miles where other roads are perpendicular to the proposed HSR alignment.

The modifications to the roadway network would provide sufficient access in the RSA, and none of the alternatives would be expected to affect the ability of local jurisdictions to meet response time goals, affect service ratios, or other performance objectives for emergency services. Considering both the changes in the traffic circulation patterns caused by road closures and the beneficial impacts of constructing new grade-separated interchanges, the Avenue 21 to Road 13 Wye Alternative would have the least impact on emergency response times and the SR 152 (North) to Road 13 Wye Alternative would have the greatest impact.

CEQA Conclusion

The impact under CEQA would be less than significant under any of the Central Valley Wye alternatives because sufficient access would be provided in the RSA and none of the alternatives would be expected to affect the ability of local jurisdictions to meet response time goals, affect service ratios, or other performance objectives for emergency services. Grade-separated interchanges proposed as part of the Central Valley Wye alternatives would provide a benefit by reducing traffic delay at current at-grade intersections and provide direct access for emergency responders across the HSR right-of-way. Therefore, CEQA does not require any mitigation.

Community Safety and Security Impacts

Impact SS#3 Temporary Exposure to Construction Site Hazards

Construction activities associated with the Central Valley Wye alternatives would require excavation, construction of elevated guideways, and installation of electrical systems. These construction sites would involve heavy equipment on-site, earthwork, and other major construction activities, including the transportation of overweight and oversized materials and the use of helicopters to access work areas for reconductoring (construction activities are described in Section 2.4.3, Major Construction Activities, of Appendix 2-D, Electrical Interconnections and Network Upgrades). Throughout construction of all of the Central Valley Wye alternatives, workers would be exposed to hazards associated with potential accidents at construction sites, including those related to the operation of heavy equipment. This potential exposure to worksite hazards would be a temporary and direct impact on the public and workers during construction. Refer to Section 3.10 for an analysis of the potential health and safety risks to the public and workers, including the exposure to hazardous wastes and materials generated during construction.

Construction site conditions and associated risks to workers and the general public would be the same under all Central Valley Wye alternatives because the same workplace safety plans, procedures, and regulations would apply to each alternative. IAMFs incorporated as part of the Central Valley Wye alternatives would require the development and incorporation of a safety and security management plan (SS-IAMF#2). This plan includes system safety program plans, rail safety standards, worker safety standards, crime prevention design guidelines, safety and health plans, fire/life safety programs, security plans, and emergency procedures that would be followed to maintain the safety and security of all construction workers, employees, passengers, and the public. The contractor would document in a technical memorandum how plans, programs, and guidelines were considered and incorporated in the design and construction and how they would comply with standard procedures to minimize the potential for construction worksite accidents. The technical memorandum would also document how safety and security measures and site-specific health and safety plans and site-specific security plans establish minimum safety and security guidelines for contractors of, and visitors to, the construction site. The contractor would comply with and be responsible for implementing a written workplace injury and illness prevention program (California Code of Regulations, title 8, § 1502 et seq.; Cal-OSHA Pocket Guide for the Construction Industry [Cal-OSHA 2014]; Cal-OSHA Users' Guide to California Occupational Safety and Health Administration [Cal-OSHA 2013]), therefore minimizing the potential for accidents at construction sites. Contractors would be required to develop and implement site-specific measures that address regulatory requirements to protect human health and property at construction sites. These are sites where workers trained in safety and security measures would

be involved in construction activities. Additionally, PG&E and the helicopter operator would comply with applicable Federal Aviation Administration regulations for all helicopter use associated with reconductoring, which would occur under each alternative. PG&E would also comply with CPUC General Orders 95 and 128, which provide guidelines for the design, construction, and maintenance of overhead utility lines and underground electrical supply and communications, respectively, and address safety risks to workers and the public. Therefore, compliance with these workplace safety regulations and industry practices would minimize any potential impacts on human health and safety associated with on-site construction site hazards under all of the Central Valley Wye alternatives.

In addition to the risks associated with construction worksite conditions, external hazards related to nearby oil and gas wells could pose additional risks to workers or the nearby public. Oil and gas wells occur within 200 feet of the centerline for all of the Central Valley Wye alternatives. The most wells, one idle and 13 plugged, lie within 200 feet of the SR 152 (North) to Road 19 Wye Alternative centerline, while the fewest wells, one idle and four plugged, lie within 200 feet of the Avenue 21 to Road 13 Wye Alternative centerline. Given the nominal difference in the number of wells within the RSA of each alternative, the potential for impacts related to oil and gas wells is approximately the same. While none of the oil and gas wells in the RSA are active, construction workers would work in the vicinity of these high-risk facilities, potentially presenting a temporary direct impact on worker safety.

The primary risk from oil and gas wells would be associated with well blowouts, which could include fire and explosion and compromise the safety of construction workers, passengers, and the public. Wells in the region are largely inactive,[16] and a review of oil and gas well blowouts in the region from 1991 to 2008 revealed few blowouts. Because these wells have been inactive for at least 6 months, the occurrence of such an event has been characterized as highly unlikely per the preliminary hazard analysis (Authority 2014b). The Authority would develop and incorporate design standards that require the contractor to identify and inspect all active, idle, and abandoned oil and gas wells within 200 feet of the HSR tracks prior to construction (SS-IAMF#4). Any active wells identified would be abandoned or relocated in accordance with the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) standards and in coordination with the well owners. All abandoned wells within 200 feet of the HSR tracks would be inspected and re-abandoned, where necessary, in accordance with California Department of Conservation DOGGR standards and in coordination with the well owner. The design standards and requirements of SS-IAMF#4 would minimize the risk of accidents associated with encountering oil or gas wells such as well fires or explosions that could compromise the safety of construction workers, passengers, and the public under all Central Valley Wye alternatives. Refer to Section 3.10, Impact HMW#6, Temporary Effects Associated with Risks during Construction on or near Landfills and Oil and Gas Wells, for additional discussion regarding the potential for release of hazardous materials from oil and gas wells in proximity to the Central Valley Wye alternatives and Section 3.9, Impact GEO#9, Loss of Availability of Mineral or Energy Resources and Increase in Safety Risk due to Disruption of Subsurface Oil and Gas Resources, regarding risks of construction near oil and gas fields.

CEQA Conclusion

The impact under CEQA would be less than significant because safety plans, design standards, and features would be incorporated during construction of the Central Valley Wye alternatives. IAMFs would be effective in minimizing safety and security impacts on construction site workers and visitors that could result from exposure to hazards or accidents. Therefore, CEQA does not require any mitigation.

Impact SS#4 Temporary Motor Vehicle, Pedestrian, and Bicycle Safety Risks

Construction activities associated with the Central Valley Wye alternatives would require some roads to be temporarily closed and traffic detours to be established around construction work

[16] Inactive wells could be either idle or plugged. An idle well is one that has not produced oil or gas or has not been used for fluid injection for 6 consecutive months during the last 5 years, and a plugged well is a well that has been abandoned.

sites (refer to Chapter 2 for more details regarding the road design features for each alternative). The existing roadway system within the safety and security RSA for all of the Central Valley Wye alternatives experiences low volumes of motor vehicle traffic and has limited sidewalks or bicycle paths for pedestrian or bicyclist use. The operation of construction vehicles during construction periods adds an increased risk of potential traffic accidents. Further, during construction, these road closures and detours could distract automobile drivers, pedestrians, or cyclists traveling in the area. Being distracted or unfamiliar with the detour or new route created as a result of these temporary closures could affect automobile, bicyclist, or pedestrian behaviors, and increase the risk of accidents. These conditions could present a temporary and direct safety risk to motor vehicle, pedestrian, and bicycle users. Construction staging plans at the 15 percent design level include roadway detours during the construction phase for each of the Central Valley Wye alternatives (refer to the Transportation Technical Report, Appendix E, Construction Staging Plans and Possible Detour Routes by Alternative). Although there are differences among the Central Valley Wye alternatives relating to the length of detours (see Impact SS#1), the potential for impacts on motorists, pedestrians, and bicyclists is the same because the same construction activities and related risks would occur under each of the Central Valley Wye alternatives.

Prior to construction, the Authority would develop and incorporate a construction safety transportation management plan (SS-IAMF#1), which would specify the contractors' procedures for implementing temporary road closures including: access to residences and businesses during construction, lane closures, signage and flag persons, temporary detour provisions, alternative bus and delivery routes, emergency vehicle access, and alternative access locations. HSR safety plans would also address the maintenance of pedestrian access during the construction period, including sidewalk closures, crosswalk closures and/or pedestrian rerouting at intersections, and avoiding placement of construction-related material within pedestrian pathways or sidewalks. Similar plans would be prepared to maintain bicycle access during the construction period which could be affected by bike lane closures or narrowing, closure or narrowing of streets that are designated bike routes, bridge closures, and placement of construction-related materials within designated bike lanes or along bike routes (refer to Section 3.2 for additional analysis of temporary impacts on pedestrian and bicycle access).

The incorporation of IAMFs would minimize the potential for vehicular, pedestrian, and bicycle traffic accidents that may occur during construction of any of the Central Valley Wye alternatives.

CEQA Conclusion

The impact under CEQA would be less than significant because safety plans, design standards, and features would be incorporated during construction of the Central Valley Wye alternatives, and the potential for impacts on the safety of motorists, bicyclists, and pedestrians that could result from traffic hazards would be minimized. Therefore, CEQA does not require any mitigation.

Impact SS#5 Permanent Motor Vehicle, Pedestrian, and Bicycle Safety Risks

The design of the Central Valley Wye alternatives considers motorist, pedestrian, and bicyclist safety through construction of grade-separated crossings for the HSR system and automobile, pedestrian, and bicycle traffic. Refer to Section 3.2 for the analysis of potential safety improvements that could result from grade separations and road closures of the Central Valley Wye alternatives and their potential beneficial impacts on automobile, pedestrian, and bicycle traffic. The roadway improvements under all Central Valley Wye alternatives would comply with the California Department of Transportation *Highway Design Manual* (Caltrans 2011)[17] design standards for roadway safety, thereby providing a safe operating environment for motorists, pedestrians, and bicyclists. A summary of the applicable design standards, including compliance laws, regulations, and industry standard practices, are included in Volume II, Appendix 2-C, Applicable Design Standards.

[17] As a state agency, the Authority would be required to follow the regulations of other state agencies. Should this manual be revised prior to construction, the Authority would follow the revised version.

Further, the SR 152 (North) to Road 13 Wye, SR 152 (North) to Road 19 Wye, and SR 152 (North) to Road 11 Wye Alternatives would involve constructing grade separations along SR 152, which would upgrade this transportation facility from highway to a freeway. These grade separations are improvements that are consistent with Caltrans's long-term plans for SR 152 but would accelerate the timeframe in which the upgrades would be constructed, and would also increase the number of grade-separated crossings relative to Caltrans' plans (Caltrans 2015, 2016). The grade separations would improve the traffic flow for the approximately 17,000 motorists that use SR 152 per day (Caltrans 2016). Construction of the Avenue 21 to Road 13 Wye Alternative would not improve SR 152. Upgrading SR 152 from a highway to a freeway would generate safety benefits. Currently, rural roads and SR 233 cross SR 152 at grade, creating a safety hazard for motorists, including from slow-moving trucks and agricultural equipment crossing the highway. In the winter months, the Central Valley is subject to dense fog, which reduces visibility and increases the accident risk. As a result of constructing the grade separations, the stretch of SR 152 adjacent to the HSR system, including near the city of Chowchilla, would become fully access controlled with interchanges providing full-speed on and off ramps. The safety benefits associated with upgrades to SR 152 would be greatest under the SR 152 (North) to Road 19 Wye Alternative because 29 grade separations would be constructed along the alignment. The SR 152 (North) to Road 13 Wye and SR 152 (North) to Road 11 Wye alternatives would each include a total of 24 grade separations. Although HSR would grade-separate Avenue 21, the improvements would not benefit as many users, and the elevated accident risk along SR 152 would remain. The design of the Central Valley Wye alternatives includes effective roadway improvements that would permanently minimize the exposure of motorists, pedestrians, and bicyclists to traffic hazards through the improvements to SR 152, local street widening, traffic restrictions, and new traffic signals. Therefore, the design of the Central Valley Wye alternatives would be beneficial to motorist, pedestrian, and bicyclist safety under all alternatives.

CEQA Conclusion

There would be no impact under CEQA because highway improvements and local roadway improvements would be incorporated for each of the Central Valley Wye alternatives, permanently reducing the exposure of motorists, pedestrians, and bicyclists to traffic hazards. Therefore, CEQA does not require any mitigation.

Impact SS#6 Temporary Exposure to Landfill Hazards

Landfills within 1,000 feet of the Central Valley Wye alternatives were analyzed for their potential to present a methane gas explosion risk during construction that could create a temporary and direct hazard for the public or construction workers. Construction of the SR 152 (North) to Road 13 Wye and SR 152 (North) to Road 11 Wye alternatives would not result in the potential for methane ignition because no landfills are located adjacent to these alternatives. One landfill, the Fairmead Solid Waste Disposal Site, is located on the west side of SR 99 in Fairmead, approximately 0.1 mile north of the Avenue 21 to Road 13 Wye Alternative project footprint. Similarly, one landfill, the Highway 59 Landfill, is located approximately 700 feet northeast of the existing Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line, associated with the SR 152 (North) to Road 19 Wye Alternative. To avoid the potential risks associated with methane ignition at or near landfills, the Authority would develop and incorporate methane protection measures (HMW-IAMF#9) for work within 1,000 feet of a landfill, including gas detection systems and personnel training, pursuant to California Code of Regulations, title 27, section 20917 et seq. (see *Gas Monitoring and Control at Active and Closed Disposal Sites* in Section 3.11.2.2), a hazardous materials contingency plan, and best management practices. These methane protection measures would avoid the risk of igniting methane releases. Therefore, although the Avenue 21 to Road 13 Wye and SR 152 (North) to Road 19 Wye alternatives are in close proximity to the Fairmead Solid Waste Disposal Site and the Highway 59 Landfill, respectively, the methane protection and detection measures would prevent an increase in exposure of the public, passengers, or construction site workers to landfill hazards under all alternatives. Refer to Section 3.10, Impact HMW#6, for additional discussion regarding the potential for methane gas release from landfills in proximity to the Central Valley Wye alternatives.

CEQA Conclusion

There would be no impact under CEQA for the SR 152 (North) to Road 13 Wye and SR 152 (North) to Road 11 Wye Alternatives because there are no landfills located adjacent to these alternatives, and as a result, people would not be exposed to accidents caused by methane ignition. Therefore, CEQA does not require any mitigation.

The impact under CEQA would be less than significant for the Avenue 21 to Road 13 Wye and SR 152 (North) to Road 19 Wye Alternatives because methane protection and detection measures incorporated as part of the IAMFs would prevent potential methane releases and ignition. Therefore, increases in hazards to people residing or working in the project footprints of these alternatives related to methane gas ignition from landfills would not occur. Therefore, CEQA does not require any mitigation.

Impact SS#7 Temporary Exposure to Valley Fever

Construction activities associated with the Central Valley Wye alternatives would require temporary disruption of soil that could contain the fungus that causes Valley Fever. Inhaling airborne dust that contains this fungus could pose a threat to the health of construction workers and the public. People who contract the fungal infection develop flu-like symptoms, including fever, chest pain, muscle or joint aches, and coughing. This would be a temporary direct impact during the construction phase of the Central Valley Wye alternatives. The greatest amount of ground disturbance during construction that could release the fungus that causes Valley Fever would occur under the SR 152 (North) to Road 19 Wye Alternative (4,031 acres), followed by the SR 152 (North) to Road 13 Wye Alternative (3,272 acres), the SR 152 (North) to Road 11 Wye Alternative (3,101 aces), and the Avenue 21 to Road 13 Wye Alternative (2,900 acres). However, because the location of the fungus that causes Valley Fever is not known and any amount of disruption in the soil could release the fungus, the potential to spread Valley Fever would be approximately the same under all alternatives.

To prevent the spread of Valley Fever from construction, the Authority has incorporated measures to control fugitive dust emissions by covering vehicles transported on public roads, washing trucks and equipment, watering exposed surfaces and unpaved roads, limiting vehicle travel speed, suspending dust-generating activities when average wind speeds exceed 25 miles per hour, stabilizing disturbed areas and on-site and off-site unpaved roads, watering or presoaking disturbed lands, washing exterior surfaces of buildings during demolition, and removing the accumulation of mud or dirt from public streets. These measures would be included in a fugitive dust control plan prepared by the contractor for each distinct construction segment to describe how each measure is employed and to identify an individual responsible for incorporation of these measures (AQ-IAMF#1).

The Central Valley Wye alternatives incorporate IAMFs that the require the contractor to prepare and apply an action plan, which would include information on causes, preventive measures, symptoms and treatments for Valley Fever, outreach and coordination with California Department of Public Health, coordination with county departments to make readily available information on Valley Fever to residents, schools and businesses, and dedication of a qualified person who would oversee incorporation of the Valley Fever prevention measures (SS-IAMF#2). A Valley Fever health and safety designee would coordinate with the county public health officer to determine what measures would be required as part of the safety and security management plan (SS-IAMF#2) to avoid Valley Fever exposure. The designee would manage implementation of the Valley Fever control measures, which would include, but are not limited to, training workers and supervisors on how to recognize symptoms of illness and ways to minimize exposure; providing washing facilities; providing vehicles with enclosed air conditioning cabs; equipping heavy equipment cabs with high efficiency particulate air filters; and making National Institute for Occupational Safety and Health-approved respiratory protection with particulate filters available to workers who request them. Therefore, incorporation of IAMFs would be effective in avoiding increasing the exposure risk of the public or construction workers to Valley Fever for all alternatives.

CEQA Conclusion

The impact under CEQA would be less than significant to the public or construction workers because the Central Valley Wye alternatives would include effective fugitive dust control measures and an action plan that provides information, outreach, and coordination, as well as incorporation of preventive measures. As a result, construction of the Central Valley Wye alternatives would not increase the exposure risk of the public or workers to Valley Fever, and therefore would not result in a safety hazard. Therefore, CEQA does not require any mitigation.

Operations Impacts

Operations of the Central Valley Wye alternatives would include inspection and maintenance along the track and railroad right-of way, as well as on the structures, fencing, power system, train control, and communications. Operations and maintenance activities are described in Chapter 2.

Emergency Services Impacts

Impact SS#8 Continuous Permanent Interference with Emergency Response

The Central Valley Wye alternatives would involve the operation of HSR within an access-controlled right-of-way, which emergency services (e.g., medical, fire, and police) could need to access in the event of an accident or other emergency situation. In addition, the Central Valley Wye alternatives would include elements (e.g., passenger cars and traction power or paralleling stations) that pose a potential risk of fire and related hazards onboard the HSR trains.

Emergency service providers from multiple jurisdictions may be involved in responding to rail accidents (and nonrail accidents), including to portions of elevated tracks, which could be difficult to evacuate and difficult for emergency responders to access when a train is stopped. The potential for this permanent direct impact would be similar under all alternatives because the difference in elevated track between the alternative with the least amount of elevated track and most amount of elevated track is only 1.5 linear miles. The SR 152 (North) to Road 11 Wye Alternative would have the most elevated track (4.5 linear miles), followed by the Avenue 21 to Road 13 Wye Alternative (4 linear miles), the SR 152 (North) to Road 19 Wye Alternative (3.5 linear miles), and the SR 152 (North) to Road 13 Wye Alternative (3 linear miles). Each of the Central Valley Wye alternatives is designed to provide access for emergency personnel to elevated portions of the track to allow for evacuation, if needed, regardless of the amount or location of elevated track.

The risk of fire and other related hazards onboard HSR trains that would require response from emergency service providers would be the same for all Central Valley Wye alternatives because train operating procedures do not vary by alternative. To enable emergency service providers to respond quickly in the event of an emergency, the Authority would incorporate safety and security measures into the HSR system design, such as emergency operating procedures that would address emergency situations, and a fire and life safety program that would address the safety of passengers and employees during emergency responses (SS-IAMF#2). Local emergency service providers would be consulted in developing and implementing an emergency response plan in case such an incident occurs. FRA safety regulations (49 C.F.R. Part 239, Passenger Train Emergency Preparedness) also require specific emergency response measures, including the preparation of an emergency preparedness plan, which would be completed prior to the operation of the Central Valley Wye alternatives. Compliance with emergency preparedness procedure regulations and the incorporation of SS-IAMF#2 would prevent interference with emergency response services under all alternatives.

CEQA Conclusion

The impact under CEQA would be less than significant because incorporation of IAMFs and adherence to passenger train safety regulations would involve effective coordination of emergency operating procedures that address emergency situations and a fire and life safety program. As a result, permanent impacts on emergency response times and access would not occur. Therefore, CEQA does not require any mitigation.

Community Safety and Security Impacts

Impact SS#9 Continuous Permanent Exposure to Wildfire Hazards

Operations activities associated with the Central Valley Wye alternatives would include elements (e.g., passenger cars and traction power or paralleling stations) that could increase the potential for wildfires in the event of an HSR accident. Although HSR trains would not carry fuel or large quantities of flammable materials, there is an inherent fire hazard during operation of electrical infrastructure. Electrical interconnection facilities required under all Central Valley Wye alternatives would be new electrical components that would result in increased risks above baseline conditions associated with electrical fire hazard. However, the surrounding landscape is maintained primarily in active agricultural use. Active agricultural lands are typically irrigated and maintained with minimal excess dry fuel that could ignite. Therefore, the incremental increase in fire hazard would be minimal. Safety measures incorporated in the Central Valley Wye alternatives would further minimize the risk of exposure to wildfire through the development and incorporation of fire and life safety programs (SS-IAMF#2). These fire and life safety programs would be coordinated with local emergency response organizations to provide them with an understanding of the HSR system, facilities, and operations, and to obtain their input for modifications to emergency response operations and facilities. These programs and coordination activities would allow for a rapid response by local emergency responders in the case of an accident, minimizing the potential for uncontrolled wildfire events. The RSAs for all four Central Valley Wye alternatives are rated by CAL FIRE as having a low-to-moderate wildfire hazard potential. Given the lack of combustible fuels in the surrounding landscape, low volumes of flammable materials associated with an HSR system, and incorporation of fire and life safety programs, there would not be an increase in the risk of exposure of the public, passengers, or employees to wildfire hazards under any of the Central Valley Wye alternatives.

CEQA Conclusion

The impact under CEQA would be less than significant to the public, passengers, or employees because the design of the Central Valley Wye alternatives does not include the use of combustible fuels. All of the Central Valley Wye alternatives include effective fire hazard management strategies, which reduce the risk of public, passenger, employee, and structure exposure to wildland fires to minimize the risk of loss, injury, or death from wildland fires. Therefore, CEQA does not require any mitigation.

Impact SS#10 Temporary and Continuous Permanent Interference with Airport Safety

Proximity of the Central Valley Wye alternatives to an existing airport or airstrip could endanger human health and safety if an airplane crashed into any HSR structures, or if HSR structures interfered with airport operations. The potential for the Central Valley Wye alternatives to result in safety hazards in relation to airports within the safety and security RSA has been analyzed considering the *California Airport Land Use Planning Handbook* (Caltrans 2011)[18] guidance on land use restrictions developed to minimize public exposure to safety hazards. One public-service airport and four private airstrips are within 2 miles of the SR 152 (North) to Road 13 Wye Alternative safety and security RSA. Two public-service airport and five private airstrips are within the SR 152 (North) to Road 19 Wye Alternative safety and security RSA. Four private airstrips are within the Avenue 21 to Road 13 Wye Alternative safety and security RSA. One public-service airport and four private airstrips are within the SR 152 (North) to Road 11 Wye Alternative safety and security RSA.

None of the Central Valley Wye alternatives would encroach on any areas that have height or land use restrictions associated with the *Madera Countywide Airport Land Use Compatibility Plan* (Madera County Airport Land Use Commission 2015). The existing Site 7–Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230 kV Transmission Line associated with the SR 152 (North) to Road 19 Wye Alternative is located within the influence area of the *Stanislaus County Airport Land Use Compatibility Plan.* The final height of the self-supporting lattice steel

[18] Most current document

towers would be, at most, 111 feet, which is below the 150-foot height threshold for construction or alternation of facilities within the influence area (Stanislaus County Airport Land Use Commission 2016). During reconductoring activities associated with the Site 7–Le Grand Junction/Sandy Mush Road Warnerville–Wilson 230 kV Transmission Line associated with the SR 152 (North) to Road 19 Wye Alternative and Site 6–El Nido, Los Banos–Oro Loma–Canal 70 kV Power Line, construction workers would be working within 1 mile of the Oakdale Municipal Airport and within 0.25 mile of the Eagle Field Airport, respectively. Given that construction would last up to 1 week at each tower/pole site, workers would be within the vicinity of these airports for short durations and no major safety hazards would be anticipated. Therefore, there would be no potential for safety hazards resulting from interference with airport safety under any of the Central Valley Wye alternatives. Despite the difference in the number of airports within the RSA of each alternative, the potential for impacts on airport safety would be the same for all Central Valley Wye alternatives because none of the alternatives would encroach on any areas that have height or land use restrictions for nearby airports.

CEQA Conclusion

There would be no impact under CEQA because Central Valley Wye alternatives would not encroach on any areas that have height or land use restrictions for nearby airports, and would not result in a safety hazard for people residing or working in the RSA. Therefore, CEQA does not require any mitigation.

Impact SS#11 Continuous Permanent Exposure to High-Risk Facilities

Operations activities associated with the Central Valley Wye alternatives would occur in areas of rural Merced, Madera, Fresno, and Stanislaus Counties in which several high-risk facilities (e.g., oil and natural gas pipelines, electrical substations) are within the safety and security RSA of all of the Central Valley Wye alternatives. High-risk facilities present within the safety and security RSA could pose threats to operations of the Central Valley Wye alternatives in the event of a hazardous release, structural failure, or other incident at these facilities. No information is available that indicates whether the high-risk facilities in the RSA have undergone a catastrophic failure in the past several decades. Propane, bulk fuel, and bulk chemical storage facilities may be located in industrial areas of the Central Valley, some of which may be adjacent to railroads and highways. Sites of PEC located within the RSA are identified and discussed in Section 3.10. These PEC sites potentially have contamination of hazardous materials and may contain above- and underground bulk storage tanks or other bulk hazardous material storage on-site. The potential for exposure to PEC sites would be greatest under the SR 152 (North) to Road 19 Wye Alternative because the most PEC sites are near this alternative (nine). The Avenue 21 to Road 13 Wye, SR 152 (North) to Road 13 Wye, and SR 152 (North) to Road 11 Wye alternatives would have seven, six, and five PEC sites within each alternative project footprint, respectively. Additional analyses for potential impacts from high-risk PEC sites as they relate to the construction and operation of the Central Valley Wye alternatives is provided in Section 3.10.6.3, Central Valley Wye Alternatives.

Other high-risk facilities that could pose a threat to operations of the Central Valley Wye alternatives include electrical substations and oil or natural gas pipelines. Because electrical substations constructed for the Central Valley Wye alternatives would be locked and accessible only to authorized personnel, members of the public would not be exposed to this risk. Oil and gas pipelines could present a hazard to operations activities associated with the Central Valley Wye alternatives in the event of an explosion or the release of hazardous substances. Regulatory controls would minimize the potential for an explosion or spill from a pipeline and associated risks to HSR passengers and employees. Additional analyses of oil and natural gas pipelines are provided in Section 3.6 and Section 3.10.

As described in Impact SS#3, oil and gas wells within 200 feet of any Central Valley Wye alternative would be inspected and either relocated or abandoned, as appropriate (SS-IAMF#4). Because these measures would be taken during construction, safety risks associated with oil and gas wells during operations would be avoided under all alternatives.

The Authority would conduct a preliminary hazard analysis (SS-IAMF#3) that would evaluate the potential effects of high-risk facilities on the Central Valley Wye alternatives, and would identify potential hazards associated with high-risk facilities and identify and incorporate measures to minimize hazards prior to commencement of operation. The safety and security management plan (SS-IAMF#2) would include measures to minimize potential impacts of high-risk facilities, including management plans for removing, relocating, or protecting in-place pipelines, electrical systems, and other buried and overhead high-risk facilities within the project footprints of all alternatives prior to or during construction. Removal, relocation, or protection of in-place high-risk facilities during construction would minimize the potential impact of high-risk facilities on operations by avoiding the risk during operations. The Authority may also develop facility-specific measures for additional protection of high-risk facilities or specific measures to provide emergency response capability for high-risk facilities based on the results of the preliminary hazard analysis conducted under SS-IAMF#3.

There is a potential for exposure of high-risk facilities to the public and employees. However, impacts would be limited because the design of the Central Valley Wye alternatives includes effective measures to minimize the potential for exposure of HSR passengers and employees to high-risk facilities during operations. These design measures would prevent exposure of passengers or employees to risks associated with high-risk facilities.

CEQA Conclusion

The impact under CEQA would be less than significant to the public and employees because the design of the Central Valley Wye alternatives includes effective measures to avoid hazards related to incompatible uses and reduce the potential for exposure of HSR passengers and employees to high-risk facilities or other safety hazards. Therefore, CEQA does not require any mitigation.

Impact SS#12 Continuous Permanent Criminal and Terrorist Activity

Operations activities associated with the Central Valley Wye alternatives have the potential for criminal activity, such as theft and violence, to occur on the trains under all of the alternatives. In addition, terrorists could target the HSR tracks or trains with the intent to inflict mass casualties and disrupt transportation infrastructure. The potential for this permanent direct impact to occur would be the same under all of the Central Valley Wye alternatives because the same operational procedures and security measures would apply to each alternative. During the final design of the selected Central Valley Wye alternative, the construction contractor would perform threat and vulnerability assessments that would be used to establish provisions for the deterrence and detection of, as well as the response to, criminal or terrorist acts for HSR facilities and system operations (SS-IAMF#3). Specific provisions would include right-of-way fencing, intrusion detection, security lighting, security procedures and training, and closed-circuit televisions. Intrusion-detection technology could also alert security personnel to the presence of inert objects, such as debris from tall structures or derailed freight trains that could be caused by terrorist activity, and stop HSR operations to avoid collisions. The Authority would oversee implementation of the recommendations from the threat and vulnerability assessments during design and operations to minimize identified threats through application of intrusion control and surveillance measures to prevent unauthorized access. As outlined in the Authority's *Technical Memorandum: Safety and Security Management Plan California High-Speed Train Project* (Authority 2014a), the HSR system would also have a dedicated police unit that would address the ongoing security needs of the system and minimize security threats (SS-IAMF#2). In addition to minimizing the threat of criminal and terrorist acts, these measures would help deter and prevent suicide attempts. The security provisions implemented as part of the threat and vulnerability assessments and police presence on HSR facilities would be effective in minimizing the potential for theft, violence, and terrorism during operations and limit the exposure of passengers or employees to these threats for all Central Valley Wye alternatives.

CEQA Conclusion

The impact under CEQA would be less than significant because the design of the Central Valley Wye alternatives includes effective measures to minimize the potential for theft, violence, and terrorism during operations, and therefore would not result in a safety hazard during operations. Therefore, CEQA does not require any mitigation.

Impact SS#13 Continuous Permanent Safety Hazard to Schools

In the event of a train accident during operation of the Central Valley Wye alternatives, including derailment of a train during a seismic event or natural disaster, a safety hazard to schools could occur if the train were to leave the HSR right-of-way and collide with other structures, including schools, or people on adjacent properties. The hazards to schools in the event of a derailment of an HSR train would include the train colliding with a school structure or people in occupied areas of school property, which could only occur adjacent to the right-of-way and could only occur if train components leave the guideway as a result of a derailment incident.

As presented in Table 3.11-5, six schools are located within 0.25 mile of the Central Valley Wye alternatives. Specifically, four schools are located within the RSA for the SR 152 (North) to Road 19 Wye Alternative and two schools are located within each RSA for the Avenue 21 to Road 13 Wye, SR 152 (North) to Road 13 Wye, and SR 152 (North) to Road 11 Wye Alternatives. Two of the schools in the RSA of the SR 152 (North) to Road 19 Wye Alternative, Washington Elementary School and El Capitan High School, are in proximity to network upgrades, not the HSR tracks, and there would be no increased safety risk to these schools from operation of this alternative. Therefore, because the HSR tracks of all four alternatives would be located within 0.25 mile of two schools each, the potential for impacts on school safety from train derailment would be the same under all alternatives.

To prevent the risk of derailment and trains leaving the HSR right-of-way, the design of the Central Valley Wye alternatives includes physical elements, such as containment parapets, check rails, guard rails, and derailment containment, which would be used in specific areas with a high risk of or high impact from derailment. These areas include elevated guideways and approaches to conventional rail and roadway crossings. Derailment containment in the form of raised cable trough walls is provided in tunnels, trenches, and aerial structures which would keep the train within the right-of-way and upright in the event of a derailment. The risk of derailments from seismic events would also be minimized through incorporation of IAMFs. As described in Section 3.9, the Authority would require contractors to use the most recently updated Caltrans seismic design criteria in the design of any HSR structures supported in or on the ground (GEO-IAMF#3) to minimize to the greatest practical extent any potential movements that could lead to damage of HSR infrastructure or train derailment. In addition, the Authority would install an early warning control system to shut down HSR operations temporarily during or after a potentially damaging earthquake to minimize risks of derailment and injury to passengers or the nearby public, including at nearby schools (GEO-IAMF#4).

During the final design of the Central Valley Wye alternatives, the contractor would perform preliminary hazards assessment and threat and vulnerability assessments that would be used to identify potential derailment hazards and establish safety hazard minimization provisions involving HSR facilities and systems operations (SS-IAMF#3). Specific provisions would include right-of-way fencing, security lighting, security procedures as well as intrusion detection that would detect intrusion of vehicles, bicycles, pedestrians, or objects onto the HSR tracks. The Authority would apply measures to minimize the potential incidence and consequences of derailments, including application of design features (e.g., barriers) to minimize the potential for a derailed train to leave the guideway and affect school structures or individuals outside of the right-of-way. The incorporation of IAMFs would minimize the potential for train accidents, including derailment, that result in a safety hazard to nearby schools or structures on adjacent properties under all of the alternatives.

Additional discussions relating to schools and risks associated with children's health and safety are provided in the following sections of this Final Supplemental EIR/EIS: Section 3.2; Section 3.3; Section 3.4, Noise and Vibration; Section 3.5, Electromagnetic Fields and Electromagnetic

Interference; Section 3.12, Socioeconomics and Communities; and Appendix 3.12-C, Children's Health and Safety Risk Assessment.

CEQA Conclusion

The impact under CEQA would be less than significant to school safety because the design of the Central Valley Wye alternatives incorporates effective measures to contain the potential derailment of trains within the HSR right-of-way. These IAMFs would limit the potential exposure of schools and adjacent structures to HSR train accidents or derailments, and therefore would minimize the potential for exposure of people to a safety hazard during operations. Therefore, CEQA does not require any mitigation.

3.11.7 Mitigation Measures

All construction and operations impacts would be minimized or avoided. No mitigation measures are required.

3.11.8 Impacts Summary for NEPA Comparison of Alternatives

This section summarizes the impacts of the Central Valley Wye alternatives and compares them to the anticipated impacts of the No Project Alternative. Table 3.11-7 provides a comparison of the potential impacts of each of the Central Valley Wye alternatives, summarizing the more detailed information provided in Section 3.11.6. A comparison of the impacts on safety and security of the different Central Valley Wye alternatives follows Table 3.11-7.

As discussed in Chapter 2, under the No Project Alternative, development resulting from an increasing population in Merced and Madera Counties is anticipated to result in a continuation of recent development trends that have led to increased crime rates and increased demand for law enforcement and fire and emergency services. Development under the No Project Alternative would result in similar types of impacts on safety and security as the Central Valley Wye alternatives. Planned residential, commercial, industrial, recreational, transportation, and agricultural projects would lead to impacts on safety and security from changes in the landscape that could lead to increased vehicular traffic volume and corresponding increases in traffic hazards, decreased access and increased response times, increased demands to emergency response, increased exposure to site hazards, increased security risks, and increased criminal activity.

The Merced to Fresno Final EIR/EIS concluded that development of the HSR system would result in potential impacts on safety and security. With the exception of impacts on the demand for local emergency responses near rail stations and potential security impacts on the Valley State Prison for Women, which would not apply to the Central Valley Wye alternatives, impacts on safety and security analyzed in the Merced to Fresno Final EIR/EIS would be minimized or avoided to a negligible level of intensity by the project design elements. Implementing the Central Valley Wye alternatives could also result in impacts on safety and security resources from construction and operations activities; however, project design elements would likewise minimize or avoid potential impacts. The three SR 152 alternatives would result in additional safety benefits as a result of upgrades to SR 152 that would grade-separate cross traffic and minimize the potential for accidents along this highway.

The Central Valley Wye alternatives would incorporate IAMFs to minimize impacts on safety and security. These IAMFs would include safety and security plans to prevent, eliminate, or control hazards to an acceptable level of risk and design features for maintaining emergency vehicle access; protecting the safety and security of construction workers, employees and the public; conducting hazard, threat and vulnerability analyses; identifying, inspecting, abandoning and relocating oil and gas wells as necessary; and implementing plans to consider the safety of employees, passengers, and the public. The design of the Central Valley Wye alternatives would minimize or avoid impacts on emergency response, human health, safety, security, and property, and would prevent the potential for accidents. Overall, the four Central Valley Wye alternatives are not anticipated to result in impacts on safety and security that would require mitigation.

Table 3.11-7 Comparison of Central Valley Wye Alternative Impacts

Impacts	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Construction				
Emergency Services Impacts				
Impact SS#1: Temporary Interference with Emergency Response Times				
Number of temporary road closures	17	13	15	13
Detours (miles)	30	25	36	26
Temporary impacts on service ratios, response times, or other performance objectives for emergency services	All of the Central Valley Wye alternatives would minimize the impacts from temporary road closures such that temporary impacts on service ratios, response times, or other performance objectives for emergency services would be largely avoided.			
Impact SS#2: Permanent Interference with Emergency Response Times				
Number of permanent road closures	38	36	30	33
Permanent impacts on service ratios, response times, or other performance objectives for emergency services	All of the Central Valley Wye alternatives would minimize the impacts from permanent road closures such that permanent impacts on service ratios, response times, or other performance objectives for emergency services would be largely avoided.			
Community Safety and Security Impacts				
Impact SS#3: Temporary Exposure to Construction Site Hazards				
Temporary direct safety and security impacts associated with construction site hazards	All of the Central Valley Wye alternatives would have a similar potential for temporary safety and security impacts associated with construction site hazards. However, incorporation of IAMFs in the project design would minimize impacts from construction site hazards and accident risks that could compromise the safety, security, or health of workers or visitors.			
Impact SS#4: Temporary Motor Vehicle, Pedestrian, and Bicycle Safety Risks				
Temporary direct safety risks to motor vehicles, pedestrians, and bicyclists	All of the Central Valley Wye alternatives would incorporate IAMFs that would be effective in minimizing temporary safety risks to motorists, pedestrians, and bicyclists during construction.			
Impact SS#5: Permanent Motor Vehicle, Pedestrian, and Bicycle Safety Risks				
Number of overcrossings and undercrossings	24	29	28	24
Safety benefits to motorists on SR 152	Yes	Yes	No	Yes
Permanent benefits to motorists, pedestrians, and bicyclists	All of the Central Valley Wye alternatives would provide permanent benefits to motorist, pedestrian, and bicyclist safety from transportation improvements, although the greatest benefits would be realized under the three SR 152 alternatives which would grade-separate SR 152.			
Impact SS#6: Temporary Exposure to Landfill Hazards				
Number of landfills within 1,000 feet of alternative	0	1	1	0

Impacts	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Explosion risk to the public and construction site workers	No impact	Temporary explosion risk from landfills during construction avoided through incorporation of IAMFs	Temporary explosion risk from landfills during construction avoided through incorporation of IAMFs	No impact
Impact SS#7: Temporary Exposure to Valley Fever	All of the Central Valley Wye alternatives would avoid temporary increases to the exposure risk of Valley Fever.			
Operations and Maintenance				
Emergency Services Impacts				
Impact SS#8: Continuous Permanent Interference with Emergency Response				
Length of elevated track (miles) where emergency access and evacuation could be difficult	3.0	3.5	4.0	4.5
Permanent impacts on emergency response times and emergency access	All of the Central Valley Wye alternatives would avoid permanent impacts on emergency response times and emergency access.			
Community Safety and Security Impacts				
Impact SS#9: Continuous Permanent Exposure to Wildfire Hazards	All of the Central Valley Wye alternatives would avoid an increase in permanent exposure to wildfire hazards.			
Impact SS#10: Temporary and Continuous Permanent Interference with Airport Safety	No anticipated interference with airport safety under any of the Central Valley Wye alternatives.			
Impact SS#11: Continuous Permanent Exposure to High-Risk Facilities				
Number of PEC sites in vicinity of alternative	6	9	7	5
Permanent safety risk from continuous exposure to high-risk facilities	Potential for exposure of high-risk facilities would occur under all of the Central Valley Wye alternatives, although the risk would be limited because the alternatives include effective measures to minimize exposure potential.			
Impact SS#12: Continuous Permanent Criminal and Terrorist Activity	Potential risk for criminal and terrorist activity under all Central Valley Wye alternatives, although security measures would minimize any increased risk to passengers, employees, and the nearby public.			

Impacts	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Impact SS#13: Continuous Permanent Safety Hazard to Schools				
Number of schools within 0.25 mile of HSR tracks	2	2 (2 additional schools located with 0.25 mile of network upgrades but no increased safety hazards would occur)	2	2
Exposure of schools and adjacent structures to potential derailments and safety hazards	All of the Central Valley Wye alternatives would have limited potential exposure of schools and adjacent structures to permanent safety hazards.			

Source: Authority, 2019
HSR = high-speed rail
IAMF = impact avoidance and minimization feature
PEC = potential environmental concern

Construction activities could result in impacts on safety and security within the RSA, including the potential for increased emergency response times as a result of temporary and permanent road closures. The potential for temporary direct impacts on emergency response times caused by road closures and detours would be greatest under the Avenue 21 to Road 13 Wye Alternative (36 miles of detours) and least under the SR 152 (North) to Road 19 Wye Alternative (25 miles of detours). The potential for permanent impacts on emergency response times as a result of road closures would be greatest under the SR 152 (North) to Road 13 Wye Alternative (38 closures) and least under the Avenue 21 to Road 13 Wye Alternative (30 closures). However, in both cases, impacts under all of the alternatives would largely be avoided because the Central Valley Wye alternatives include effective coordination and emergency vehicle access procedures that would prevent emergency response time delays.

Construction of the Central Valley Wye alternatives could result in increased exposure of the public and construction workers to high-risk facilities, including oil and gas wells and landfills. There would be temporary and direct impacts associated with risks during construction on or near landfills and oil and gas wells. Impacts from landfills include their potential to release methane gas, which may present an explosion risk when exposed to flame or spark. The likelihood for this, however, is low because the landfills have existing gas mitigation control systems and monitoring programs. The safety threat associated with oil and gas wells includes the potential for a blowout as well as release of hazardous substances if a well head or well casing is hit during construction. The potential for impacts would be greatest under the alternative near the most landfills and oil and gas wells, namely SR 152 (North) to Road 19 Wye Alternative (1 landfill, 14 wells [1 idle, 13 plugged]). Under all of the Central Valley Wye alternatives, temporary or permanent exposure risks associated with landfills and oil and gas wells would be avoided through the incorporation of IAMFs.

The Central Valley Wye alternatives would result in temporary and permanent physical changes to the landscape that could compromise the safety of construction workers and the public, potentially resulting in accidental injuries or deaths. Construction of all alternatives would require major excavation, construction of elevated guideways and associated foundations, cut-and-cover tunneling, and installation of railroad systems. Construction of the alternatives would require temporary disruption of soil that could contain the fungus that causes Valley Fever. While there would be a difference in the amount of major excavation, construction of elevated guideways and

associated foundations, cut-and-cover tunneling, and overall ground disturbance, the exposure risk of the public or construction workers to safety risks are anticipated be similar among all of the Central Valley Wye alternatives. However, IAMFs would minimize impacts from construction site hazards and accident risks that could compromise the safety, security, or health of workers or visitors. Similarly, all of the Central Valley Wye alternatives would avoid temporary increases to the exposure risk of Valley Fever through outreach and coordination with local public health officials and preventive safety measures.

Under all of the Central Valley Wye alternatives, there would be the potential for beneficial impacts associated with permanent reductions in motor vehicle, pedestrian, and bicycle accidents and reduced response times caused by roadway improvements. Roadway improvements associated with the Central Valley Wye alternatives would minimize the potential for accidents by constructing grade-separated crossings and isolating the HSR system from all other traffic, which would provide faster access for emergency responders. These benefits would be greatest under the three SR 152 alternatives because they would involve constructing grade separations along SR 152, which would upgrade this transportation facility from highway to a freeway. During construction, impacts on motor vehicle, pedestrian, and bicycle safety would be largely avoided through incorporation of a construction safety transportation management plan, which includes effective measures to provide safe access across and in the vicinity of all Central Valley Wye alternatives.

Operations could result in potential safety and security impacts related to interference with emergency response, increased wildfire risk, exposure to high-risk facilities, increased risk of hazards to residences and schools, and nearby airports and private airstrips. Operations of the Central Valley Wye alternatives could result in inadvertent impacts on public, passenger, and employee health and safety, such as increased response time by law enforcement, fire protection, and emergency services personnel. Impacts could be greater where emergency access to HSR facilities is inhibited, such as on elevated track, the longest segments of which are under the SR 152 (North) to Road 11 Wye Alternative. However, compliance with emergency preparedness procedure regulations and the incorporation of SS-IAMF#2 would prevent interference with emergency response services under all alternatives.

Given the lack of combustible fuels in the surrounding landscape, low volume of flammable materials associated with an HSR system, and incorporation of fire and life safety programs, there would not be an increase in the risk of exposure of the public, passengers, or employees to wildfire hazards under any of the Central Valley Wye alternatives.

None of the Central Valley Wye alternatives is anticipated to permanently interfere with airport safety. During operations, a potential exists for safety and security risks at high-risk facilities, including PEC sites. Impacts would be greatest under the SR 152 (North) to Road 19 Wye Alternative given that there are the most PEC sites near this alternative (nine). The Avenue 21 to Road 13 Wye, SR 152 (North) to Road 13 Wye, and SR 152 (North) to Road 11 Wye Alternatives would have seven, six, and five PEC sites within each alternative project footprint, respectively. However, impacts would be limited because the design of the Central Valley Wye alternatives includes effective measures to minimize the potential for exposure of HSR passengers and employees to high-risk facilities during operations.

Operations activities associated with the Central Valley Wye alternatives have the potential for criminal activity, such as theft and violence, to occur on the trains under all of the alternatives. The security provisions incorporated as part of the threat and vulnerability assessments and police presence on HSR facilities would be effective in minimizing the potential for theft, violence, and terrorism during operations and limit the exposure of passengers or employees to these threats for all Central Valley Wye alternatives.

The potential for a train derailment to pose a safety risk to schools and adjacent structures would be the same under all alternatives because the HSR tracks of all alternatives are in proximity to two schools each. The incorporation of IAMFs would minimize the potential for train accidents, including derailment, to result in a safety hazard to nearby schools or structures on adjacent properties under all of the alternatives.

3.11.9 CEQA Significance Conclusions

Table 3.11-8 provides a summary of the CEQA determination of significance for all construction and operations impacts on emergency services and community safety and security discussed in Section 3.11.6.3. If there are differences in impacts before or after mitigation between the four Central Valley Wye alternatives, they are noted in the table. Where there is no difference in the CEQA level of significance before and after mitigation for a particular impact, the level of significance for that impact is the same for all Central Valley Wye alternatives.

Table 3.11-8 CEQA Significance Conclusions for Safety and Security for the Central Valley Wye Alternatives

Impact	CEQA Level of Significance before Mitigation	Mitigation Measures	CEQA Level of Significance after Mitigation
Construction			
Emergency Services Impacts			
Impact SS#1: Temporary Interference with Emergency Response Times	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Impact SS#2: Permanent Interference with Emergency Response Times	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Community Safety and Security Impacts			
Impact SS#3: Temporary Exposure to Construction Site Hazards	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Impact SS#4: Temporary Motor Vehicle, Pedestrian, and Bicycle Safety Risks	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Impact SS#5: Permanent Motor Vehicle, Pedestrian, and Bicycle Safety Risks	No impact for all alternatives	No mitigation measures are required	Not applicable
Impact SS#6: Temporary Exposure to Landfill Hazards	No impact for the following Central Valley Wye alternatives: SR 152 (North) to Road 13 Wye Alternative SR 152 (North) to Road 11 Wye Alternative	No mitigation measures are required	Not applicable
	Less than significant for the following Central Valley Wye alternatives: SR 152 (North) to Road 19 Wye Alternative Avenue 21 to Road 13 Wye Alternative	No mitigation measures are required	Not applicable
Impact SS#7: Temporary Exposure to Valley Fever	Less than significant for all alternatives	No mitigation measures are required	Not applicable

Impact	CEQA Level of Significance before Mitigation	Mitigation Measures	CEQA Level of Significance after Mitigation
Operations			
Emergency Services Impacts			
Impact SS#8: Continuous Permanent Interference with Emergency Response	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Community Safety and Security Impacts			
Impact SS#9: Continuous Permanent Exposure to Wildfire Hazards	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Impact SS#10: Temporary and Continuous Permanent Interference with Airport Safety	No impact for all alternatives	No mitigation measures are required	Not applicable
Impact SS#11: Continuous Permanent Exposure to High-Risk Facilities	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Impact SS#12: Continuous Permanent Criminal and Terrorist Activity	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Impact SS#13: Continuous Permanent Safety Hazard to Schools	Less than significant for all alternatives	No mitigation measures are required	Not applicable

Source: Authority, 2019