

3.11 Safety and Security

3.11.1 Introduction

This section provides details on safety issues related to construction and operation of the six Build Alternatives, including the measures and regulations in place or that would be implemented to keep employees, passengers and the general public safe from High-Speed Rail (HSR)-related functions. This section also considers security issues that could result from criminal acts that could negatively affect HSR operation and the ability of emergency responders to respond to incidents. Additional details on safety and security are provided in the following resource sections of this Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS):

- Section 3.2, Transportation, evaluates construction and operations changes from the Build Alternatives on safety from automobile, pedestrian, and bicycle traffic and covers safety hazards from transportation.
- Section 3.3, Air Quality and Global Climate Change, evaluates impacts of building the Build Alternatives on safety from air emissions, such as air toxics and fugitive dust emissions and covers safety hazards from air emissions such as air toxics.
- Section 3.5, Electromagnetic Fields and Electromagnetic Interference, evaluates impacts of construction and operations of the Build Alternatives on human health from electromagnetic fields and electromagnetic interference.
- Section 3.6, Public Utilities and Energy, evaluates impacts of construction on utilities, energy, water infrastructure (e.g., water supply, stormwater treatment). Additionally, this section addresses impacts on natural gas and petroleum fuel pipelines in the context of safety and security.
- Section 3.8, Hydrology and Water Resources, evaluates the impacts of building the Build Alternatives related to changes in flood flows and flood risk.
- Section 3.9, Geology, Soils, Seismicity and Paleontological Resources, evaluates the impacts of building the Build Alternatives on seismicity and geotechnical resources and addresses seismic and geotechnical hazards, including seismically induced dam failure.
- Section 3.10, Hazardous Materials and Wastes, evaluates impacts of construction of the Build Alternatives on safety related to hazardous materials and wastes, such as the use of hazardous materials or exposure to soil and groundwater contamination. This section addresses safety issues to hazardous materials and wastes from use or exposure to soil and groundwater contamination.

In addition, the following appendices in Volume 2 of this Draft EIR/EIS provide more detailed information:

- Appendix 2-B, Railroad Crossings, provides railroad crossing locations for each Build Alternative.
- Appendix 2-D, Applicable Design Standards, lists relevant design standards for the Palmdale to Burbank Project Section.

Safety and Security

The safe and secure operation of the California HSR System is of highest priority. Thus, the system is designed to generally be grade-separated as well as fully access-controlled. An access-controlled system helps prevent entry into the corridor by unauthorized vehicles, people, animals, and objects. The Palmdale to Burbank Project Section would conform to the latest federal requirements regarding transportation security and safety. During operations, the project would abide by safety and security plans developed by the California High-Speed Rail Authority in cooperation with the Federal Railroad Administration and Transportation Security Administration.

- Appendix 2-E, Impact Avoidance and Minimization Features (IAMF), lists IAMFs included as applicable in each of the Build Alternatives for purposes of the environmental impact analysis.
- Appendix 2-G, Emergency and Safety Plans, lists all relevant safety and security plans within the resource study area (RSA).
- Appendix 2-H, Regional and Local Policy Consistency Analysis, provides a Regional and Local Policy Consistency Table, which lists the safety and security goals and policies applicable to the Palmdale to Burbank Project Section and notes the Build Alternatives consistency or inconsistency with each.
- Appendix 3.1-B, United States Forest Service (USFS) Policy Consistency Analysis, assesses the consistency of the Palmdale to Burbank Project Section with applicable laws, regulations, plans, and policies governing proposed uses and activities within the Angeles National Forest (ANF), including the San Gabriel Mountains National Monument (SGMNM).
- Appendix 3.11-A, Safety and Security Data, provides data used in the analysis of impacts on safety and security.
- Appendix 3.11-B, Existing and Proposed Railroad Crossing Definitions, lists the existing and proposed railroad crossings in relation to the Palmdale to Burbank Project Section Build Alternatives.

Safe and secure operation of the California HSR System is of the highest importance, as described in the *Final Program Environmental Impact Report/Environmental Impact Statement for the Proposed California High-Speed Train System* (2005 Statewide Program EIR/EIS) (California High-Speed Rail Authority [Authority] and Federal Railroad Administration [FRA] 2005). The HSR infrastructure (e.g., mainline tracks and maintenance and storage facilities) would be designed to prevent access by unauthorized vehicles, people, animals, and objects. The California HSR System would also include appropriate barriers (fences and walls) and state-of-the-art communication, access control, and monitoring and detection systems. In addition, it would conform to the latest federal requirements regarding transportation safety and security.

California HSR System operation would follow systemwide safety and security plans developed by the Authority in cooperation with the FRA and the Transportation Security Administration (TSA). These plans include the following:

- A Safety and Security Management Plan (SSMP), including a Safety and Security Certification Program, which defines safety and security activities during design and construction.
- A Safety Program Plan to address safety and the integration with emergency response as they relate to the day-to-day operation of the system.
- A Security Program Plan describing the security strategy for protecting the California HSR System's operation, including security at the stations, within the trackwork right-of-way, and onboard trains (see Section 3.11.2, Laws, Regulations, and Orders).
- An Emergency Management Plan and a Passenger Train Emergency Preparedness Plan that describe the response under emergency situations.
- A Threat and Vulnerability Assessment for security and a Preliminary Hazard Analysis (PHA) for safety. These assessments have been developed to produce comprehensive design criteria for safety and security requirements mandated by local, state, or federal regulations and industry best practices.

- A Fire and Life Safety and Security Plan and a System Security Plan (SSP).¹ Under federal and state guidelines and criteria, the Fire and Life Safety and Security Plan addresses the integration of the California HSR System with the emergency response community.

The overall safety and reliability of the California HSR System would be achieved by the application of proven technical standards commensurate with the desired level of performance. Based on the long-term operating success of European and Asian HSR systems, the California HSR System design considers and adapts to the existing European and Asian process and standards with regard to speed and technical issues with high-speed vehicles.

Given its complex and high-speed operating environment, a high-speed railway must be developed from the beginning as a system, integrating elements to work together in a safe, efficient, and reliable manner. An HSR system design approach considers the physical and operations relationships among the various subsystems (infrastructure, rolling stock, train controls, electrification, and operations and maintenance) and optimizes the physical design requirements with operations and maintenance activities to deliver a high level of safety and reliability. As a result, the Authority's technical standards address and integrate an overall set of guiding principles or system requirements consistent with American, European, and Asian systems to provide for the safety, security, and reliability aspects of the California HSR System.

Design criteria would address FRA safety standards, TSA security guidance, and industry safety standards and requirements, as well as a possible Petition for Rule of Particular Applicability that provides specifications for key design elements for the California HSR System. The FRA is developing safety requirements for HSRs for use in the U.S. and will require that the HSR safety regulations be met prior to revenue service operations.

3.11.1.1 Definition of Resources

The World Bank distinguishes between transport safety and security (The World Bank 2002). The following are definitions for resources and facilities related to safety and security analyzed in this section.

- **Safety**—Safety is defined as vulnerability to accidental injury (usually involving at least one vehicle as the instrument causing the injury). Therefore, safety resources are components of the built environment that contribute to the safety of a place (e.g., barriers, grade separations, sidewalks, bicycle lanes).
- **Security**—Security is defined as vulnerability to intentional criminal or antisocial acts suffered by individuals taking trips. Security is provided by something other than the built environment and ensures the safety of a place from intentional criminal acts (e.g., security guards, bag checks, surveillance cameras).
- **Emergency Services**—Emergency services include emergency response by fire, law enforcement, and emergency services to fire, seismic events, or other emergency situations.
 - Fire Protection Services—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 protection of railroad property, personnel, passengers, and cargo (49 Code of Federal Regulations [C.F.R.] Part 207).

¹This SSP was in development as of August 2020.

- 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 adopted by counties and cities within the RSA and outline procedures for operations during emergencies such as earthquakes, floods, fires, and other natural disasters; hazardous material spills; transportation emergencies; civil disturbances; 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 project construction, and California 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.
- **Wildland Fires**—Wildland fires have historically posed a threat to communities in Southern California and could expose people or structures to a significant risk of loss, injury, or death, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildfires.

3.11.2 Laws, Regulations, and Orders

3.11.2.1 Federal

Federal Railroad Administration Procedures for Considering Environmental Impacts (64 Federal Register 28545)

These FRA procedures state that an EIS should consider possible impacts on public safety.

Rail Safety Improvement Act of 2008 (Public Law 110-432)

The Rail Safety Improvement Act reauthorized the FRA to oversee the nation's rail safety program. One aim of the statute is to improve conditions of rail bridges and tunnels. The Rail Safety Improvement Act also requires that railroads implement positive train control (PTC) systems by the end of 2015 on certain rail lines, with an extension to 2018 that also includes a provision under which railroads could petition the FRA for an extra 2 years to implement the system. PTC infrastructure consists of integrated command, control, communications, and information systems for controlling train movements that improve railroad safety by significantly reducing the probability of collisions between trains, casualties to roadway workers and damage to their equipment, and over-speed accidents.

United States Code on Railroad Safety (49 United States Code [U.S.C.] 20101 et seq.)

This code contains a series of statutory provisions pertaining to the safety of railroad operations.

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

This regulatory program requires commuter and intercity passenger railroads to develop and implement an SSP to improve the safety of their operations. An SSP 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.

The effective date of 49 C.F.R. Part 270 is December 4, 2017, as indicated in the *Federal Register* (82 Fed. Reg. 56744):

On August 12, 2016, FRA published a final rule requiring commuter and intercity passenger railroads to develop and implement an SSP to improve the safety of their operations. See 81 FR 53850. On February 10, 2017, FRA stayed the SSP final rule's requirements until March 31, 2017, consistent with the new Administration's guidance issued January 20, 2017, intended to provide the Administration an adequate opportunity to review new and pending regulation (82 FR 10443, Feb. 13, 2017). To provide time for that review, FRA needs to extend the stay until May 22, 2017.

FRA extended the stay until June 5, 2017 (82 FR 23150, May 22, 2017) and extended the stay until December 4, 2018 (82 FR 56744, November 30, 2017). FRA's implementation of this action without opportunity for public comment is based on the good cause exceptions in 5 U.S.C. 553(b)(B) and 553(d)(3), in that seeking public comment is impracticable, unnecessary and contrary to the public interest. The delay in the effective date until May 22, 2017, is necessary to provide the opportunity for further review and consideration of this new regulation, consistent with the new Administration's January 20, 2017 guidance. Given the imminence of the effective date of the "System Safety Program" final rule, seeking prior public comment on this temporary delay would be impractical, as well as contrary to the public interest in the orderly promulgation and implementation of regulations (82 FR 14476; 82 FR 26359).

Federal Railroad Administration—Passenger Equipment Safety Standards; Standards for Alternative Compliance and High-Speed Trainsets (49 C.F.R. Parts 229, 231, 236, and 238)

In 2018, FRA amended its passenger equipment safety standards using a performance-based approach to adopt new and modified requirements governing the construction of conventional and high-speed passenger rail equipment. This final rule adds a new tier of passenger equipment safety standards (Tier III) to facilitate the safe implementation of nationwide, interoperable high-speed passenger rail service at speeds up to 220 miles per hour (mph). While Tier III trainsets must operate in an exclusive right-of-way without grade crossings at speeds above 125 mph, these trainsets can share the right-of-way with freight trains and other tiers of passenger equipment at speeds not exceeding 125 mph. The final rule also establishes crashworthiness and occupant protection performance requirements as alternatives to those currently specified for Tier I passenger trainsets. The Tier III requirements and Tier I alternative crashworthiness and occupant protection requirements remove regulatory barriers and enable use of new technological designs, allowing a more open U.S. rail market. Additionally, the final rule increases from 150 mph to 160 mph the maximum speed for passenger equipment that complies with FRA's Tier II requirements.

In accordance with federal regulations (49 C.F.R. Part 239), Caltrain prepares and periodically updates an emergency preparedness plan (*Caltrain Passenger Train Emergency Preparedness Plan*), most recently updated in February 2013. The plan covers the following topics related to emergencies: communications, employee training and qualifications, joint operations, special circumstances, liaison with emergency responders, on-board emergency equipment, passenger safety information, handling passengers with disabilities, passenger train emergency simulations, debriefing and critiques, emergency exits, and operation (efficiency) tests (Peninsula Corridor Joint Powers Board [PCJPB] 2015).

Department of Homeland Security/Transportation Security Administration (49 C.F.R. Part 1580)

This regulation codifies the TSA's inspection program. It also includes security requirements for freight railroad carriers; intercity, commuter, and short-haul passenger train service providers; rail transit systems; and rail operations at certain fixed-site facilities that ship or receive specified hazardous materials by rail.

Transportation Security Administration—Security Directives for Passenger Rail

Security Directive RAILPAX-04-01 and RAILPAX-04-02 require rail transportation operators to implement certain protective measures, report potential threats and security concerns to the TSA, and designate a primary and alternate security coordinator.

Emergency Planning and Community Right-to-Know Act (42 C.F.R. Part 116)

The objectives of the Emergency Planning and Community Right-to-Know Act are to allow state and local planning for chemical emergencies, provide for notification of emergency releases of chemicals, and address a community's right to know about toxic and hazardous chemicals.

Federal Aviation Administration Rotocraft External-Load Operations and Operation Rules (14 C.F.R. Part 133 and Section 133.33)

Helicopter external lift operations are regulated under 14 C.F.R. Part 133, Rotocraft External-Load Operations, and Section 133.33 Operation Rules. The Federal Aviation Administration (FAA) 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 must specify the following:

- Pilot qualifications and experience (pilots must be qualified in accordance with 14 C.F.R. 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 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 Wildlife Coordination Group 2016), adapted to meet the project's requirements
- Emergency procedures in the event of mechanical failure

The plan would be required to show the exact routes that the helicopter would use and the proximity of the routes to 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, 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.

Federal Aviation Administration 14 C.F.R. Part 77

Under FAA Federal Aviation Regulations (FAR) Part 77 standards for determining obstructions to airspace, an existing object, including a mobile object, would be an obstruction to air navigation if it penetrates the surface of a takeoff and landing area of an airport or any imaginary surface established for the airport. 14 C.F.R. 77.24); 14 C.F.R. 77.7 establishes that notification must be submitted to the FAA a minimum of 45 days prior to the proposed commencement of construction.

The Federal Land Policy and Management Act of 1976 (Public Law 94-579)

The Federal Land Policy and Management Act of 1976, as amended in October 2001, provides for the protection and management of public lands administered by the Bureau of Land Management and lands under the management of USFS. With regard to safety and security, the act regulates the closure to public use of Bureau of Land Management and USFS lands, including the ANF and SGMNM, as well as the designation of right-of-way within such lands.

National Fire Protection Association (NFPA) Standard 130

NFPA Standard 130, “Safety Standard for Fixed Guideway Transit and Passenger Rail Systems,” specifies the latest fire protection and life safety requirements for underground, surface, and elevated fixed-guideway transit and passenger rail systems.

United States Forest Service Authorities

Safety and security within the ANF, including the SGMNM, is guided by several federal laws and their implementing regulations, as well as policies, plans, and orders. The primary laws governing safety and security are the Federal Land Policy and Management Act, the National Forest Management Act, and the Antiquities Act of 1906. Appendix 3.1-B, USFS Policy Consistency Analysis, provides an analysis of the consistency of the six Build Alternatives with these laws, regulations, policies, plans, and orders.

3.11.2.2 State

California Government Code Section 65302

California Government 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 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 relate to identified fire and geologic hazards.

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 located in Class 1 railroad yards in California are inspected no less frequently than every 120 days, and that branch and main line tracks are inspected no less frequently than every 12 months. The CPUC is required to conduct focused inspections of railroad yards and track either in coordination with the FRA or as the CPUC determines necessary. The focused inspection program targets railroad yards and tracks 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 public utilities to construct, maintain, and operate its line, plant, system, equipment, apparatus, tracks, and premises in such a manner as to promote and safeguard the health and safety of its employees, its passengers, its 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 signaling block systems among other systems of signaling. The CPUC may establish uniform or other standards of construction and equipment and may require the performance of other acts which the health or safety of its employees, its passengers, its customers, or the public may request.

California Public Utilities Code Section 7661 and 7665 (Local Community Rail Security Act of 2006)

Under California Public Utilities Code Sections 7661 and 7665 (the Local Community Rail Security Act of 2006), every railroad corporation operating in California is required to develop, in consultation with, and with the approval of, the California Emergency Management Agency, a protocol for rapid communications with the agency, the California Highway Patrol (CHP), and designated county public safety agencies in an endangered area if there is a runaway train or any other uncontrolled train movement that threatens public health and safety. Railroad corporations are required to promptly notify the California Emergency Management Agency, the CHP, and

designated county public safety agencies, through a communication to the Warning Center of the California Emergency Management Agency, if there is a runaway train or any other uncontrolled train movement that threatens public health and safety, in accordance with the railroad corporation's communications protocol.

California Public Utilities Code Section 315

Under California Public Utilities Code Section 315 the CPUC shall investigate the cause of all accidents occurring within California upon the property of any public utility or directly or indirectly arising from or connected with its maintenance or operation, resulting in loss of life or injury to person or property and requiring, in the judgment of the CPUC, investigation by it, and may make such order or recommendation with respect thereto as in its judgment seems just and reasonable. Neither the order nor recommendation of the commission nor any accident report filed with the commission shall be admitted as evidence in any action for damages based on or arising out of such loss of life, or injury to person or property. Every public utility shall file with the CPUC, under such rules as the commission prescribes, a report of each accident so occurring of such kinds or classes as the commission from time to time designates.

California Public Utilities Code Sections 309, 315, 765, 768, 7710 to 7727, 7661, and 7665 et seq. (Railroad Safety and Emergency Planning and Response)

Under these codes, the CPUC is required to adopt safety regulations and report sites on railroad lines that are deemed hazardous within California. The Rail Accident Prevention and Response Fund was created in an effort to support prevention regulations financially through fees paid by surface transporters of hazardous materials. In addition, the Railroad Accident Prevention and Immediate Deployment Force was created to provide immediate on-site response in the event of a large-scale unauthorized release of hazardous materials. Modifications of existing highway-rail crossings require CPUC authorization, and temporarily impaired clearance during construction requires application to the CPUC and notice to railroads.

California Public Resources Code (Title 14 and Title 19)

The California Department of Forestry and Fire Protection (CAL FIRE) implements fire safety regulations in the state. The California Public Resources Code (PRC) (Title 14 and Title 19) includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify the fire suppression equipment that must be provided on site for various types of work in fire-prone areas (CAL FIRE 2016).

CAL FIRE has rated areas within California for their potential fire hazards. The risk of wildland fires is related to a combination of factors, including winds, temperatures, humidity levels, and fuel moisture content. Of these four factors, wind is the most crucial. Steep slopes also contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Where there is easy human access to dry vegetation, fire hazards increase because of the greater chance of human carelessness.

CPUC General Order No. 176

CPUC General Order No. 176, Rules for Overhead 25kV AC Railroad Electrification Systems for High-Speed Rail System became effective on March 26, 2015. This order identifies uniformity safety requirements governing the design, construction, installation, operation and maintenance of 25-kilovolt (kV) alternating-current electrification systems built in the state of California and serving a passenger system capable of operating at speeds of 150 mph or higher, located in dedicated right-of-way with no public highway/rail at-grade crossings and in which freight operations do not occur.

CPUC General Order No. 164-E Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems and Federal Transit Administration Rail Fixed Guideway Systems State Safety Oversight (49 C.F.R. Part 674)

CPUC General Order 164-E and 49 C.F.R. Part 674 require CPUC, as a designated State safety oversight agency, to review each rail transit agency's system safety and security program at a minimum of once every 3 years. The purpose of these triennial reviews is to verify compliance and evaluate the effectiveness of each rail transit agency's System Safety Program Plan (SSPP) and a Security and Emergency Preparedness Plan (SEPP) to assess the level of compliance with CPUC General Order 164-E and other CPUC safety and security requirements (CPUC 2018).

California Emergency Services Act (California Government Code 8550 et seq.)

The Emergency Services Act supports the State's responsibility to mitigate adverse effects of natural, human-produced, or war-caused emergencies that threaten human life, property, and environmental resources of the state. The act aims to protect human health and safety and to preserve the lives and property of the people of the state. The act provides the Governor's Office of Emergency Services with the authority to prescribe powers and duties supportive of the act's goals. In addition, the act authorizes the establishment of local organizations to carry out the provisions through necessary and proper actions.

California Public Resources Code Section 21096

The California PRC requires that the California Department of Transportation (Caltrans), Division of Aeronautics, *California Airport Land Use Planning Handbook* (Caltrans 2002) be used as a technical resource to assist in the preparation of an EIR for a project situated within the boundaries of an airport land use compatibility plan. The Airport Land Use Planning Handbook supports the State Aeronautics Act (California PRC Section 21670 et seq.), providing compatibility planning guidance to airport land use commissions, their staffs and consultants, the counties and cities having jurisdiction over airport area land uses, and airport proprietors.

California Public Resources Code Section 21098

California PRC 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 21674.7

California Public Utilities Code Section 21674.7 establishes procedures for airport land use planning, including developing airport comprehensive land use plans and defining airport influence areas, which are composed of the areas surrounding the airport that are affected by noise, height, and safety considerations. An airport influence area is defined as a feature-based boundary around the airport within which all actions, regulations, and permits must be evaluated by local agencies to determine how the comprehensive land use plan policies may affect the proposed development. This evaluation is used to determine whether the development meets the conditions specified for height restrictions and noise and safety protection to the public.

Gas Monitoring and Control at Active and Closed Disposal Sites (Cal. Code Regs. Title 27, Section 20917 et seq.)

California Code of Regulations (Cal. Code Regs.) Title 27, Section 20917 et seq. sets forth the performance standards and the minimum substantive requirements for landfill gas monitoring and control as they relate 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 due to the disposal of solid waste.

Power Line Safety and Fire Protection (Cal. Code Regs. Title 14, Section 1250)

Cal. Code Regs. 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, as well as electric conductor clearance standards, and specifies when and where the standards apply.

Construction Safety Orders (Cal. Code Regs. Title 8, Section 1502 et seq.)

The California Occupational Safety and Health Administration (Cal-OSHA) oversees Cal. Code Regs. Title 8, which regulates workplace and construction worksite safety throughout California. Cal. Code Regs. Title 8 Section 1502 requires compliance with standard procedures to prevent construction worksite accidents and requires a written workplace Injury and Illness Prevention Program to be in place (Cal-OSHA 2013a, 2013b).

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

The *Strategic Fire Plan for California* ((CAL FIRE) 2018) 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 (FHSZ).

California High-Speed Rail Program***Safety and Security Management Plan***

Safety and security are priority considerations in the planning and execution of work activities for construction of the California HSR System. The system safety program and SSP for development and operations of HSR are described in the Authority’s SSMP. Based on Federal Transit Administration guidelines for the safe and secure development of major capital projects, the SSMP includes the Authority’s Safety and Security Policy Statement, roles and responsibilities for safety and security across the system, the program for managing safety hazards and security threats, safety and Security Certification Program requirements, and construction safety and security requirements. The Authority’s SSMP is described in Agreement No. HSR 13-06, Book 3, Part B, Subpart 6, SSMP, July 2013 (Authority 2014). Revision 2 of the SSMP is dated June 30, 2016.

A hierarchy of controls is applied when considering the management of identified hazards, as follows:

1. Avoidance
2. Elimination
3. Substitution
4. Engineering controls
5. Warnings
6. Administrative controls
7. Personal protection equipment

The safety and security of HSR passengers, employees, and the surrounding communities are ensured through the application of risk-based system safety and system security programs that identify, assess, avoid, and mitigate hazards for the California HSR System. Using domestic and international regulations, guidance, and industry best practices, the objective of the California HSR System safety and system security programs are to adequately and consistently apply risk-based hazard mitigation measures.

The California HSR System alignment would be fully access-controlled, meaning that the public would be able to access the system only at the station platforms. Access-control barriers and railway/roadway vehicle barriers along the right-of-way would prevent intrusion into the right-of-way. HSR trainsets and fixed infrastructure would employ the latest safety features and designs to enable the trains to stay upright and in-line in the event of a derailment. ATC systems would provide additional protection against collisions, derailments, outside hazards such as intrusions into the right-of-way, earthquakes, and severe weather conditions. The HSR guideway, stations, and associated facilities would include fire and life safety infrastructure (including fire and smoke prevention and control); security and communications systems; and features to manage adjacent hazards from electrical and other utilities, hazardous materials facilities, oil and gas wells, and wind turbines. Appropriate setbacks and access controls for adjacent facilities or areas underneath elevated structures, based on existing regulations, guidance, or site-specific analysis, would maintain the safety and security of both the California HSR System operations and the adjacent communities.

The Authority will require the SSMP for the Palmdale to Burbank Project Section extent to be developed and implemented prior to project construction. The SSMP applies to design, construction, and testing and startup of the California HSR System, but it does not apply to its revenue operations. The SSMP would lead to the development of an SSP and an SEPP that would apply to operations of the California HSR System extent and that would govern the safety and security for the operating system (Authority 2013). The Authority will require the SSP and the SEPP to be developed and implemented prior to commencement of revenue service for the California HSR System in accordance with FRA regulations (49 C.F.R. Part 207) that require the application of an SSP for passenger rail operations.²

As part of the SSP, the Authority will implement a risk-based hazard management program and risk-based hazard analysis to identify hazards and resulting risks on the HSR operating system and apply the results of the hazard analysis to develop and implement methods to mitigate or eliminate the identified hazards and risks to the extent practicable. The SSP would describe the procedures, processes, and programs the Authority has implemented to support the safety and security goals of the SSP. These procedures, processes, and programs would include a maintenance, inspection, and repair program; a rules compliance and procedures review program; an employee and contractor training program; and a public safety outreach program.

Technical Memorandum 2.8.1, Safety and Security Design Requirements for Infrastructure Elements

Technical Memorandum 2.8.1 (Authority 2013a) identifies the safety and security requirements and standards for infrastructure elements for the HSR program. Key elements include:

- Safety and security design strategies to be employed
- Access/egress requirements for at-grade, raised (embankment), aerial, tunnel, and trench alignment configurations
- Fire and life safety and security infrastructure for stations, tunnels, and support facilities, including fire and smoke prevention and mitigation
- Access control and facility security requirements
- Adjacent hazard requirements, including railroads, roadways, utilities, hazardous materials facilities, oil and gas wells, and wind turbines
- Other design requirements, including intrusion protection strategies, utilities, third parties, electrical hazards, and communications

² The effective date of 49 C.F.R. Part 270 is December 4, 2017, as indicated in 82 Fed. Reg. 26359, June 7, 2017.

3.11.2.3 Regional and Local

Each of the general plans included in Table 3.11-1 contains a safety element per the requirements of California Government Code Section 65302 et seq. In addition, many of the jurisdictions within the RSA have separate emergency plans, particularly local hazard mitigation plans (see Table 3.11-3).

Table 3.11-1 summarizes the safety- and security-related portions of the relevant general and specific plans within the Palmdale to Burbank Project Section RSA. Plans applicable to the Palmdale Subsection and Maintenance Facility are provided for context.

Table 3.11-1 Regional and Local Plans and Policies Analysis Summary

Jurisdiction	General Plans and Other Plans
City of Lancaster	
City of Lancaster General Plan (2009)	The City of Lancaster General Plan includes a Plan for Public Health and Safety. This consists of an evaluation of relevant natural and human-made hazards and provides a program to reduce associated risks. The plan addresses the following issues: geology and seismicity, flooding and drainage, noise, air installation land use compatibility, hazardous materials, crime prevention and protection services, fire prevention and suppression services, disaster preparedness, and emergency medical facilities.
City of Palmdale	
Palmdale General Plan (1993)	The Palmdale General Plan acknowledges a number of natural and human-made hazards which constrain development. The Safety Element of the General Plan provides a comprehensive risk management program to serve as a guide for the day-to-day operations decisions of City staff and seeks to eliminate or reduce the risks to public safety through planning for the prevention of hazardous situations and for the provision of adequate emergency services.
City of Palmdale Avenue S Corridor Area Plan (1998)	In addition to prescribing land use patterns that foster a cohesive neighborhood with adequate circulation and infrastructure, this plan seeks to protect public safety from seismic activity and other hazards, including those associated with natural gas pipelines. The plan also establishes guidelines for adequate provision of fire protection and law enforcement.
Palmdale Municipal Code (2020)	Chapter 2.28: Civil Defense and Disasters of the Palmdale Municipal Code provides for the preparation and execution of plans for the protection of persons and property within the city in the event of an emergency; the direction of the emergency organization; and the coordination of the emergency functions of the city with other public agencies, corporations, organizations and private persons.
City of Los Angeles	
City of Los Angeles General Plan (1996)	This Safety Element provides a contextual framework for understanding the relationship between hazard mitigation, response to a natural disaster, and initial recovery from a natural disaster. As such, the element includes goals and policies related to hazard mitigation, emergency response, and disaster recovery. The Safety Element does not address police matters except in relation to natural disasters.

Jurisdiction	General Plans and Other Plans
City of Los Angeles Municipal Code (2020)	Chapter 5: Public Safety and Protection of the City of Los Angeles Municipal Code addresses police and special officers (Article 2), public hazards (Article 6), and fire protection and prevention (Article 7).
Arleta-Pacoima Community Plan (1996)	The Arleta Pacoima Community Plan promotes an arrangement of land uses, streets, and services which will encourage and contribute to the physical health and safety of the people who live and work in the community. The plan is also intended to guide development to create a healthful and pleasant environment. Specifically, this plan addresses safety concerns related to the proximity of trains to the population.
Sunland–Tujunga–Lake View Terrace –Shadow Hills–East La Tuna Canyon Community Plan (1997)	This community plan establishes policies to improve safety and security in parking areas, commercial areas, and areas where industrial and residential areas are adjacent. The plan also seeks to establish a comprehensive fire and life safety program.
Sun Valley–La Tuna Canyon Community Plan (1999)	This community plan establishes goals and policies that seek to improve safety for pedestrians and drivers in commercial areas and where industrial and residential areas are adjacent. This plan also seeks to establish a comprehensive fire and life safety program. Another goal of the plan is to set aside enough open space in balance with new development to serve the health and safety needs of the community.
Sylmar Community Plan (1997)	This community plan supports the creation of a safe atmosphere for pedestrians, bicyclists, and equestrians. The plan also specifies a land use plan for avoiding damage caused by natural disasters such as wildfires, mudslides, and flooding.
City of Burbank	
Burbank 2035 General Plan (2013)	The Safety Element of Burbank’s 2035 General Plan provides tools to address threats like natural and human-caused hazards. The element is meant to guide future planning decisions that must be considered in the context of natural hazards, such as earthquakes and floods, as well as the provision of police, fire, and emergency medical services.
Burbank Municipal Code (2020)	Chapter 2: Disasters, provides for the preparation and execution of plans for the protection of persons and property within the city of Burbank in the event of an emergency; the direction of the emergency organization; and coordination of the emergency functions of the City with all other agencies, corporations, organizations, and affected private persons.
City of Burbank Multi-Hazard Functional Plan (2009)	This plan addresses the City’s planned response to emergencies associated with natural disasters and technological incidents, including both peacetime and wartime nuclear defense operations.

Jurisdiction	General Plans and Other Plans
Los Angeles County	
Los Angeles County General Plan 2035 (2015)	The Safety Element of this plan addresses limited aspects of human-made disasters, such as hazardous waste and materials management. In particular, the plan addresses those aspects related to seismic events, fires, and floods.
Antelope Valley Area Plan (2015)	This area plan includes a policy framework for the preservation of public health, safety, and welfare through identification of natural and environmental hazards, including noise, seismic, fire, and airborne emissions, and designation of land uses in an appropriate manner to mitigate these impacts.

Sources: City of Burbank, 2009b, 2013, 2020; City of Lancaster, 2009; City of Los Angeles, 1996, 1997a, 1997b, 1999; City of Palmdale, 1992, 1993, 1998, 2007, 2020; Los Angeles County, 2015a; 2015b

Airport Plans

Airport master plans and compatibility plans provide guidance for land use and facilities planning that minimize safety risks on the ground in airport influence zones. Table 3.11-2 lists the relevant airport master plans³ and airport land use compatibility plans. These airport plans were considered in the preparation of this analysis. Refer to Appendix 2-H for a full discussion of consistency with local and regional plans.

Table 3.11-2 Airport Plans Considered

Airport Name and Location	Airport Plan
Whiteman Airport Los Angeles County	<i>Los Angeles County Airport Land Use Plan (2004)</i>
Hollywood Burbank Airport City of Burbank	<i>Land Use Compatibility Plan (Amended 2012)</i>

Sources: CEC, 2017; City of Burbank, 2012; City of Palmdale, 2005; Los Angeles County, 2004
CEC = California Energy Commission

Emergency Response Plans

In addition to emergency operations requirements set forth in county and city general plans, the cities in the RSA, as well as Los Angeles County, have adopted emergency operations plans. Table 3.11-3 summarizes these plans, which outline procedures for operations during emergencies such as earthquakes, floods, fires, and other natural disasters; hazardous materials spills; transportation emergencies; and security-related incidents. Regionally significant roads are typically identified as emergency evacuation routes in the county and city general plans and emergency response plans. The plans also identify the location of critical emergency response facilities, such as emergency dispatch and operations centers, government structures, and hospitals or other major medical facilities. Plans applicable to the Palmdale Subsection and Maintenance Facility are provided for context. Volume 2, Appendix 3.11-A, Safety and Security Data, identifies these facilities. Vital facilities that provide water, electricity, and gas are discussed in Section 3.6, Public Utilities and Energy.

³ Agua Dulce Airpark is privately owned and does not have an associated airport plan. Van Nuys Airport is located approximately 8 miles to the southwest of the nearest project feature and is not located within any of the Build Alternative RSAs. Therefore, Agua Dulce Airpark and Van Nuys Airport are not considered for discussion of the California HSR System's consistency with local and regional airport plans.

Table 3.11-3 Emergency Response Plans Applicable to the Resource Study Area

Jurisdiction	Emergency Response Plan
City of Burbank	
City of Burbank All-Hazard Mitigation Plan (2011)	This plan provides a framework for the identification and coordination of hazard mitigation strategies developed in the City of Burbank with other plans. Its purpose is to integrate hazard mitigation strategies into the day-to-day activities and programs of the City of Burbank.
City of Burbank Consolidated Contingency Plan (2001)	The Consolidated Contingency Plan provides a business format to comply with the emergency planning requirements of emergency response plans applicable to California.
Burbank Unified School District Disaster Preparedness Plan (2011)	The purpose of this plan is to prepare the district to respond to emergencies using the Standardized Emergency Management System (SEMS). In the district's interest to maintain the safety and care of students and staff, this plan outlines emergency roles and provides procedures for students and staff to ensure that staff and students are aware of and properly trained to follow the school district's plan in accordance with SEMS and the emergency response procedures.
City of Lancaster	
City of Lancaster Hazard Mitigation Plan (2013)	This plan provides a list of activities designed to assist the City of Lancaster with reducing risk and preventing losses from future hazard events. The plan's strategies address multi-hazard issues, as well as hazard-specific activities for windstorms, earthquakes, fires, flood, landslide, and terrorism.
City of Lancaster Emergency Operations Plan (2010)	This plan provides recommendations and suggestions intended to improve emergency preparedness, response, and recovery within the city of Lancaster, and provides a threat assessment for the city.
City of Palmdale	
City of Palmdale Local Hazard Mitigation Plan (2015)	This plan is designed to ensure that the long-term values of the community are not compromised in the course of preparing for, responding to, or recovering from natural and human-made hazards.
City of Palmdale Emergency Operations Plan (2012)	This plan addresses the City of Palmdale's response to natural and technological disasters. It provides an overview of operational concepts; identifies components of the City's emergency/disaster management organization within the Standardized Emergency Management System; and describes the overall responsibilities of the federal, state and county entities and the City for protecting life and property and assuring the overall well-being of the population.

Jurisdiction	Emergency Response Plan
City of Santa Clarita	
City of Santa Clarita Local Hazard Mitigation Plan (2015)	This plan contains resources and information to assist residents, public and private sector organizations, and others with planning for the occurrence of natural and human-made disasters, including earthquakes, flood, hazardous materials, landslides, severe weather, and wildfires.
City of Los Angeles	
City of Los Angeles Emergency Operations Plan (2018)	The Emergency Operations Plan for the City of Los Angeles addresses the City's response functions and capabilities regarding small- to large-scale emergency situations associated with natural disasters or human-caused emergencies. The plan describes the methods for carrying out emergency operations, the process for rendering mutual aid, the emergency services of governmental departments and agencies, how resources are mobilized, how the public will be informed, and the process to ensure continuity of government during an emergency or disaster.
Los Angeles Unified School District Community Emergency Plan (2015)	This plan addresses the following emergency-related issues: fires, lockdowns, earthquakes, shelter in place, bullying, self-harm, suicide, security, and public health. The plan offers information regarding family reunification, communications, response, and preparedness related to emergencies.
Los Angeles County	
Los Angeles County Operation Area Emergency Response Plan (1998)	Section 5, Los Angeles County Hazards Analysis and Mitigation, of this plan describes and prioritizes local hazard mitigation plans. The plan describes threats faced by Los Angeles County's various communities and establishes strategies to reduce and eliminate known risks.
Los Angeles County All-Hazard Mitigation Plan (2019)	This plan provides local governments with guidance on ways to effectively meet disaster management regulations. The document includes implementation examples, as well as suggestions on conducting a plan update process.
Los Angeles County Strategic Plan for Emergency Management (2015)	This plan provides a framework for enhancing emergency preparedness, maintaining the continuity of government operations during a disaster, and emergency management training.
Southern California Association of Governments (SCAG)	
Regional Comprehensive Plan (2008)	This plan establishes a framework for achieving security and emergency preparedness across the project region and with regards to the safety of inter-regional transportation projects.
Regional Transportation Plan/Sustainable Communities Strategy: Transportation Safety and Security (2016)	This plan outlines strategies to ensure the safety and mobility of the region's residents, including drivers and passengers, transit riders, pedestrians, and bicyclists.

Sources: Burbank Unified School District, 2011; City of Burbank, 2001, 2011; City of Lancaster, 2010, 2013; City of Palmdale, 2012, 2015; City of Santa Clarita, 2015; City of Los Angeles, 2018; County of Los Angeles, 1998, 2019a; Los Angeles Unified School District, 2015; SCAG, 2008, 2016

Other Requirements

National Fire Protection Association (NFPA 130 & 1710 Standards)

Many state and local safety requirements incorporate 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 2.8.1, Safety and Security Design Requirements for Infrastructure Elements* (Authority 2013a) incorporates several NFPA codes and standards. NFPA 130-2020, Standard for Fixed Guideway and Passenger Rail Systems (NFPA 2020), specifies 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, Standards for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (NFPA 2020), includes measures to protect citizens and the safety and health of firefighters.

3.11.3 Consistency with Plans and Laws

As indicated in Section 3.1.4.3, Consistency with Plans and Laws, the California Environmental Quality Act (CEQA) and the Council on Environmental Quality (CEQ) regulations require a discussion of inconsistencies or conflicts between a proposed undertaking and federal, state, regional, or local plans and laws. As such, this Draft EIR/EIS evaluates inconsistencies between the six Build Alternatives and federal, state, regional, and local plans, and laws to provide planning context.

The Authority, as the lead state and federal agency proposing to construct and operate the California 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 Build Alternative. Therefore, there would be no inconsistencies between the six Build 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 consistent with land use and zoning regulations. For example, the proposed Build Alternatives will incorporate IAMFs that require the preparation and implementation of a SSMP, hazard management program, and construction safety transportation management plan.

Appendix 2-H provides a Regional and Local Policy Consistency Table, which lists the safety and security goals and policies applicable to the Palmdale to Burbank Project Section and notes the Build Alternatives' consistency or inconsistency with each. The Authority reviewed 14 plans. Each of the six Build Alternatives is inconsistent with one policy from the Los Angeles County General Plan 2035, as discussed below.

- **Los Angeles County General Plan 2035 (2015)**—The Safety Element of this plan addresses limited aspects of human-made disasters, such as hazardous waste and materials management. In particular, the plan addresses those aspects related to seismic events, fires, and floods.
 - **Inconsistent for all six Build Alternatives.** Some features of the Palmdale to Burbank Project Section could introduce hazardous waste and materials to the project area.

Despite the inconsistency above, the project is consistent with the majority of regional and local policies and plans. Although it may not be possible to meet all safety and security standards outlined in Table 3.11-1 through Table 3.11-3, IAMFs and mitigation measures will generally minimize safety and security impacts and would ultimately meet the overall objectives of the local policies.

3.11.4 Methods for Evaluating Impacts

The evaluation of impacts on safety and security resources is a requirement of the National Environmental Policy Act (NEPA) and CEQA. The following sections summarize the safety and security RSA and the methods used to analyze impacts on safety and security.

3.11.4.1 Definition of the 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 include the project footprint for each of the Build Alternatives plus an additional distance from the project footprint, including new or modified electrical infrastructure required to implement the Build Alternatives. Specific RSA boundaries vary for different facilities and encompass areas potentially directly or indirectly negatively affected by construction and operations of the California HSR System. These areas include the project footprint for each of the Build Alternatives plus an additional distance from the project footprint where impacts from construction and operations could affect emergency services and community safety and security.

The safety and security RSA also includes communities, cities, and counties along the project alignment that could be indirectly negatively affected by construction of the California HSR System. Indirect impacts from construction and operations could influence an area outside the RSAs for direct impacts, because certain local service providers (e.g., fire departments, police departments, hospitals) are outside of, but have service boundaries or provide services within, the RSAs for direct impacts. Locations of these service providers include the communities of Acton and Agua Dulce in Los Angeles County and the city of Los Angeles. Table 3.11-4 describes the RSA for safety and security. Figure 3.11-1 through Figure 3.11-3 depict key facilities within the RSAs.

Table 3.11-4 Safety and Security Resource Study Areas

Facility	Resource Study Area Boundaries
Construction and Operations – Direct Impacts	
Right-of-way and stations	Areas within 0.5 mile of the project footprint including a 0.5-mile radius around Burbank Airport Station
Schools ¹	Areas within 0.25 mile of the project footprint, including a 0.25-mile radius around Burbank Airport Station
Landfills	Areas within 0.5 mile of the project footprint including a 0.5-mile radius around Burbank Airport Station
Airports and high-risk facilities	Areas within 2 miles of the project footprint, including a 2-mile radius around Burbank Airport Station
Oil and gas wells ²	Areas within 150-foot buffer from alignment centerline
Emergency service providers (e.g., fire departments, police departments, and hospitals)	Emergency service providers' service areas

Facility	Resource Study Area Boundaries
Construction and Operations – Indirect Impacts	
Emergency service providers (e.g., fire departments, police departments, and hospitals)	Emergency service providers' service areas

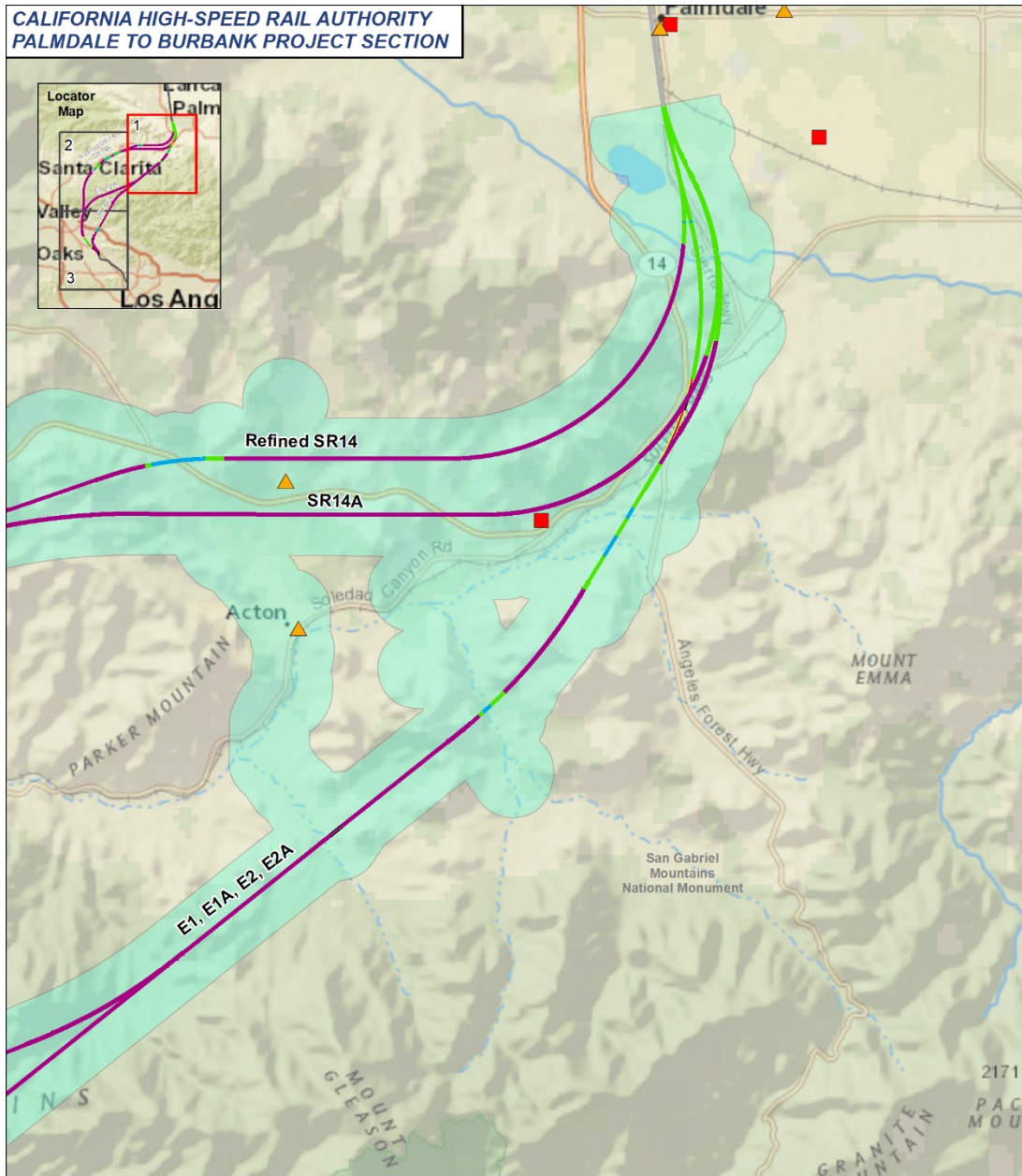
Source: Authority, 2017

¹ Cal. Code Regs., Title 5, Section 15010(d) requires a safety study for new school sites within 1,500 feet (approximately 0.25 mile) of an existing railroad track.

² Oil and gas wells would be identified within 150 feet of the alignment per Cal. Code Regs., Title 14, Chapter 4, Article 2, Section 1720.
Cal. Code Regs. = California Code of Regulations

The RSA is the area in which environmental investigations specific to safety and security are conducted to determine the resource characteristics and impacts of the Palmdale to Burbank Project Section. The boundaries of the RSA for safety and security extend 0.5 mile immediately adjacent to the project footprint, including the Burbank Airport Station. Direct safety and security impacts for the Palmdale to Burbank Project Section are evaluated within the RSA.

The indirect impacts RSA is made up of the cities and county between Palmdale and Burbank. Because certain service providers' service boundaries fall within the direct impacts RSA, indirect impacts from the Palmdale to Burbank Project Section could influence an area larger than the direct impacts RSA. The safety and security evaluation also includes certain services (e.g., fire departments, police departments, hospitals) that are not within the RSA, but have service boundaries in or would provide service within the RSA, as well as airports and high-risk facilities within 2 miles of the California HSR System footprint.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 Source: Authority, 2020; County of Los Angeles, LMS Data, 2016
 March 26, 2021

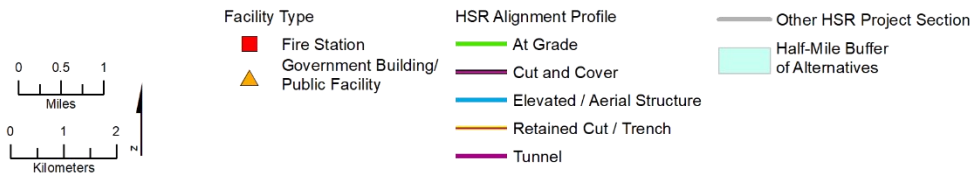


Figure 3.11-1 Map of Safety and Security Resource Study Area (Map 1 of 3)

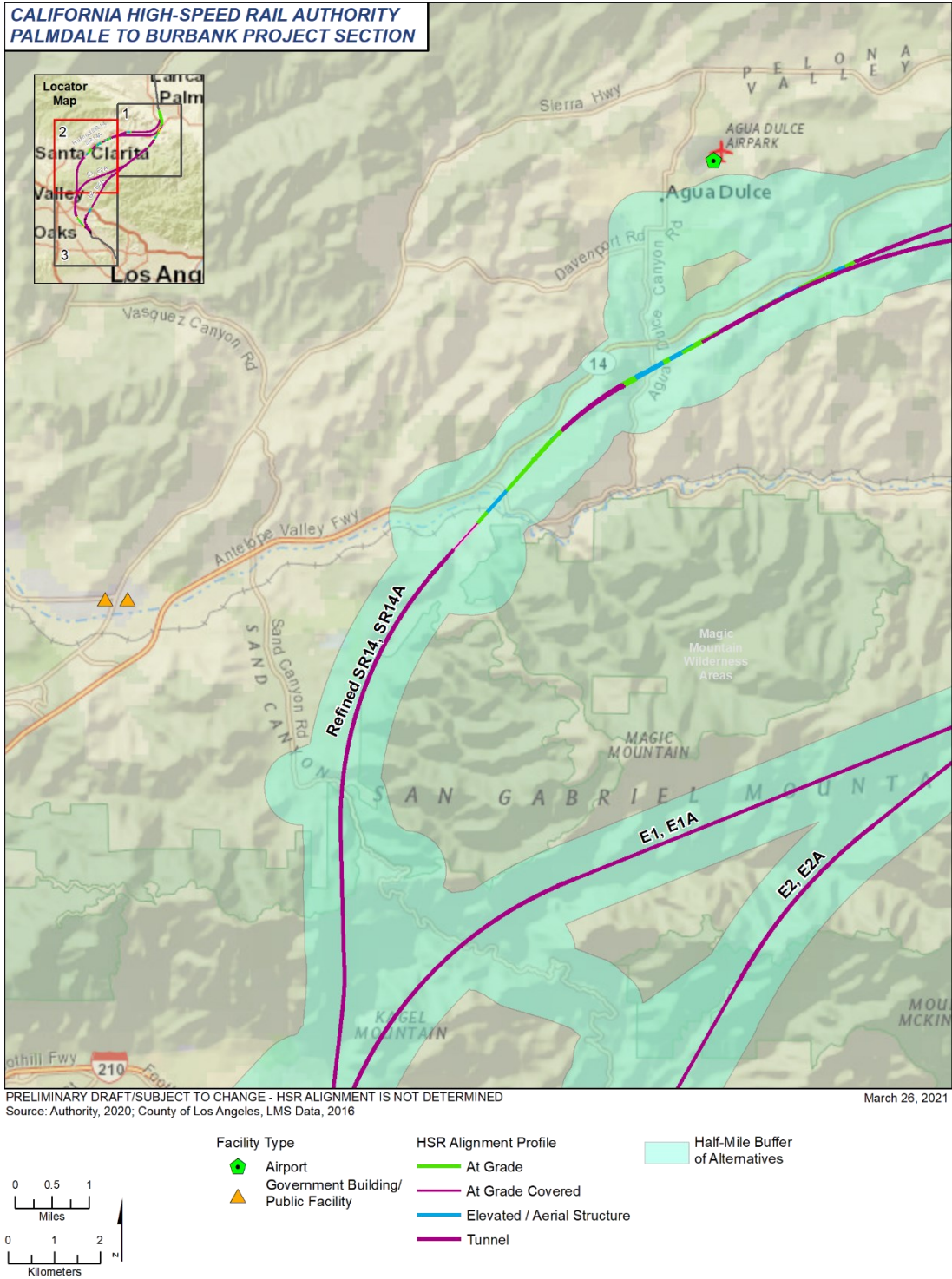
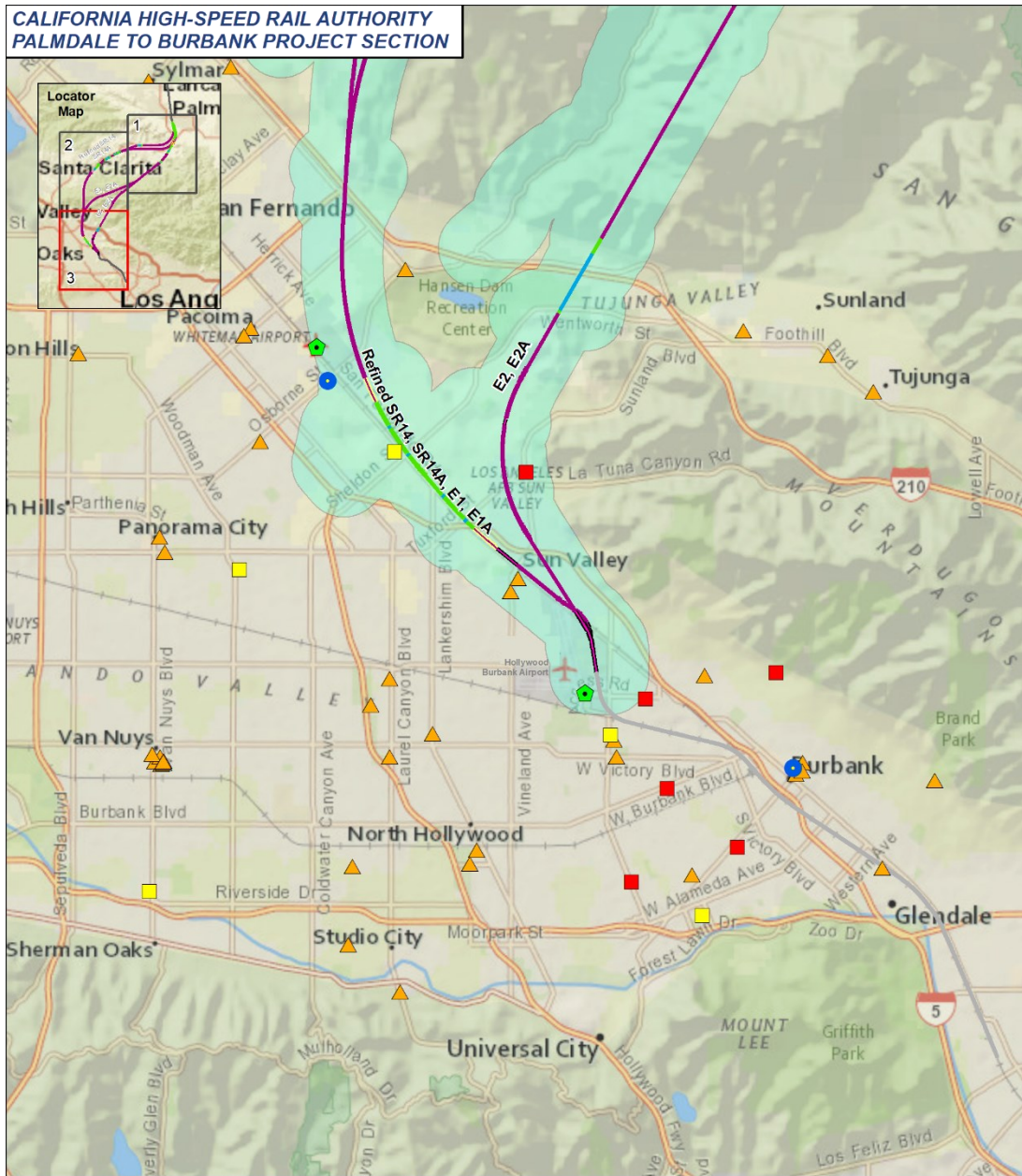


Figure 3.11-2 Map of Safety and Security Resource Study Area (Map 2 of 3)



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 Source: Authority, 2020; County of Los Angeles, LMS Data, 2016
 March 26, 2021

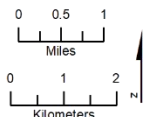
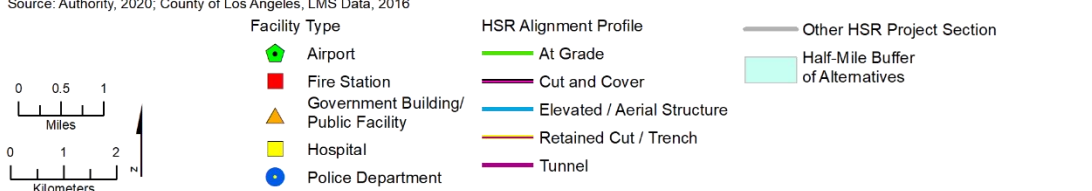


Figure 3.11-3 Map of Safety and Security Resource Study Area (Map 3 of 3)

3.11.4.2 Impact Avoidance and Minimization Features

IAMFs are project features the Authority has incorporated into each of the Build Alternatives for purposes of the environmental impact analysis. The full text of the IAMFs that are applicable to the Palmdale to Burbank Project Section is provided in Volume 2, Appendix 2-E, Project Impact Avoidance and Minimization Features.

The following IAMFs were incorporated into the safety and security analysis:

- **SS-IAMF#1:** Construction Safety Transportation Management Plan—This IAMF describes the Authority’s commitment to develop and implement a construction safety transportation management plan. Prior to construction (any ground-disturbing activity), the contractor shall prepare for submittal to the Authority a construction safety transportation management plan. The plan shall describe the contractor’s coordination efforts with local jurisdictions and the USFS for maintaining emergency vehicle access. The plan shall also specify the contractor’s 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.
- **SS-IAMF#2:** Safety and Security Management Plan—This IAMF describes the Authority’s commitment to develop and implement a safety and security management plan. Sixty days after receiving from the Authority a construction notice-to-proceed, the contractor shall provide the Authority with a technical memorandum documenting how requirements, plan, programs and guidelines that were considered in design, construction and eventual operation to protect the safety and security of construction workers and users of the HSR.
- **SS-IAMF#3:** Hazard Analyses—This IAMF describes the Authority’s commitment to develop and implement a hazard management program. The Authority’s hazard management program includes the identification of hazards, assessment of associated risk, and application of control measures (mitigation), to reduce the risk to an acceptable level. Hazard assessment includes a PHA and threat and vulnerability assessment (TVA).
- **SS-IAMF#4:** Oil and Gas Wells—This IAMF describes the Authority’s commitment to minimize effects from active and abandoned oil and gas wells. Prior to ground-disturbing activities, the contractor shall identify and inspect all active and abandoned oil and gas wells within 200 feet of the HSR tracks. Active wells will be abandoned and relocated by the contractor in accordance with the California Department of Conservation, Division of Oil, and Gas and Geothermal Resources (DOGGR) standards in coordination with the well owners.
- **SS-IAMF#5:** Aviation Safety—This IAMF describes the Authority’s commitment to ensure civil aviation safety and to prevent the potential for disruption of airfield and airspace operations at Hollywood Burbank Airport as a result of construction and/or operation of the project. The Authority and/or the contractor shall ensure all FAA requirements are met.
- **SS-IAMF#6:** Stakeholder Coordination for the Hollywood Burbank Airport—This IAMF describes the Authority’s commitment to stakeholder coordination regarding the Hollywood Burbank Airport. As design of the Palmdale to Burbank Project Section progresses, the Authority shall continue to coordinate with the FAA and the Burbank-Glendale-Pasadena Airport Authority to avoid conflicts due to overlapping construction schedules and future operations at Hollywood Burbank Airport.

In addition to the Safety and Security IAMFs described above, the following IAMFs are applicable to safety and security. Please refer to the applicable Chapter 3 resource sections for full descriptions of each IAMF listed below:

- **TR-IAMF#2:** Construction Transportation Plan
- **AQ-IAMF#1:** Fugitive Dust Emissions
- **GEO-IAMF#1:** Geological Hazards
- **GEO-IAMF#2:** Slope Monitoring

- **GEO-IAMF#7:** Evaluate and Design for Large Seismic Ground Shaking
- **GEO-IAMF#8:** Suspension of Operations during an Earthquake
- **HYD-IAMF#1:** Storm Water Management
- **HYD-IAMF#2:** Flood Protection
- **HMW-IAMF#2:** Landfill
- **HMW-IAMF#4:** Undocumented Contamination
- **HMW-IAMF#6:** Spill Prevention
- **HMW-IAMF#7:** Transport of Materials
- **HMW-IAMF#8:** Permit Conditions
- **PUE-IAMF#2:** Irrigation Facility Relocation
- **PUE-IAMF#3:** Public Notifications
- **PUE-IAMF#4:** Utilities and Energy

This environmental impact analysis considers these IAMFs as part of the project design. Within Section 3.11.6, Environmental Consequences, each impact narrative describes how these project features are applicable and, where appropriate, effective at avoiding or minimizing impacts.

3.11.4.3 Methods for NEPA and CEQA Impact Analysis

Overview of Impact Analysis

This section describes the sources and methods the Authority used to analyze project impacts on safety and security. These methods apply to both NEPA and CEQA analyses unless otherwise indicated. Refer to Section 3.11.4, Methods for Evaluating Impacts, for a description of the general framework for evaluating impacts under NEPA and CEQA.

As summarized previously in Section 3.11.1, Introduction, seven other resource sections in this Draft EIR/EIS also provide information related to safety and security. Section 3.11.4.4 and Section 3.11.4.5 describe the criteria used to determine impacts under NEPA and the thresholds used for determining significance under CEQA, respectively.

This section considers the exposure of California HSR System passengers and employees or structures and the general public to significant risk of loss, injury, or death during construction and operations of this Palmdale to Burbank Project Section. Because no HSR system currently operates in the United States, the evaluation of safety and security operations impacts is based on (1) international HSR operating experience, and (2) existing conditions compared with the design and operations features of the Build Alternatives. Safety issues addressed include future rail system operations, such as the following:

- Train travel
- Vehicle, bicycle, and pedestrian access at stations
- Emergency response by fire, law enforcement, and emergency services to fire, seismic events, floods, extreme weather, or other emergency situations
- For security, the analysis evaluates impacts associated with the incidence of crime against people and property, including acts of terrorism

Emergency Services

The Authority reviewed general plans, emergency plans, and other relevant local municipality planning documents and corresponded with local fire protection, police, and other emergency medical service providers. 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 provide a baseline for evaluating impacts resulting from implementation of the Build Alternatives.

Analysts collected vehicle and train accident data from the CHP and FRA. In addition, analysts developed a geographic information system (GIS) database with electronic information from local and regional government sources to determine local land uses, and potential fire hazards in order

to evaluate how construction and operations of the Build Alternatives may cause safety and security hazards and increase existing emergency response times.

Community Safety and Security

The Authority reviewed the planned roadway improvements and planned temporary or permanent road closures and relocations that would be implemented for HSR construction and operations and the potential of the roadway improvements, closures, and relocations to disrupt motor vehicle driver, pedestrian, and bicyclist traffic. Analysts gathered data from several sources (CHP 2019; FRA 2019) to evaluate motor vehicle, pedestrian, and bicycle safety, including incidents occurring at highway-rail grade crossings and to characterize accidents and incidents within the RSAs. In addition, analysts developed a GIS 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 Build Alternatives may contribute to community safety and security hazards.

Impacts on safety were evaluated for the following topics:

- Train operations
- Infrastructure maintenance
- Vehicle, bicycle, and pedestrian access control measures at stations and along the HSR right-of-way

The Authority reviewed police department and law enforcement records for types and statistics of onboard crime and crime at or near passenger rail facilities and property. Onboard crime statistics from the Los Angeles County Metropolitan Transportation Authority (Metro) were used to identify the types of operations security impacts resulting from implementation of the Build Alternatives. These data represent the best publicly available statistics for the types of crimes that might occur during HSR operations of the California HSR System. Statistics for onboard crime on passenger trains were obtained from the Metro and San Francisco Bay Area Rapid Transit to characterize the types of security impacts that could occur near the HSR right-of-way and HSR stations resulting from implementation of the Build Alternatives (see Volume 2, Appendix 3.11-A, Safety and Security Data).

Natural Disasters

The Authority reviewed maps, tables, and other relevant data related to dam failure/inundation/flood risks, geotechnical hazards, and high winds. The locations of hazards within the RSA were also evaluated and inventoried as part of the analysis. Existing regulations and requirements, as well as standard design practices and design criteria, were then compiled and reviewed to provide a baseline for evaluating impacts resulting from implementation of the Palmdale to Burbank Project Section.

For analysis of wildfire hazards, the Authority reviewed FHSZ maps for state and local responsibility areas throughout the RSA to determine where wildfire hazards exist within the RSA. Using an overlay of each Build Alternative footprint, the Authority evaluated the potential for project construction and operation to increase fire risks in these areas. In particular, the Authority evaluated the storage and use of flammable or combustible materials, operation of heavy machinery, presence of electrical facilities, and other factors resulting from increased human activity.

Built Environment Hazards

Analysts developed a GIS database with electronic information from local and regional government sources to determine critical infrastructure, government buildings, high-risk facilities and fall hazards, and other potentially hazardous sites including landfills and waste disposal sites, to evaluate how construction and operation of the Palmdale to Burbank Project Section may cause safety and security hazards.

3.11.4.4 Method for Evaluating Impacts under NEPA

CEQ NEPA regulations (40 C.F.R. Parts 1500–1508) provide the basis for evaluating project effects (Section 3.1.4.4). As described in Section 1508.27 of these regulations, the criteria of context and intensity are considered together when determining the severity of the change introduced by the Palmdale to Burbank Project Section. “Context” is defined as the affected environment in which a proposed project occurs. “Intensity” refers to the severity of the effect, which is examined in terms of the type, quality, and sensitivity of the resource involved, location and extent of the effect, duration of the effect (short- or long-term), and other considerations of context. Beneficial effects are also considered. When no measurable effect exists, no impact is found to occur. For the purposes of NEPA compliance, the same methods used to identify and evaluate impacts under CEQA are applied here.

NEPA does not specify thresholds for determining the significance of an impact on safety and security. For the purposes of this Draft EIR/EIS, the evaluation of NEPA impacts does not use intensity gradations. The context for safety is typically local (i.e., the immediate construction or operations area), although natural disasters (e.g., major seismic events, widespread flooding) could result in project impacts in a regional context. The context for security is also often local (e.g., vandalism of HSR property, crime on trains or at stations), but major terrorist attacks could negatively affect the project on a regional or statewide scale.

3.11.4.5 Method for Determining Significance under CEQA

The Authority is using the following thresholds to determine if a significant impact on safety or security would occur as a result of the project. A significant impact is one that would:

- Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or inconsistent 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 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 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.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- If located in or near state responsibility areas or lands classified as Very High FHSZs, would the project:
 - Substantially impair an adopted emergency response plan or emergency evacuation plan?
 - Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
 - Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment?
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Section 3.11.2.3 above and Appendix 2-H provide a consistency analysis with adopted policies, plans, or programs related to safety and security of transportation modes, including public transit, bicycle, and pedestrian facilities, which addresses whether the project would conflict with such policies, plans, or programs.

As discussed in Section 3.11.2, Laws, Regulations, and Orders, state and local agencies have developed a variety of policies, plans, and programs to address safety and security, including emergency response plans, evacuation plans, and plans to address bicycle safety, among others. Because these policies, plans, and programs have been developed specifically to minimize safety and security risks, a conflict would generally indicate a significant impact related to safety and security. Therefore, whether the project would conflict with adopted policies, plans, or programs regarding safety and security, is an appropriate threshold to determine whether the project would result in a significant impact related to safety and security.

3.11.5 Affected Environment

This section discusses the affected environment related to safety and security in the RSAs for the Build Alternatives. As discussed above in Section 3.11.4.1, the RSA for safety and security for the Build Alternatives is located within Los Angeles County, beginning in the city of Lancaster and continuing south to the city of Burbank via the State Route 14 freeway corridor, and including the area of the ANF. As described in Table 3.11-4, the RSA boundaries vary for different types of facilities. The RSA encompasses emergency service stations from the Los Angeles County Fire Department (LACFD) and Los Angeles County Sheriff's Department (LASD), the City of Los Angeles Fire Department (LAFD) and City of Los Angeles Police Department (LAPD), and the City of Burbank Fire Department (BFD) and City of Burbank Police Department (BPD). Figure 3.11-1 through Figure 3.11-3 depict the RSA in relation to government facilities, hospitals, airports, fire and police stations, and sheriffs' departments. The resource topics below are described in relation to the Central, and Burbank Subsections as defined in Chapter 2, Alternatives. A summary of stakeholder issues and concerns relating to safety and security issues from public outreach efforts can also be found in Chapter 9, Public and Agency Involvement.

3.11.5.1 Emergency Services

The emergency services discussed in this section include fire protection, law enforcement, and emergency medical services. Information on emergency services for the Palmdale Subsection and Maintenance Facility is provided in this section for context; however, effects regarding emergency services for the Palmdale Subsection and Maintenance Facility are discussed in the Bakersfield to Palmdale Project Section EIR/EIS.

Fire Protection

Table 3.11-5 lists fire stations located within the RSA. According to personal communications in late 2016 and early 2017 with each of the fire departments serving the RSA, none have plans to add or expand stations in the foreseeable future (Kneer 2016; Gibson 2017; Losacco 2017). Volume 2, Appendix 3.11-A, Safety and Security Data, provides response times and other information for these fire stations.

The LACFD provides fire protection services to unincorporated communities in Los Angeles County, including Acton and Agua Dulce, as well as contract-based services to the cities of Lancaster and Palmdale. As noted in Table 3.11-5, there are eight LACFD stations that would serve the RSA. The LACFD is also responsible for fire protection services in the ANF, including SGMNM. USFS is responsible for wildfire suppression and the maintenance of a healthy wildfire regime.⁴

⁴ A fire regime is the term given to the pattern, frequency, and intensity of the bushfires and wildfires that prevail in an area over long periods of time.

The LAFD provides fire protection services in the city of Los Angeles. The LAFD operates 114 fire stations throughout the city; however, only one LAFD station would serve the RSA, as noted in Table 3.11-5.

The BFD provides fire protection services in the city of Burbank. The BFD operates six fire stations. While BFD Station 13 is the only station within a 0.5-mile buffer of the project, all six BFD stations would have the potential to be indirectly negatively affected by demand on department services caused by the Palmdale to Burbank Project Section and, as such, are included within the RSA.

Table 3.11-5 Fire Stations Located within the Resource Study Area

Fire Station	Address	Service Area	Equipment/Department Staffing	Average Response Times	Relevant Build Alternative
Los Angeles County Fire Department					
LACFD Station 37	38318 Ninth Street East, Palmdale	Unincorporated Los Angeles County and the Cities of Palmdale and Lancaster	2 engines, 2 rescue vehicles 2,900 paid staff (LACFD total)	2 to 5 minutes (urban and rural areas, respectively)	All Six Build Alternatives
LACFD Station 80	1533 Sierra Highway, Acton	Unincorporated Los Angeles County and the Cities of Palmdale and Lancaster	2 engines 1 pickup truck–style patrol car 1 water-tender truck 1 swift-water rescue boat 2,900 paid staff (LACFD total)	2 to 5 minutes (urban and rural areas, respectively)	All Six Build Alternatives
LACFD Station 136	3650 Bolz Ranch Road, Palmdale	Unincorporated Los Angeles County and the Cities of Palmdale and Lancaster	1 engine 1 water-tender truck 2,900 paid staff (LACFD total)	2 to 5 minutes (urban and rural areas, respectively)	All Six Build Alternatives
LACFD Station 24	1050 West Avenue P, Palmdale	Unincorporated Los Angeles County and the Cities of Palmdale and Lancaster	1 engine 1 combination engine/ladder truck 2,900 paid staff (LACFD total)	2 to 5 minutes (urban and rural areas, respectively)	All Six Build Alternatives
LACFD Station 131	2629 East Avenue S, Palmdale	Unincorporated Los Angeles County and the Cities of Palmdale and Lancaster	2 engines 1 rescue vehicle 2,900 paid staff (LACFD total)	2 to 5 minutes (urban and rural areas, respectively)	All Six Build Alternatives
LACFD Station 93	5624 East Avenue R, Palmdale	Unincorporated Los Angeles County and the Cities of Palmdale and Lancaster	2 engines 1 utility vehicle 2,900 paid staff (LACFD total)	2 to 5 minutes (urban and rural areas, respectively)	All Six Build Alternatives

Fire Station	Address	Service Area	Equipment/Department Staffing	Average Response Times	Relevant Build Alternative
LACFD Station 114	39939 North 170th Street East, Palmdale	Unincorporated Los Angeles County and the Cities of Palmdale and Lancaster	2 engines 1 pickup truck–style engine 2,900 paid staff (LACFD total)	2 to 5 minutes (urban and rural areas, respectively)	All Six Build Alternatives
LACFD Station 140	8723 Elizabeth Lake Road, Palmdale	Unincorporated Los Angeles County and the Cities of Palmdale and Lancaster	1 engine 2,900 paid staff (LACFD total)	2 to 5 minutes (urban and rural areas, respectively)	All Six Build Alternatives
Los Angeles Fire Department					
LAFD Station 77	9224 Sunland Boulevard, Sun Valley	Valley Bureau of the City of Los Angeles	1 engine 3,246 fire personnel and 353 support personnel (LAFD total)	5:08 minutes (urban)	All Six Build Alternatives
Burbank Fire Department					
BFD Station 11	311 East Orange Grove Avenue, Burbank	City of Burbank	1 engine 1 truck 1 rescue ambulance 1 battalion 36 paid personnel per shift (BFD total)	Responded to approximately 73 percent of calls in 5:20 or less	All Six Build Alternatives
BFD Station 12	644 North Hollywood Way, Burbank	City of Burbank	1 truck 1 hazmat division 36 paid personnel per shift (BFD total)	Responded to approximately 73 percent of calls in 5:20 or less	All Six Build Alternatives
BFD Station 13	2713 Thornton Avenue, Burbank	City of Burbank	1 engine 1 rescue ambulance 36 paid personnel per shift (BFD total)	Responded to approximately 73 percent of calls in 5:20 or less	All Six Build Alternatives
BFD Station 14	2305 West Burbank Boulevard, Burbank	City of Burbank	1 engine 36 paid personnel per shift (BFD total)	Responded to approximately 73 percent of calls in 5:20 or less	All Six Build Alternatives

Fire Station	Address	Service Area	Equipment/Department Staffing	Average Response Times	Relevant Build Alternative
BFD Station 15	1420 West Verdugo Avenue, Burbank	City of Burbank	1 engine 1 rescue ambulance 36 paid personnel per shift (BFD total)	Responded to approximately 73 percent of calls in 5:20 or less	All Six Build Alternatives
BFD Station 16	1600 North Bel Aire Drive, Burbank	City of Burbank	1 engine 36 paid personnel per shift (BFD total)	Responded to approximately 73 percent of calls in 5:20 or less	All Six Build Alternatives

Sources: FireDepartment.net, 2015; BFD, 2016; LAFD, 2019

BFD = Burbank Fire Department; LACFD = Los Angeles County Fire Department; LAFD = Los Angeles Fire Department

Law Enforcement

LASD provides law enforcement services to unincorporated communities such as Acton and Agua Dulce, and contract-based services to the cities of Lancaster and Palmdale. According to the LASD, the average emergency call response time from the Lancaster Station to the surrounding service area is 4 to 6 minutes (City of Lancaster 2009). The Palmdale Sheriff's Station has a goal of responding to emergency calls within 7 minutes. In 2015, the average emergency call response time was 5 minutes, 18 seconds. The LASD Lancaster Sheriff's Station and Palmdale Sheriff's Station are located within the RSA for the Build Alternatives, as noted in Table 3.11-6 and shown on Figure 3.11-1 through Figure 3.11-3.

Table 3.11-6 Law Enforcement Stations within the Resource Study Area

Facility	Address	Service Area	Staffing	Average Response Times	Relevant Build Alternative
Palmdale Subsection					
LASD Palmdale Station	750 East Avenue Q, Palmdale	City of Palmdale	177 sworn personnel (1 captain, 6 lieutenants, 22 sergeants, and 148 deputies) 48 civilian personnel 14 reserve deputies	Emergency: 5:18 minutes Priority: 16.06 minutes Route: 77:42 minutes (9-month average, January-September 2015)	All Six Build Alternatives
Central Subsection					
LAPD Foothill Community Police Station	12760 Osborne Street, Arleta	Valley Bureau of the City of Los Angeles	300 sworn personnel 30 civilian personnel	Emergency: 4:42 minutes Non-Emergency: 29:18 minutes	All Six Build Alternatives

Facility	Address	Service Area	Staffing	Average Response Times	Relevant Build Alternative
LAPD Northeast Community Police Station	3353 North San Fernando Road, Los Angeles	Valley Bureau of the City of Los Angeles	295 sworn personnel 16 civilian personnel	Emergency: 4:42 minutes Non-Emergency: 29:18 minutes	All Six Build Alternatives
Burbank Subsection					
BPD Headquarters	200 North Third Street, Burbank	City of Burbank	152 sworn personnel 104 civilian personnel	High-priority ¹ : 3:36 minutes All calls: 16:27 minutes	All Six Build Alternatives
Maintenance Facility					
LASD Lancaster Station	501 West Lancaster Boulevard, Lancaster	City of Lancaster and Unincorporated Los Angeles County	225 sworn personnel 75 civilian personnel	City of Lancaster: Emergency: 4.9 minutes Priority: 14.8 minutes Route: 106 minutes Unincorporated Areas: Emergency: 9.1 minutes Priority: 27.8 minutes Routine: 106 minutes	All Six Build Alternatives

Sources: LAPD, 2016; LASD, 2016; BPD, 2016

¹ Life-threatening of violent crimes in progress.

BPD = Burbank Police Department; LASD = Los Angeles Sheriff's Department; LAPD = Los Angeles Police Department

The Valley Bureau of the Los Angeles Police Department (LAPD) provides law enforcement services within the RSA, including the San Fernando Valley and Lake View Terrace and Shadow Hills neighborhoods. LAPD's department-wide response time goal is 7 minutes for high-priority calls and 40 minutes for non-emergency calls. In 2017, the LAPD Valley Bureau had an average response time for emergency calls of 4 minutes, 42 seconds. The average response time for non-emergency calls in the Valley Bureau in 2017 was 29 minutes, 18 seconds (Gibson 2017). Table 3.11-6 notes the three LAPD Stations within the RSA.

The BPD provides law enforcement services in the city of Burbank. In 2014, the BPD had an average response time for urgent calls of less than 4 minutes. As noted in Table 3.11-6, the BPD station is within the RSA.

For further information regarding law enforcement within the RSA, refer to Appendix 3.11-A, Safety and Security Data.

Emergency Medical Services

Emergency medical services are provided by the local fire departments, emergency medical service agencies, and independent ambulance services. Table 3.11-7 lists the hospitals and medical facilities within the RSA that provide emergency medical services.

Table 3.11-7 Medical Facilities within the Resource Study Area

Medical Facility	Address	Service Area	Description	Relevant Build Alternative
Palmdale Subsection				
Palmdale Regional Medical Center	38600 Medical Center Drive, Palmdale	Antelope Valley	Hospital, 911 Response	All Six Build Alternatives
Antelope Valley Hospital	1600 West Avenue J, Lancaster	Antelope Valley	Hospital, 911 Response	All Six Build Alternatives
High Desert Regional Health Center	335 East Avenue I, Lancaster	Antelope Valley	Hospital, 911 Response	All Six Build Alternatives
Central Subsection				
Pacifica Hospital of the Valley	9449 San Fernando Road, Sun Valley	Sun Valley	Hospital, 911 Response	All Six Build Alternatives
Providence Holy Cross Medical Center	15031 Rinaldi Street, Mission Hills	San Fernando	Hospital, 911 Response	All Six Build Alternatives
Totally Kids	1720 Mountain View Avenue, Loma Linda	Sun Valley	Children's Hospital, Pediatric Care	All Six Build Alternatives
Sherman Oaks Hospital	4929 Van Nuys Boulevard, Sherman Oaks	Sherman Oaks	Hospital, 911 Response	All Six Build Alternatives
Burbank Subsection				
Providence Saint Joseph Center	501 South Buena Vista Street, Burbank	San Fernando/Santa Clarita Valleys	Hospital, 911 Response	All Six Build Alternatives
Burbank Urgent Care Center	3413 West Pacific Avenue, #102, Burbank	Burbank	Urgent Care Clinic	All Six Build Alternatives
Kaiser Permanente Panorama City Medical Center	13651 Willard Street, Panorama City	Burbank	Primary Care, Emergency/Urgent Care	All Six Build Alternatives

Source: Los Angeles County, 2016

At-grade railroad crossings can hinder emergency response times when trains block the crossings. In such instances, emergency response teams must use out-of-direction routes to bypass the train and reach emergencies on the other side of the tracks. This is particularly problematic in rural areas where crossings are farther apart. Response times are described in Appendix 3.11-A, Safety and Security Data.

Emergency Access

The Authority has developed an emergency access plan for operation of the California HSR System in the RSA pursuant to NFPA Standard 130: Standard for Fixed Guideway Transit and Passenger Rail Systems, the principal guidance document. The plan includes emergency access provisions with regard to fire and safety for stations, ventilation systems, procedures, control systems, communication, and vehicles. NFPA Standard 130 also provides standards for flammable materials and fire hazards during the design process. The purpose of NFPA Standard 130 is to limit the likelihood of a fire and/or control a fire to lessen its severity (NFPA 2014). See Section 3.11.2.1 for further discussion on NFPA Standard 130.

According to the *California High Speed Train Rail Design Criteria* (Authority 2014a), each type of HSR facility shall have location-specific fire and life-safety infrastructure, plans, and procedures per NFPA Standard 130. These plans and procedures focus on access and egress requirements, fire prevention and mitigation, smoke removal, and reliability of fire prevention and mitigation systems.

Regionally significant roads (identified in Section 3.2, Transportation) are typically identified as emergency evacuation routes in the county and city general response plans and emergency response plans. At-grade crossings of evacuation routes and railway tracks could result in potential delays for emergency response and evacuation in locations where trains block these roads. In the RSA, regionally significant roads that cross railroads at grade include Columbia Way/E Avenue M in the city of Palmdale.

3.11.5.2 Community Safety and Security

This section discusses community safety and security in relation to the topics of vehicles and pedestrians, railroad operations, airports, schools, high-risk facilities and fall hazards, Valley fever, high winds, geotechnical hazards, landfills, and critical infrastructure. Information on the topics listed above pertaining to the Palmdale Subsection and Maintenance Facility are provided in this section for context; however, effects regarding community safety and security for the Palmdale Subsection and Maintenance Facility are evaluated in the Bakersfield to Palmdale Project Section EIR/EIS.

Vehicles and Pedestrians

Table 3.11-8 summarizes accident statistics from 2017 for cities within the RSA based on data compiled by the CHP, including all vehicular collisions that were reported to CHP from local and governmental agencies.

Table 3.11-8 Accident Statistics for Cities in the Resource Study Area (2017)

City	Fatal Vehicular Collisions	Non-fatal Injury Vehicular Collisions	Vehicular Collisions Involving Rail	Fatal Vehicular Collisions Involving Pedestrians	Injury Vehicular Collisions Involving Pedestrians	Fatal Vehicular Collisions Involving Bicyclists	Injury Vehicular Collisions Involving Bicyclists
Lancaster	0	38	0	0	0	0	1
Palmdale	17	740	0	4	37	0	14
Santa Clarita	9	725	0	0	21	0	22
Los Angeles	721	62,723	51	259	5,231	37	3,327
Burbank	6	202	0	2	0	1	0
Total	753	64,428	51	265	5,289	38	3,364

Source: California Highway Patrol, 2019

The RSA contains existing Metrolink rights-of-way, including numerous at-grade railroad crossings. While railroad crossings can be dangerous for vehicles and pedestrians, Metrolink improved safety at highway crossings between 2013 and 2015. After reporting a Metrolink systemwide total of 22 incidents at highway-rail crossings in 2013, accidents at these crossings dropped by approximately 73 percent to only six incidents in 2015 (FRA 2019). Of the six Metrolink highway-rail incidents reported in 2015, three involved pedestrians, one involved an automobile, one involved a truck, and one involved a motorcycle.

Automobiles and Highways

The U.S. Department of Transportation classifies factors involved in fatal vehicle crashes as either transportation-related or human-related. One of the most influential transportation factors is speed, which can be greatly affected by roadway congestion. For the purposes of this analysis, congestion is measured in terms of vehicular level of service. Vehicular level of service, calculated by comparing the actual number of vehicles using a facility to the facility's carrying capacity, is the primary unit of measurement for stating the operating quality of a highway, roadway, or intersection. Unlike many other cities in the Los Angeles metropolitan region, vast portions of the cities of Lancaster and Palmdale are still undeveloped, presenting these cities with the opportunity to more easily acquire additional rights-of-way as one means to combat congestion. The cities of Los Angeles and Burbank lack open and undeveloped land, but both cities are exploring different strategies in their respective community and general plans to address prevalent congestion issues. Additional details on congestion and accident patterns are included in Section 3.2, Transportation, and in the *Palmdale to Burbank Project Section: Transportation Technical Report* (Authority 2019b).

Some of the factors that can influence automobile and highway safety are as follows:

- Operator-specific factors such as age, experience, health, and ability.
- Vehicle reliability, maintenance, and crashworthiness.
- Environmental considerations, including weather and lighting conditions (for example, wind rain, fog, darkness, sun glare), driver distractions and interferences, and roadway conditions such as congestion.

Bicycles and Pedestrians

Table 3.11-8 shows the number of fatal and injured pedestrians and bicyclists associated with vehicle accidents throughout the jurisdictions of the RSA in 2017. Section 3.2, Transportation, discusses the existing pedestrian and bicycle traffic conditions for the RSA. Pedestrian and cyclist safety issues associated with railroad tracks in the RSA are generally the result of conflict between pedestrians and/or cyclists and trains on at-grade crossings.

Los Angeles County had the highest death toll of pedestrians in the United States, with 271 killed in 2017 (CHP 2019). In February 2019, the Los Angeles County Department of Public Health and Department of Public Works published the County's *Vision Zero Action Plan* (Los Angeles County 2019c). The Los Angeles County *Vision Zero Action Plan* outlines the County's efforts to achieve the goal of eliminating traffic-related fatalities on unincorporated county roadways by 2035.

In January 2017, Mayor Eric Garcetti and the Los Angeles Department of Transportation also released the City of Los Angeles' first *Vision Zero Action Plan* (City of Los Angeles 2017). The City of Los Angeles' *Vision Zero Action Plan* outlines the City's blueprint to reduce fatalities by 20 percent by the end of 2017 and eliminate traffic deaths by 2025. Additionally, the City of Los Angeles' *Great Streets for Los Angeles* strategic plan establishes a vision for the Los Angeles Department of Transportation to deliver street improvements that support economic vitality and enhance quality of life, including pedestrian and bicycle safety (City of Los Angeles 2014).

The jurisdictions listed in Table 3.11-9 are within the RSA and have adopted plans that promote bicycle safety.

Table 3.11-9 Adopted Bicycle Master Plans within Resource Study Area Jurisdictions

Jurisdiction	Plan
City of Los Angeles	<i>2010 Bicycle Plan (2011)</i>
City of Burbank	<i>Bicycle Master Plan (2009)</i>
Los Angeles County	<i>Bicycle Master Plan (2012)</i>
Caltrans	<i>Toward an Active California State Bicycle & Pedestrian Plan (2017)</i>

Sources: Caltrans, 2017; City of Burbank, 2009a; City of Lancaster 2012; City of Los Angeles, 2011; Los Angeles County, 2012b
 Caltrans = California Department of Transportation

Railroad Operations

The RSA includes existing Metrolink rights-of-way; thus, Metrolink security concerns could result in security concerns for the HSR tracks operating close to the Metrolink tracks. The six Build Alternatives within the Palmdale Subsection would run parallel to the Metrolink right-of-way on the Antelope Valley line. In the Central Subsection, the Refined SR14, E1, and E2 Build Alternatives would continue parallel to the Metrolink right-of-way until just south of Lake Palmdale, where Refined SR14 Build Alternative splits from the E1 and E2 Build Alternatives. The SR14A, E1A, and E2A Build Alternative alignments would cross over the Metrolink Antelope Valley Line approximately 1.5 miles southeast of Una Lake. The E1, E1A, E2, and E2A Build Alternatives would cross the Antelope Valley line again at the Vincent Grade/Acton Station. The Refined SR14 and SR14A Build Alternative alignments would cross Metrolink right-of-way again near the intersection of Soledad Canyon Road and State Route 14. The Refined SR14 and SR14A Build Alternative alignments would meet the Antelope Valley line again at the Sun Valley and Burbank Airport–North Stations until all Build Alternatives converge at the Burbank Airport Station. The Antelope Valley Metrolink line trains run approximately one to three hours apart from the Lancaster to Burbank Airport–North Stations.

To manage security concerns, Metrolink contracts for its own LASD unit. After the September 11, 2001, terrorist incidents, the Southern California Regional Rail Authority initiated a threat assessment of major facilities (including Metrolink facilities within the RSA), and has undertaken numerous additional steps to increase security efforts, which include the following (Metrolink 2017):

- Coordinating efforts with local police, the Federal Bureau of Investigation, and the Department of Homeland Security to recognize threats against rail service before they happen
- Working with local police agencies, the freight railroads, and the federal and state regulatory agencies on railroad security measures
- Working with local police and fire departments on responding to rail emergencies
- Providing threat awareness training for staff members, conductors, engineers, and other contractor employees

According to FRA, train accidents are separated into two categories: safety-related events, and accidents. Safety-related events include events such as collisions, derailments, fires, and explosions involving on-track railroad equipment, whether standing or moving, and causing monetary damage to the rail equipment and track above a prescribed amount (FRA 2005). Accidents are categorized as derailments, collisions with other trains or vehicles, and other types of accidents that include incidents with pedestrians on railways.

In addition to a fatal collision involving a Metrolink train and an automobile recorded in 2015, Metrolink has had two multi-fatality crashes since 2005. One occurred in 2005 in Glendale when a commuter train hit a truck parked on the tracks, resulting in 11 fatalities and more than 170 injuries.

The other involved a collision with a Union Pacific Railroad (UPRR) freight train on a stretch of shared track in Chatsworth in 2008, resulting in 25 fatalities and 135 injuries.

Partially in response to these accidents, Congress passed the Rail Safety Improvement Act of 2008, requiring “each Class I railroad carrier and each entity providing regularly scheduled intercity or commuter rail passenger transportation [to] develop and submit to the Secretary of Transportation a plan for implementing a PTC system by December 31, 2015” (49 U.S.C. Section 20157(a)). In June 2015, rail officials announced that PTC had been installed on 341 miles of right-of-way exclusively belonging to Metrolink (Weikel 2015). PTC relies on a Global Positioning System to detect potential accident risks and override manual controls to stop a train before a collision occurs. The California HSR System would incorporate a PTC system to protect against over-speed derailment, as required by the Railway Safety Improvement Act of 2008 through regulations enforced by the FRA.

Airports

As shown on Figure 3.11-1 through Figure 3.11-3, there are three airports in the RSA: Agua Dulce Airpark, Whiteman Airport, and Hollywood Burbank Airport.⁵ Table 3.11-10 lists the airports and air facilities in the RSA.

Table 3.11-10 Airports and Air Facilities within the Resource Study Area

Facility	Address	Approximate Distance from Project Footprint
Agua Dulce Airpark	33638 Agua Dulce Canyon Road, Santa Clarita	2 miles
Whiteman Airport ¹	12653 Osborne Street, Pacoima	0.5 mile
Hollywood Burbank Airport	2627 N. Hollywood Way, Burbank	0 mile

¹ The alignment would be underground as it passes Whiteman Airport; there would be no above-ground HSR facilities in this area.
HSR = high-speed rail

Only airports within 2 miles of the project footprint are included in the RSA. Of these, only the Hollywood Burbank Airport is served by commercial airlines. None of the airports within the RSA has an international terminal. Agua Dulce Airpark and Whiteman Airport are public use airports. Agua Dulce Airpark is privately owned, and Whiteman Airport is owned by Los Angeles County. Hollywood Burbank Airport is a public-service commercial airport owned by the Burbank-Glendale-Pasadena Airport Authority, a separate government agency created under a joint powers agreement between the three cities in 1977 for the purpose of owning and operating the airport (Hollywood Burbank Airport 2018).

As noted in Table 3.11-2, the airport master plans and airport land use compatibility plans for the airports within the RSA were considered in the preparation of this analysis. Airport master plans and land use compatibility plans from county airport land use commissions regulate land use within airport safety zones to minimize airport hazards and risk of accidents. No accident reports have been issued by the National Transportation Safety Board for airports within the RSA in the past 10 years. However, in 2000, an airplane overran the runway after landing at the Hollywood Burbank Airport. The airplane came to rest on a city street near a gas station outside of the airport property. Of the 142 persons on board, 2 passengers sustained serious injuries; 41 passengers and the captain sustained minor injuries; and 94 passengers, 3 flight attendants, and the first officer sustained no injuries. In 2002, the National Transportation Safety Board adopted an aircraft accident brief for this incident (National Transportation Safety Board 2002).

⁵ Van Nuys Airport is also located nearby. However, at approximately 8 miles to the southwest of the nearest project feature, the airport is not within any of the Build Alternative RSAs and is discussed in this footnote for informational purposes only.

Schools

There are 15 schools within the RSA. Palmdale School District, Los Angeles Unified School District, and Burbank School District provide emergency planning and safety guidance for schools within their respective jurisdictions. Emergency and disaster preparedness plans of these districts address risks including public health, security, fires, and earthquakes, and provide information regarding family reunification and communication during potential emergency situations. Table 3.11-11 lists these public and not-for-profit private schools and education facilities within the RSA.

Table 3.11-11 Schools Located within the Resource Study Area

School Name	Address	Relevant Build Alternative
Central Subsection		
High Desert School	3620 Antelope Woods Road, Acton	SR14A
Vasquez High School	33630 Red Rover Mine Road, Acton	Refined SR14, SR14A
Charles Maclay Middle School	12540 Pierce Street, Pacoima	Refined SR14, SR14A, E1, E1A
Hillery T. Broadus Elementary School	12561 Fillmore Street, Pacoima	Refined SR14, SR14A, E1, E1A
Discovery Charter Preparatory School	12550 Van Nuys Boulevard, Sylmar	Refined SR14, SR14A, E1, E1A
Sara Coughlin Elementary School	11035 Borden Avenue, Pacoima	Refined SR14, SR14A, E1, E1A
Volunteers of America, Head Start - Van Nuys, Pierce Park Apartments	12700 Van Nuys Avenue, Pacoima	Refined SR14, SR14A, E1, E1A
YPI Valley Public Charter High School	12513 Gain Street, Pacoima	Refined SR14, SR14A, E1, E1A
PUC Community Charter Middle School and PUC Community Charter Early College High School	11500 Eldridge Avenue, Sylmar	E2, E2A
Glenwood Elementary School	8001 Ledge Avenue, Sun Valley	Refined SR14, SR14A, E1, E1A, E2, E2A
North Valley Military Institute College Preparatory Academy	12105 Allegheny Street, Sun Valley	Refined SR14, SR14A, E1, E1A, E2, E2A
Roscoe Elementary School	10765 Strathern Street, Sun Valley	Refined SR14, SR14A, E1, E1A, E2, E2A
Stonehurst Avenue Elementary School	9851 Stonehurst Avenue, Sun Valley	Refined SR14, SR14A, E1, E1A, E2, E2A
Volunteers of America, Head Start - Strathern Park	11111 Strathern Street, Sun Valley	Refined SR14, SR14A, E1, E1A, E2, E2A

School Name	Address	Relevant Build Alternative
Burbank Subsection		
George Washington Elementary School	2322 North Lincoln Street, Burbank	Refined SR14, SR14A, E1, E1A, E2, E2A

Sources: Palmdale School District, 2017; Acton-Agua Dulce Unified School District, 2017; Los Angeles Unified School District, 2016; Burbank Unified School District, 2017

The Palmdale School District provides daily transportation services to approximately 2,500 K–8 students, early childhood special education students, and Head Start students. The district also oversees the student crossings at over 50 intersections and crosswalks (Palmdale School District 2017).

The Acton-Agua Dulce Unified School District, which includes High Desert Middle School and Vasquez High School, provides “parent-pay” transportation services for students that reside beyond walking distance from the school of their enrollment. Students who are eligible to receive home-to-school transportation are those in grades K–8 who live at least 1 mile from the school of their enrollment, and those in grades 9–12 who live at least 2.5 miles from the school of their enrollment (Acton-Agua Dulce Unified School District 2017).

The Transportation Services Division of the Los Angeles Unified School District transports approximately 40,500 students daily. Children are transported for four main reasons: special education, integration, distance and hazard, and the No Child Left Behind/Core Waiver. The division oversees approximately 1,800 bus routes during the traditional school year calendar and approximately 700 routes during the summer (Los Angeles Unified School District 2016).

The Burbank Unified School District contracts for the daily transportation of approximately 170 students. This service is generally provided within the city of Burbank but extends as far as Pasadena in some cases (Pak 2017).

High-Risk Facilities and Fall Hazards

High-risk facilities (such as high-pressure pipelines, fuel storage tanks, vertical storage silos, refinery distillation columns, refineries, and chemical plants) and fall hazards (such as industrial facilities with tall structures like silos and distillation columns) could pose threats to the operations of the Palmdale to Burbank Project Section in the event of a disaster at those facilities. The Authority will develop a PHA to identify initial safety critical areas and roughly evaluate hazards. This PHA establishes the basis for the safety criteria in design, equipment and performance specifications appropriate for proper risk estimation and mitigation development for the Palmdale to Burbank Project Section. The Build Alternatives would be constructed in an active oil-producing region. Hazards associated with oil and gas fields, oil and gas wells, pipelines, and refineries primarily involve the following:

- Release of hazardous gases, such as methane, carbon dioxide, and hydrogen sulfide
- Ignition of flammable vapors or liquids
- Release of petroleum product into the environment

As discussed further in Section 3.10, Hazardous Materials and Wastes, landfills (both active and closed) can be another potential source of hazardous gases such as methane. For the purpose of this analysis, landfills within 0.25 mile of the alignment were considered to be high-priority potential environmental concerns (PEC), and landfills between 0.25 and 0.50 mile of the alignment are considered medium-priority PEC sites.

Most high-risk utility lines lie within the urban centers of Palmdale and Burbank. These hazards and their associated avoidance and mitigation measures are discussed further in Section 3.6, Public Utilities and Energy, and in Section 3.10, Hazardous Materials and Wastes.

As set forth in 14 Cal. Code Regs. 1724.3, critical wells, defined as oil or gas wells within 100 feet of a regularly used operating railway, require more stringent safety measures than non-critical wells. The Refined SR14 and E1 Build Alternative RSAs would cross one buried or plugged oil/gas well near Lopez Canyon in their respective central subsections. In the Central Subsection RSA, the E2 Build Alternative would cross two plugged and dry hole oil and gas production wells inside the ANF (see Section 3.10, Hazardous Materials and Wastes, for further detail).

Valley Fever

Valley fever (coccidioidomycosis or “cocci”) is a fungal infection caused by inhalation of fungal spores in airborne dust after soil disturbance, such as construction excavation and grading activities. The fungus that causes Valley fever resides in the soil and thrives in the dry dirt and desert-like weather conditions of Los Angeles County and the southern counties of the Central Valley. In 2017, the California Department of Public Health reported nearly 7,500 cases statewide, with Los Angeles County containing the second highest number of cases (934 cases [13 percent]) (California Department of Public Health et al. 2017).

High Winds

Antelope Valley is an area subject to high winds, especially the “Santa Anas,” which are dry, northeasterly winds that tend to flow out of the Great Basin into the San Joaquin Valley, the Southeastern Desert Basin, and the South Coast. These winds are strong and gusty and may exceed 100 miles per hour. According to the *Wind Zones in the United States Map* (Federal Emergency Management Agency no date), this RSA is in Zone 1, which is identified as having maximum wind speeds of 130 mph. Additionally, portions of Los Angeles County are part of a “special wind region” within mountainous regions prone to anomalies in wind speeds.

Geotechnical Hazards

As discussed in Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources, the Palmdale to Burbank Project Section is seismically active. Many of the plans summarized in Table 3.11-3 discuss earthquakes risks. For example, Section 5 of the *Los Angeles County All-Hazard Mitigation Plan* provides a history of earthquakes in Southern California, a summary of the regulatory background regarding seismic activity, and a threat assessment for local communities (Los Angeles County 2014). The *County of Los Angeles Operation Area Emergency Response Plan* acknowledges that a large earthquake could exceed the response capabilities of the individual cities (Los Angeles County 1998). Response and disaster relief support would be required from other local governmental and private organizations, as well as from the state and federal governments.

Dam Failure/Inundation/Flood Risk

Section 3.8, Hydrology and Water Quality, identifies parts of the RSA potentially subject to flooding and inundation, which could affect operation of the Palmdale to Burbank Project Section. Within the RSA, there are floodplain zones (Zones A, AE, and AO) that could be subject to flooding and inundation. Zones A, AE, and AO are subject to a 1 percent annual chance of flooding but are considered high-risk flood zones that could affect operation of the Palmdale to Burbank Project Section.

Landfills

Section 3.10, Hazardous Materials and Wastes, provides locations and discussion of landfills within the project footprint, plus a 0.25-mile buffer, that have the potential to release methane gas, which may present an explosion risk, consistent with Cal. Code Regs. Title 27, Section 20917, Gas Monitoring and Control at Active and Closed Disposal Sites. More detail can be found in the *Palmdale to Burbank Project Section: Hazardous Materials and Wastes Technical Report* (Authority 2019a).

Critical Infrastructure

Chapter 3.6, Public Utilities and Energy, discusses the utilities and service providers throughout the RSA as well as the critical infrastructure associated with these utilities. These utilities provide electricity, natural gas, petroleum and fuel, communications (telephone and cable/internet), water supply, sewer/wastewater, and solid waste collection. The utility service providers and their associated infrastructure serve the RSA on a daily operational basis, as well as in the case of an emergency.

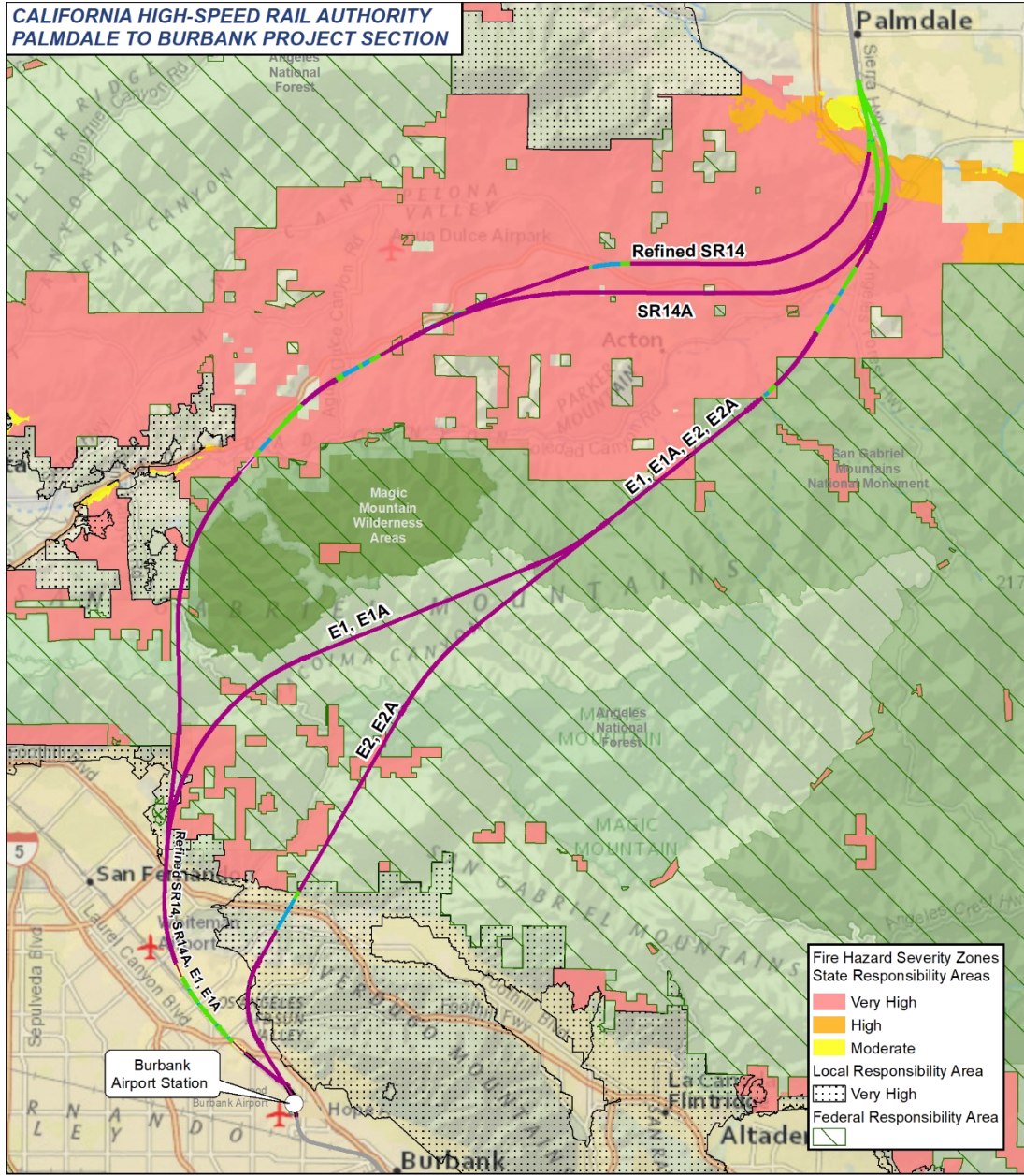
3.11.5.3 Wildfire Hazards

Due to Southern California's hot, arid climate, wildfires have historically posed a threat to communities in this region. Over the past decade, portions of the RSA have experienced major wildfires, including the 2009 Station Fire, the 2016 Sand Fire, and the 2017 Placerita Fire. In 2017, the Creek Fire threatened multiple communities within the RSA, including Santa Clarita, Lake View Terrace, Sunland-Tujunga, Shadow Hills, Sylmar, and Pacoima (Google Crisis Response Team 2017).

CAL FIRE maps FHSZs across California in state responsibility areas and local responsibility areas. State responsibility areas are areas in which the State is primarily responsible for preventing and combatting wildfires; local responsibility areas are areas in which local jurisdictions are primarily responsible for preventing and combatting wildfires. Figure 3.11-4 depicts the FHSZs for state and local responsibility areas throughout the RSA. Most of the local responsibility areas in the RSA are heavily urbanized, and thus are not mapped as Very High FHSZs. Information on wildfire hazards for the Palmdale Subsection and Maintenance Facility are provided in this section for context; however, a detailed evaluation of effects regarding wildfire hazards for the Palmdale Subsection and Maintenance Facility is provided in the Bakersfield to Palmdale Project Section EIR/EIS.

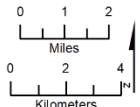
The Build Alternative RSAs encompass Moderate to Very High state responsibility FHSZs in rural areas between Palmdale and Burbank, including areas of the ANF, including SGMNM (Figure 3.11-4).

Portions of the RSA are in areas of the ANF, including SGMNM, that are not under state responsibility or local responsibility and are not mapped as Very High FHSZs, as shown on Figure 3.11-4. However, this does not mean that such areas are not at risk for wildfires. USFS has the primary financial responsibility for preventing and combatting wildfire in those portions of the ANF, including SGMNM, that are not designated as state or local responsibility areas.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 Source: Authority, 2020; USGS, PGA, 2019; National Geographic, 2021
 April 1, 2021

○ Proposed HSR Station	HSR Alignment Profile	Blue line Elevated / Aerial Structure	USFS Lands
— Other HSR Project Section	Green line At Grade	Orange line Retained Cut / Trench	Light Green Angeles National Forest
	Purple line At Grade Covered	Pink line Tunnel	Medium Green San Gabriel Mountains National Monument
	Dark Purple line Cut and Cover		Dark Green Magic Mountain Wilderness Area



Sources: Los Angeles County, 2019; CAL FIRE, 2019

Figure 3.11-4 Fire Hazard Severity Zones in the Palmdale to Burbank Project Section

3.11.5.4 Security

Major transportation systems can be targets for security threats. Airports and airstrips within 2 miles of the RSA are potential targets with regards to security threats. High-population federal and state centers are also potential targets. Figure 3.11-1 through Figure 3.11-3 show government buildings and public facilities, such as city halls, courthouses, jails, post offices, and libraries. See Table A3.11-10 in Appendix 3.11-A, Safety and Security Data, for a list of facilities that have been identified as important government buildings within the RSA. High-risk facilities are targets because of their potential for major damage and the risk of disrupting major systems. The emergency plans summarized in Table 3.11-3 establish protocols for minimizing vulnerabilities and responding to potential threats. Information on security for the Palmdale Subsection and Maintenance Facility are provided in this section for context; effects regarding security and security threats for the Palmdale Subsection and Maintenance Facility are evaluated in the Bakersfield to Palmdale Project Section EIR/EIS.

3.11.6 Environmental Consequences

This section describes the environmental consequences and impacts related to safety and security associated with construction and operations of the Palmdale to Burbank Project Section. Section 3.11.7 identifies mitigation measures to address impacts.

3.11.6.1 Overview

Impact discussions for the No Project and the Build Alternatives are organized by construction impacts and operations impacts. Construction impacts are those that arise during and as a result of building the project; they include associated infrastructure and related physical changes. Construction impacts are classified as either temporary or permanent. Operations impacts result from ongoing, routine, and occasional activities associated with the delivery of the California HSR System and related services (for example, operating HSR transit services and maintaining associated equipment and facilities).

The California HSR System would provide a safe and reliable means of intercity travel, operating on a fully grade-separated, dedicated track using contemporary safety, signaling, and ATC systems and would reduce growth in air and surface traffic. The reduction in traffic congestion as a result of the California HSR System would in turn decrease the occurrence of air, vehicular, pedestrian, and cycling accidents. Design of the system also would prevent conflicts with other vehicles, pedestrians, and bicyclists. Overall, the California HSR System would provide a safety benefit for travelers in the RSA.

In addition, and as part of the design of the California HSR System, the Authority's SSMP (Authority 2014) establishes the Authority's commitment and philosophy to achieve the highest practicable level of safety and security throughout the California HSR System's life cycle. Through the application of risk-based system safety and security programs that identify, assess, avoid, and mitigate safety hazards and security vulnerabilities of the California HSR System, the plan minimizes the risk of injury and property damage and maximizes the safety and security of HSR passengers, employees, and the public. The SSMP for the Palmdale to Burbank Project Section is based on the Authority's SSMP (Authority 2016).

As noted in Section 3.11.4.2, the Authority will incorporate IAMFs into the project design that would avoid or reduce impacts on safety and security. The IAMFs differ from mitigation measures because they are part of the project design. In contrast, mitigation measures would further reduce, compensate for, or offset project impacts that the analysis identifies under NEPA or concludes are significant under CEQA.

The Build Alternatives would not substantially increase hazards due to design features, nor would they increase emergency response times, result in inadequate emergency access, expose people to significant risk, or require new emergency facilities to be built. Accordingly, the Build Alternatives would result in less than significant impacts related to safety and security under CEQA.

This section evaluates how the No Project Alternative and the Build Alternatives could affect safety and security. The impacts under the No Project Alternative are described in each topic considered. The impacts of the Build Alternatives are described in Section 3.11.6, Environmental Consequences. Impact S&S#1, Impact S&S#2, Impact S&S#7, and Impact S&S#3 are described in relation to the Central and Burbank Subsections as defined in Chapter 2, Alternatives. The impacts of the Build Alternatives are as follows:

- **Construction Impacts on Emergency Response and Services**
 - Impact S&S#1: Temporary Interference with Emergency Response Times from Construction Activities.
 - Impact S&S#2: Permanent Interference with Emergency Response Times from Construction Activities.
- **Operations Impacts on Emergency Response and Services**
 - Impact S&S#3: Permanent Interference with Emergency Response.
 - Impact S&S#4: Interference with Emergency Response from Train Accidents and Increased Activity at Stations and Facilities.
- **Construction Impacts on Community Safety and Security**
 - Impact S&S#5: Temporary Exposure to Criminal Activity at Construction Sites.
 - Impact S&S#6: Temporary Exposure to Construction Site Hazards.
 - Impact S&S#7: Temporary Exposure to Traffic Hazards.
 - Impact S&S#8: Permanent Exposure to Traffic Hazards.
 - Impact S&S#9: Permanent Interference with Airport Safety.
 - Impact S&S#10: Temporary Exposure to Valley Fever.
 - Impact S&S#11: Temporary Exposure to Risk from High-Risk Facilities.
- **Operations Impacts on Community Safety and Security**
 - Impact S&S#12: Permanent Operational Safety Impacts.
 - Impact S&S#13: Permanent Exposure to High-Risk Facilities and Fall Hazards.
 - Impact S&S#14: Permanent Criminal and Terrorist Activity.
 - Impact S&S#15: Permanent Safety Hazards to Schools.
- **Construction Impacts from Wildfire**
 - Impact S&S#16: Temporary and Permanent Exposure to Wildfire Hazards.
 - Impact S&S#17: Post-Wildfire Flooding and Landslide Risks.
- **Operations Impacts from Wildfire**
 - Impact S&S#18: Exposure of Passengers to Pollutant Concentrations Due to Wildfire.
 - Impact S&S#19: Fire and Wildfire Hazards from Operations and Maintenance.

3.11.6.2 No Project Alternative

The analysis of impacts under the No Project Alternative is based on existing conditions and the funded and programmed transportation improvements and land use projects that are expected to be developed and in operation by 2040. Development to accommodate predicted 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 built by 2040 include transportation, housing, commercial, and other types of development projects.

It is anticipated that under the No Project Alternative, safety and security in the RSA would follow the trends of the past decade. 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. 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.

Under the No Project Alternative, existing emergency response plans and procedures would not be negatively affected, and safety conditions related to motor vehicles, pedestrians, and bicyclists would not change. Conditions related to airports, critical facilities, and high-risk facilities in the RSA would not change as a result of planned future projects. Emergency responders would continue to experience delays throughout the RSA at numerous at-grade crossings of the UPRR, BNSF Railway, and San Joaquin Valley Railroad when trains block crossings.

Increased vehicular traffic volumes over the next 25 years would be expected to result in increased traffic accidents, including injuries and fatalities. However, planned roadway capacity expansions and other improvements would improve operations. These programmed roadway projects would incorporate design features that would reduce the potential for automobile and truck accidents. For these reasons, it is expected that existing accident trends in the RSA would continue into the future. Counties and cities have the financial mechanisms to meet service level goals for emergency responders with the population growth planned for the RSA. Therefore, no significant impacts on accident prevention or emergency response are anticipated.

Future residential and commercial growth expected in Los Angeles County could negatively affect safety and security in the RSA; however, crime rates depend, in part, on economic conditions and predictions regarding future crime levels would therefore be speculative. As part of their separate environmental approval processes, 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. Appendix 3.11-A, Safety and Security Data, provides more detail about existing crime rates in the RSA.

The No Project Alternative assumes the Palmdale to Burbank Project Section would not be built. Future residential and commercial growth expected in Los Angeles County could result in increased wildfire hazards in the RSA. As part of their separate environmental approval processes, planned development and transportation projects that would occur as part of the No Project Alternative would likely include various forms of mitigation to minimize or avoid impacts regarding wildfire hazards. Therefore, it is expected that the existing wildfire conditions within the RSA would continue into the future. No significant impacts resulting from wildfire hazards are anticipated under the No Project Alternative.

3.11.6.3 Build Alternatives

The following impacts would be common to all six Build Alternatives unless otherwise noted below.

Emergency Response and Services

Construction Impacts

Construction of the Palmdale to Burbank Project Section would involve clearing and grubbing; handling, storing, hauling, excavating, and placing fill; pile driving; and construction of bridges, tunnels, road modifications, and utility upgrades and relocations, including reconductoring (i.e., increasing the current capacity of a transmission or distribution line by replacing the conductor) of electric utilities that may involve the use of helicopters. The project would also involve construction of HSR electrical systems, railbeds, and the Burbank Airport Station. Chapter 2, Alternatives, further describes construction activities and how the California HSR System would be built.

Impact S&S#1: Temporary Interference with Emergency Response Times from Construction Activities.

In general, HSR construction activities would be typical of other large infrastructure projects and would not independently increase the demand for emergency services enough to affect and emergency response times. Construction activities associated with the Build Alternatives would require the temporary closure of roads and roadway travel lanes, construction detours adjacent to highways, and changes in traffic routes along closures. Out-of-direction travel resulting from detours would typically be limited to 1 or 2 miles. The Build Alternatives would each require the same types of closures, but there would be differences in the locations of the potential temporary road closures. These closures, which are summarized in Table 3.11-12, could increase emergency response and emergency evacuation times, and the exceedance of performance objectives of emergency service providers, including law enforcement, fire departments, and emergency services. See Appendix 3.11-A, Safety and Security Data, for emergency services response times and Appendix 3.11-B, Existing and Proposed Railroad Crossing Definitions, for specific road crossings in the Palmdale to Burbank Project Section.

Table 3.11-12 Temporary Road Closures Associated with Palmdale to Burbank Project Section Construction

Subsection	Build Alternative					
	Refined SR14	SR14A	E1	E1A	E2	E2A
Central	15	13	15	13	7	5
Burbank	2	2	2	2	0	0
Total	17	15	17	15	7	5

Source: Authority, 2019c

Rural areas, or areas with low population densities, would experience larger increases in response times than urban areas, because of the greater distances between residences and emergency responders and the greater distances emergency responders would be required to travel to find an alternate route in the event of a road closure. In rural portions of the RSA, the impact would be regional because responders from multiple jurisdictions may be involved. In these areas, the Build Alternatives could affect service providers that are located outside of, but have service boundaries or provide service within, the Build Alternatives' vicinity.

The Authority will develop and implement a construction safety transportation management plan (SS-IAMF#1) that will incorporate emergency vehicle access procedures. These procedures would avoid impacts on the accessibility of emergency service providers, response times, or other emergency service performance objectives through coordination with local jurisdictions to maintain emergency vehicle access and by establishing detour provisions for temporary road closures and routes for construction traffic.

A construction transportation plan will be implemented that establishes procedures for temporary road closures including maintaining 24-hour access by emergency vehicles, maintaining access to residences and businesses during construction, lane closure, signage and flag persons, temporary detour provisions, alternative bus and delivery routes, and pedestrian access (TR-IAMF#2). Construction road closures will be staggered so that the next adjacent road to the north and south of a road temporarily closed for construction would remain open to accommodate detoured traffic. This will typically limit out-of-direction travel to 1 or 2 miles during temporary road closures.

Although construction would take place near public and private facilities throughout each of the Build Alternatives, effective coordination, implementation of emergency vehicle access procedures and a traffic control plan, and staggered road closures would minimize temporary construction impacts on emergency service providers and their ability to meet established service ratio goals, response times, and performance objectives for emergency service providers.

CEQA Conclusion

Temporary road closures, relocations, and changes in traffic that could result in temporary interference with emergency response and access would be effectively minimized through development and implementation of a construction safety transportation management plan (SS-IAMF#1) as part of the California HSR System. The construction transportation plan (TR-IAMF#2) will minimize traffic impacts caused by temporary road closures by providing traffic control on several elements, including provisions for 24-hour access by emergency vehicles. With implementation of these IAMFs, construction of the Build Alternatives would not result in inadequate emergency services or access and no new or physically altered emergency service facilities would be required. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#2: Permanent Interference with Emergency Response Times from Construction Activities.

Project construction would require permanent road closures that could disrupt traffic patterns, including emergency vehicle access. As shown in Table 3.11-13, the Refined SR14, E1, and E2 Build Alternatives would involve 9, 13, and 11 permanent roadway closures, respectively. The SR14A, E1A, and E2A Build Alternatives would involve 5, 12, and 10 permanent roadway closures, respectively. See Chapter 2, Alternatives, for a full description of the permanent road closures.

Table 3.11-13 Permanent Road Closures Associated with Palmdale to Burbank Project Section Construction

Refined SR14	Build Alternative				
	SR14A	E1	E1A	E2	E2A
9	5	13	12	11	10

Source: Authority, 2019c

Each permanent road closure would be coordinated with Caltrans or other local jurisdictions and designed in accordance with the relevant standards to maintain emergency response times (CPUC 2017). Delays would be avoided because emergency responders would no longer have to wait at traffic signals while trains pass. In addition, grade separations would prevent motor vehicles, bicycles, and pedestrians from crossing the tracks and being hit by trains. Because the entire project would be grade-separated, there would be no point, other than controlled pedestrian access at the station, where motor vehicles, bicycles, or pedestrians could cross the tracks. Therefore, both the hazards and the delays associated with at-grade crossings would be eliminated.

The permanent road closures, roadway realignments, and grade separations would disrupt the transportation network and increase traffic congestion at intersections and roadway segments near the Burbank Airport Station (see Section 3.2, Transportation, for a detailed discussion of traffic impacts). Impacted intersections would potentially increase emergency response times because they would be located on roadways that emergency responders would likely use in an emergency response situation. However, project design would include coordination with emergency responders to incorporate roadway modifications that maintain existing traffic patterns and fulfill response route needs.

CEQA Conclusion

Project construction would require permanent road closures, roadway realignments, and grade separations that could disrupt traffic patterns. Because the project design would include coordination with emergency responders to incorporate roadway modifications that maintain existing traffic patterns and fulfill response route needs, emergency service providers would be able to maintain acceptable performance objectives and no new or expanded emergency service

facilities would be required. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Operations Impacts

Impact S&S#3: Permanent Interference with Emergency Response.

Each Build Alternative would operate within an access-controlled right-of-way. Emergency service providers (medical, fire, and police) could need to access this right-of-way, as well as the Burbank Airport Station, in the event of an accident or other emergency situation. In these emergency situations, emergency response could be delayed due to the limited number of access points to access-controlled right-of-way and Burbank Airport Station. However, the Build Alternatives each include provisions for emergency service access to the access-controlled right-of-way including, but not limited to, the following:

- Permanent access roads would be built to provide at least one access portal for each tunnel to support tunnel operations and maintenance activities. Tunnel portal areas would include areas for staging of emergency response vehicles and personnel and safe evacuation and assembly of passengers.
- For tracks in trenches and tunnels, passenger walkways would be incorporated to allow emergency access and evacuation routes. Passenger walkways would be located along the trench/tunnel walls on the same side as the access/egress points, where possible, and would be illuminated to provide safe passage in the event of an emergency.
- Tunnel design would include a central, fire-rated dividing wall that would separate the two tracks of each single tunnel into two independently ventilated railways to allow access in the event of an emergency. Safety egress would be achieved via fire-rated doorways through the tunnel dividing wall (Authority 2010a).

The Authority will incorporate additional safety and security measures into California HSR System operating procedures, including a fire and life safety program and a security and emergency response plan (SS-IAMF#2). This IAMF will also require the Authority to prepare an SSPP and an SSMP prior to commencement of operations. The Authority will coordinate with local emergency service providers in developing and implementing the SSPP and SSMP to establish an efficient and coordinated response protocol, systems, and procedures across the multiple agencies that may be involved in responding to an emergency incident, including establishing coordinated procedures for emergency responder access to the HSR access-controlled right-of-way, aerial track, trenches, and tunnels. Even with implementation of SS-IAMF#2 and design features, mitigation will still be required in order to maintain adequate provision of emergency services throughout project operations.

CEQA Conclusion

The California HSR System would minimize interference with emergency response by including design provisions and procedures for emergency service access to the HSR right-of-way and the Burbank Airport Station through preparation and implementation of an SSPP and an SSMP prior to project operations (SS-IAMF#2). Although design provisions would reduce the project's interference with emergency services, emergency response could still be disrupted by changes in local circulation patterns associated with project implementation. This would represent a significant impact, and CEQA requires mitigation. S&S-MM#1 will require the Authority to monitor the response of local fire, rescue, and other emergency service providers to incidents. The Authority will enter a cost-sharing agreement with these providers to fund the Authority's fair share of emergency service needs created by the Palmdale to Burbank Project Section ensuring that services are made available. Implementation of S&S-MM#1 will ensure emergency service providers maintain acceptable emergency response times, service ratios, and acceptable performance objectives and no new emergency service facilities will be required. Therefore, with implementation of S&S-MM#1, impacts on emergency services would be reduced to less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives.

Impact S&S#4: Interference with Emergency Response from Train Accidents and Increased Activity at Stations and Facilities.

Accidents related to the California HSR System activities could increase the demand for emergency services in the RSA. To prevent such an increase, the Build Alternatives would not include at-grade road crossings, thereby preventing vehicles, bicycles, and pedestrians from crossing the tracks. There would be no crossings where motor vehicles, bicycles, or pedestrians could cross the tracks at-grade. As a result, the potential hazards of at-grade crossings would be eliminated. As a part of SS-IAMF#2, the Authority will collaborate with local responders to develop and implement fire and life safety and security programs, an SSP, and an SSMP for emergency response. The SSP will specify implementation of design features intended to maintain security and facilitate emergency response at stations, within the right-of-way, and onboard trains, including emergency walkways on both sides of the tracks for both elevated and at-grade sections of the alignment to allow for emergency response access. Ground access will also be maintained for elevated tracks where access to ground equipment will be required for emergency response. In accordance with SS-IAMF#2, the Authority will coordinate with local emergency service providers in developing and implementing both the SSP and SSPP to establish an efficient and coordinated response protocol, systems, and procedures for the multiple agencies that may be involved in responding to an emergency incident, including establishing coordinated procedures for emergency responder access to the HSR access-controlled right-of-way, aerial track, trenches, and tunnels. These measures would facilitate effective and coordinated response in the event of an accident or other emergency.

For emergency preparedness, the Authority will collaborate with local responders to develop a fire and life safety and security program for emergency response in case of an accident or other emergency (SS-IAMF#2). Because the project has been designed to minimize accidents, average response times are not expected to change, and new or physically altered government facilities that would create physical impacts on the environment are not anticipated.

As described in Section 3.12, Socioeconomics and Communities, and Section 3.13, Station Planning, Land Use, and Development, the Burbank Airport Station would introduce additional activity centers into the urban industrialized areas. The station would introduce new passengers into the cities, which could directly increase the demand for fire and ambulance services.

Because the entire project would be fully grade-separated, motor vehicles, bicycles, and pedestrians would be prevented from crossing the tracks and being hit by trains. The fire and life safety and security program and SSMP adopted by the Authority (SS-IAMF#2) will minimize the potential for increased frequency or severity of train accidents, and would therefore not increase demand for emergency services. Additionally, implementation of S&S-MM#1 will ensure emergency service providers maintain acceptable emergency response times, service ratios, and acceptable performance objectives. Therefore, expansion of existing fire, rescue, and emergency services facilities would not be needed, and new or physically altered emergency response facilities that could create physical impacts on the environment are not anticipated to be needed as a result of the project.

In order to minimize impacts associated with new activity centers such as the Burbank Airport Station, the Authority will develop and implement an SSPP prior to commencement of California HSR System operations (SS-IAMF#2). Implementation of the SSPP will address hazards identified in the PHA and other hazard analyses conducted as part of the design process. The main components of an SSPP include a risk-based hazard management program and risk-based hazard analysis for HSR operations. The Authority will implement the SSPP to identify hazards and resulting risks on the HSR operating system and will apply the results of the hazard analysis to develop and implement methods to mitigate or eliminate the identified hazards and risks to the

Key Definitions

ATC—Automatic Train Control

SEPP—Security and Emergency Preparedness Plan

SSP—System Security Plan

SSPP—System Safety Program Plan

SSMP—Safety and Security Management Plan

extent practicable (SS-IAMF#3). The SSPP will describe the procedures, processes, and programs the Authority has implemented that will support the safety and security goals of the SSPP. These procedures, processes, and programs will include a maintenance, inspection, and repair program; a rules compliance and procedures review program; an employee and contractor training program; and a public safety outreach program.

The SSMP and SSP will avoid incidents to which local emergency responders could be required to respond, thereby minimizing the potential for increased demand for emergency services that could necessitate construction of new emergency response infrastructure or expand existing emergency response infrastructure. Because these plans are risk-based (SS-IAMF#3), hazards that represent higher levels of risk will receive higher levels of resources and analysis. The Authority will identify risk and hazards and apply methods to reduce or eliminate the identified hazards, thereby reducing risk. The fire and life safety and security programs will be coordinated between the Authority and local emergency service providers to promote a coordinated and effective approach to emergency preparedness and emergency response for HSR operations, which would improve the coordination and effectiveness of emergency response and thereby reduce the need for construction of new emergency response infrastructure or expansion of existing infrastructure to provide services. Implementation of operations safety features including the ATC system would reduce the incidence and severity of accidents, which would also reduce the demand for emergency services. Design of the California HSR System would include safety features that would minimize changes in emergency service provider service ratios, response times, and performance from operations of the HSR trains, stations, and facilities, avoiding the potential need for development of new emergency service provider resources and facilities.

CEQA Conclusion

Impacts resulting from train accidents would be minimized by grade separation and implementation of emergency plans. Impacts of increased demand for fire, rescue, and emergency services at station facilities would be minimized as part of the California HSR System with implementation of Authority-developed emergency preparedness plans in SS-IAMF#2 and risk-based plans in SS-IAMF#3. Although design provisions would reduce the project's interference with emergency services, increased demand for emergency services above and beyond that which is currently provided in the service area could occur from project implementation. This would represent a significant impact, and CEQA requires mitigation. Implementation of S&S-MM#1 will ensure emergency service providers maintain acceptable emergency response times, service ratios, and acceptable performance objectives and no new emergency service facilities would be required. Therefore, with implementation of S&S-MM#1, this impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives.

Community Safety and Security

Construction Impacts

Impact S&S#5: Temporary Exposure to Criminal Activity at Construction Sites.

Criminal activity at and around HSR construction sites could include theft of equipment and materials, or vandalism after work hours. Such theft would not be expected to be substantially different from what occurs at other large construction project sites. The SSMP that will be implemented by the contractor prior to commencement of construction (SS-IAMF#2) will include security lighting, fencing, and monitoring measures to provide security to construction sites and protect the security of construction workers and equipment. Security lighting will be focused on the site to allow for the monitoring of construction sites and deter crime. These measures would minimize temporary security impacts of construction and would not result in additional demands on emergency services.

CEQA Conclusion

The risk of criminal activity on construction sites would be minimized by storing equipment and materials in secured areas and using security personnel and security lighting to monitor equipment after work hours as part of the California HSR System. The SSMP implemented by the contractor prior to commencing construction (SS-IAMF#2) will include security lighting, fencing, and monitoring measures to provide security to construction sites and protect the security of construction workers and equipment. These security measures would minimize the potential for theft and vandalism. Therefore, criminal activity at project construction sites would not be a safety hazard for people residing or working in the RSA. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#6: Temporary Exposure to Construction Site Hazards.

Construction of the project would require excavation, construction of elevated guideways, and installation of electrical systems. These construction activities would involve heavy equipment on-site, earthwork, and other major construction activities, including the transportation of overweight and oversized materials. Throughout construction, workers and nearby community members could be exposed to hazards associated with construction site equipment and activities. Refer to Section 3.10, Hazardous Materials and Wastes, for an analysis of the potential health and safety risks to the public and workers from the exposure to hazardous wastes and materials generated during construction.

Construction would increase the risk of exposure to construction equipment and activity hazards that could result in workplace accidents, potentially resulting in accidental injuries and deaths to construction workers and also potentially to the public in the event of a workplace accident, such as a fire or explosion, that resulted in off-site consequences. Construction activities could also result in exposure of construction workers to hazardous chemicals.

Worksite safety in California, including construction worksite safety, is regulated by provisions of Title 8 of the Cal. Code Regs. and is overseen by Cal-OSHA. Title 8 requires compliance with standard procedures to prevent construction worksite accidents and requires a written workplace injury and illness prevention program to be in place (Cal-OSHA 2013a, 2013b).⁶ Construction activities will also be subject to standards included in California HSR Standard Safety Procedures (Authority 2014). In addition to legal requirements, the contractor will manage potential exposure to workplace hazards through implementation of Construction Safety and Health Plans for each phase of project construction (SS-IAMF#2). Each of these plans will establish the minimum safety and health standards for contractors of, and visitors to, project construction sites. Each of these plans will require the contractor to develop and implement site-specific measures that address regulatory requirements protective of human health and property at each construction site. Standard implementation of a Construction Safety and Health Plan during construction in compliance with legal requirements would reduce risks to human health during construction by establishing protocols for safe construction operations, including daily safety awareness meetings and training to establish a safety culture among the construction workforce.

The Authority will develop and implement an SSMP (SS-IAMF#2), which includes construction worker safety standards, worker safety and health plans, fire and life safety programs, construction on-site security plans, and emergency response and evacuation procedures to maintain the safety of construction workers and the public during HSR construction. Through the implementation of SS-IAMF#2, which includes safety programs and safety standards, impacts from construction site hazards and accident risks that could compromise the safety or health of workers or nearby community members would be minimized.

The Palmdale to Burbank Project Section area is an active oil-producing region. The Authority will develop and implement design standards requiring the contractor to identify and inspect active and abandoned oil and natural gas wells prior to construction (SS-IAMF#4). In the event that oil

⁶ Cal. Code Regs., Title 8, Section 1502 et seq.

and natural gas wells are discovered during construction activities, active wells will be abandoned or relocated in accordance with the California Department of Conservation, Division of Oil, and Gas and Geothermal Resources standards and in coordination with the well owners.

There is one plugged oil/gas dry hole within 150 feet of the construction footprints of the Refined SR14, SR14A, E1 and E1A Build Alternatives, located directly north of the State Route 118/Interstate 210 interchange, and both the E2 and E2A Build Alternatives would encounter one plugged and one buried oil and gas production well. As discussed in Impact HMW#5 in Section 3.10, Hazardous Materials and Wastes, the construction management plan implemented by the contractor will establish procedures for the disturbance of undocumented contamination, thereby minimizing the potential for spills associated with oil and natural gas resources or facilities (HMW-IAMF#4). Implementation of safety procedures regarding spill prevention and transportation of materials, as well as adherence to state regulations regarding the handling of hazardous waste, would further avoid and/or minimize Impacts (HMW-IAMF#6 through HMW-IAMF#8).

CEQA Conclusion

Despite the potential exposure of construction workers, visitors, or the public to construction site hazards, implementation of SS-IAMF#2 and SS-IAMF#4 would minimize construction site hazards and accidents. Additionally, the Build Alternatives would incorporate procedures for addressing risks from undocumented hazardous wastes (HMW-IAMF#4) and for transportation of hazardous materials (HMW-IAMF#6 through HMW-IAMF-8). Accordingly, the Palmdale to Burbank Project Section would not result in a safety hazard for people residing or working in the RSA. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#7: Temporary Exposure to Traffic Hazards.

Project construction would require some temporary road closures, and traffic detours would be established around these construction sites for the Build Alternatives (refer to Chapter 2, Alternatives, for more details regarding the road design features for each Build Alternative). Motor vehicle drivers, bicyclists, and pedestrians may not react in a timely manner when encountering a new detour, road closure, or realignment, and could cause an accident. The operation of construction vehicles in the vicinity of these temporary closures and detours could also create traffic hazards and add an increased risk of traffic accidents.

Where the Build Alternatives would cross existing roads, project construction would create grade separations so that roads would cross either over or under the HSR tracks. In total, between 9 and 13 existing roads would be modified to create grade separations, depending on the Build Alternative. Some of these grade separations would replace existing at-grade rail crossings, while others would be new rail crossings.

Grade-separated road crossings would be built at the same general locations as the existing roads (for further discussion of grade separations, see Chapter 2, Alternatives). Existing roads would be temporarily closed, and traffic would be detoured onto other roads during construction of the grade-separated road crossings. These temporary closures would typically last from 8 to 10 months but could last up to 18 months.

The Authority will develop and implement a construction safety transportation management plan (SS-IAMF#1), which will specify the contractor's procedures for implementing temporary road closures, including maintaining vehicle, bicycle, and pedestrian access to residences and businesses during construction, lane closure safety barriers, signage and flag persons to direct vehicle and bicycle traffic and pedestrians, temporary detour provisions, alternative bus and delivery routes, emergency vehicle access, and alternative access locations. The construction safety transportation management plan will establish procedures for the contractor's coordination efforts with local jurisdictions for maintaining emergency vehicle access during HSR construction. The contractor will identify traffic hazard impacts during HSR construction and will consult with each potentially negatively affected local jurisdiction to establish and implement a plan to maintain traffic safety during project construction. The plan will address the design and implementation of road closures and realignments; timing of construction work; operation of

construction work areas including placement of barriers, signage, and flag persons; and procedures for movement of construction vehicles into and out of the work areas.

CEQA Conclusion

Implementation of a construction safety transportation management plan (SS-IAMF#1) would minimize exposure of motor vehicle drivers, pedestrians, and bicyclists to new traffic hazards resulting from temporary road closures, detours, and construction activities. Effective coordination with local jurisdictions, implementation of emergency vehicle access procedures and a traffic control plan, staggered road closures, and vehicle and bicycle traffic and pedestrian safety project features would minimize impacts on the safety of motor vehicle drivers, pedestrians, and bicyclists. Therefore, the Palmdale to Burbank Project Section would not result in a safety hazard for people residing or working in the RSA. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#8: Permanent Exposure to Traffic Hazards.

All Build Alternatives would construct a fully grade-separated HSR corridor. This would entail building grade-separated overpasses and underpasses, as well as permanent road closures and roadway realignments. Table B3.11-1 in Appendix 3.11-B, Existing and Proposed Railroad Crossing Definitions, describes the proposed HSR road crossing configurations for each Build Alternative. As shown in Table 3.11-13 and discussed further in Chapter 2, Alternatives, construction of the Build Alternatives would result in permanent road closures. The Refined SR14 and SR14A Build Alternatives would require the fewest (9 and 5, respectively) while the E1 and E1A Build Alternatives would require the most (13 and 12, respectively). The HSR station in Burbank would include controlled pedestrian access to the station platforms.

Road improvements implemented as part of project construction would include construction of overpasses and underpasses and related road improvements (e.g., local street widening, new traffic signals, and new traffic restrictions), which would increase motor vehicle, pedestrian, and bicycle safety by removing existing at-grade crossings of railroad tracks and remediating existing traffic hazards. There would be a beneficial effect on traffic safety from the construction of grade-separated crossings and road improvements that would be implemented as part of the construction of the project. The roadway improvements included in project construction would comply with the *Caltrans Highway Design Manual* (Caltrans 2016) design standards for pedestrian and bicycle safety (Volume 2, Appendix 2-D) and any other applicable standards, requirements, and guidelines established by local jurisdictions. Therefore, effective design features would minimize traffic hazard exposure impacts on motor vehicle drivers, pedestrians, and bicyclists.

CEQA Conclusion

Implementation of roadway improvements built as part of the California HSR System would create permanent road closures and realignments. Traffic hazards resulting from road closures and realignments would be minimized through construction of overpasses and underpasses to route traffic over or under the HSR tracks. Therefore, the Palmdale to Burbank Project Section would not result in a safety hazard for people residing or working in the RSA. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#9: Permanent Interference with Airport Safety.

Safety hazards to aviation include the development of land uses that are inconsistent with airport operations or the imposition of airspace obstacles that represent hazards to aviation. Construction of structures that would exceed structure height limits established by FAR Part 77 and in airport land use planning documents would represent navigation hazards to aircraft and hazards to people on the ground in areas exposed to aircraft overflight.

The potential for the Build Alternatives to result in safety hazards in relation to airports within 2 miles of the Build Alternatives has been analyzed to assess whether the project footprint would

encroach into the height limit contours of airports or airstrips. Table 3.11-14 show airports within 2 miles of each Build Alternative, whether above- or below-ground.

Table 3.11-14 Airports and Airstrips Located within the Resource Study Area

Relevant Build Alternative	Airports or Airstrips	Distance from the Project Footprint
Central Subsection		
Refined SR14, SR14A	Agua Dulce Airpark	2 miles
Refined SR14, SR14A, E1, E1A	Whiteman Airport	500 feet
Burbank Subsection		
Refined SR14, SR14A, E1, E1A, E2, E2A	Hollywood Burbank Airport	500 feet

Source: Google Earth, 2020
N/A = not applicable

FAR Part 77 defines imaginary surfaces as airspace surfaces that are used to identify obstructions to air navigation. In effect, these surfaces are used to delineate a three-dimensional buffer surrounding an airport to protect the airspace from any hazards to air navigation. Part 77 limits the height of structures to 200 feet above ground level, or above the established airport elevation, whichever is higher, within 1.2 miles of the airport. The six Build Alternatives would be within 1.2 miles of the Whiteman Airport and the Hollywood Burbank Airport. However, the project would not build structures of this height within 1.2 miles of these airports. Thus, the Build Alternatives would not conflict with operations of the above airports.

At their closest point, at-grade and viaduct segments of the Refined SR14 Build Alternative would be approximately 2 miles away from the Agua Dulce Airpark. Such above-ground segments would run parallel to the existing SR 14 corridor. While the Agua Dulce Airpark has not adopted an airport land use plan, the Build Alternatives would be unlikely to present a safety hazard to the Agua Dulce Airpark given the distance and presence of similar infrastructure nearby. The SR14A Build Alternative alignment would not have at grade or viaduct segments within 2 miles of Agua Dulce Airpark, and therefore would not present a safety hazard to the airport.

Portions of the Refined SR14, SR14A, E1, and E1A Build Alternatives would be located approximately 500 feet from the Whiteman Airport. The Whiteman Airport runway has an elevation of 964 feet at the south end (Los Angeles County 2011). The Refined SR14, SR14A, E1, and E1A Build Alternatives would be below ground surface within bored/mined tunnels at the nearest point to the Whiteman Airport (measured from the southernmost point of the airport). The alignments would surface approximately 0.7 mile southeast of the runway and would be built at-grade for approximately 0.2 mile before transitioning onto a viaduct structure. The Refined SR14, SR14A, E1, and E1A Build Alternatives would be built on a viaduct structure within 1.2 miles of the Whiteman Airport; however, the viaduct would have an elevation of approximately 960 feet (see Volume III, Alignment Plans). Given that the HSR viaduct would be at a lower elevation than the Whiteman Airport runway, the Refined SR14, SR14A, E1, and E1A Build Alternatives would not obstruct air navigation or conflict with the FAR Part 77 defined horizontal surface zone height limits.

Each of the Build Alternatives would include a Burbank Airport Station east of the Hollywood Burbank Airport. Elevations at the Hollywood Burbank Airport range from approximately 750 feet above mean sea level to 700 feet above mean sea level (Burbank-Glendale-Pasadena Airport Authority 2016). Each of the six Build Alternatives would be in tunnel beneath the Hollywood Burbank Airport and the Burbank Airport Station would include surface facilities with a maximum height of 40 feet above ground level. A portion of the project would cross under Runway 8-26,

Taxiway D, the proposed extension of Taxiway C, and critical airport safety zones at Hollywood Burbank Airport.

To address the potential for disruption of airfield and airspace operations at Hollywood Burbank Airport as a result of operation of the HSR Build Alternative, the each of the HSR Build Alternatives incorporates SS-IAMF#5, which requires the Authority to submit designs and/or information to the FAA as required by the C.F.R., Title 14, Part 77, to ensure that permanent HSR features within and adjacent to the boundary of Hollywood Burbank Airport do not intrude into imaginary surfaces as defined in 14 C.F.R. Section 77.9(b). SS-IAMF#5 also requires the implementation of measures required by the FAA to ensure continued safety of air navigation during HSR Build Alternative operation pursuant to 14 C.F.R Section 77.5(c). If necessary, coordination with Hollywood Burbank Airport to amend the current Airport Layout Plan (Burbank-Glendale-Pasadena Airport Authority 2017) for any permanent construction-related facilities required for the HSR project will be submitted to the FAA for approval. The Airport Layout Plan amendment would be developed consistent with FAA's Standard Operating Procedures,⁷ including Standard Operating Procedure No. 2. In addition to the Airport Layout Plan amendment, as stated in SS-IAMF#5, the Authority will submit engineering design and/or information to the Burbank-Glendale-Pasadena Airport Authority for ultimate submittal to the FAA as required by 14 C.F.R Part 77, to:

- Ensure that permanent HSR features within and adjacent to the boundary of Hollywood Burbank Airport do not intrude into imaginary surfaces as defined in 14 C.F.R. Section 77.9(b).
- Ensure that the locations of planned HSR construction and construction staging areas within and adjacent to the boundary of Hollywood Burbank Airport, the types and heights of proposed equipment, and the planned time/duration of construction, do not intrude into imaginary surfaces as defined in 14 C.F.R. Section 77.9(b).
- As a condition for obtaining airport improvement grants from the FAA, implement measures required by the FAA to ensure continued safety of air navigation during HSR construction and operation, pursuant to 14 C.F.R. Section 77.5(c), and ensure that the planned HSR facilities do not violate any grant assurances that are imposed at Hollywood Burbank Airport.

Each of the HSR Build Alternatives also incorporates SS-IAMF#6, which requires continued coordination with the FAA and the Burbank-Glendale-Pasadena Airport Authority to avoid conflicts due to overlapping construction schedules and future operations at the Hollywood Burbank Airport as design of the Build Alternatives progresses. SS-IAMF#6 will require coordination to support full operations of the runway and taxiway systems during construction.

Notice of proposed construction or alteration (FAA form 7460-1) was filed with the FAA in 2019 and would be filed again prior to construction at Hollywood Burbank Airport.⁸ Coordination with the FAA is ongoing and on March 5, 2020, the FAA provided a determination to the Authority that the FAA does not object to the construction of the portion of the tunnel under Runway 8-26, Taxiway D, the proposed extended Taxiway C, and critical airport safety zones with respect to the safe and efficient use of navigable airspace and the safety of persons and property on the ground, conditioned on certain requirements outlined in this determination. This determination expires on September 5, 2021, unless extended, revised or terminated. Additionally, this determination does not cover the construction of the station building north of Runway 8-26; FAA recommended refile a notice for this construction closer to the start of construction.

The Authority will continue coordination with the FAA to ensure all necessary approvals are obtained. With incorporation of SS-IAMF#5 and SS-IAMF#6, HSR construction and operations would not substantially increase hazards because of being located within an airport or airport land

⁷ <https://www.faa.gov/airports/resources/sops/>

⁸ The FAA form 7460-1 filed on November 1, 2019 did not include elements such as the overhead contact system, rolling stock envelope, and/or sound walls. Further details would be provided to the FAA in a later phase of design.

use compatibility plan area, and it would not expose people residing or working in the resource study area to a safety hazard in the vicinity of an airport or private airstrip.

CEQA Conclusion

The Palmdale to Burbank Project Section would not exceed height limits established in FAR Part 77. Furthermore, implementation of SS-IAMF#5 and SS-IAMF#6 would ensure continued coordination between the Authority and the FAA and Burbank-Glendale-Pasadena Airport Authority to ensure continued safety of air navigation during HSR construction, and the avoidance of conflicts during construction and operations at the Hollywood Burbank Airport. As such, the Palmdale to Burbank Project Section would not substantially increase hazards as a result of being within an airport or adopted airport land use plan (refer to Table 3.11-2 for a list of airport plans considered), and would not expose people residing or working in the project area to a safety hazard in the vicinity of an airport or private airstrip. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#10: Temporary Exposure to Valley Fever.

Construction activities for the Build Alternatives would require grading and excavation and landscaping that could temporarily disrupt soil containing the fungus that causes Valley fever. Disrupting soil that contains this fungus could cause airborne dust, which could be inhaled by construction workers and visitors to the site. The public could be exposed to the fungus that causes Valley fever from off-site transport of fill material on public roads and from fugitive dust outside the boundaries of the construction sites. Inhalation of airborne dust that contains the fungus that causes Valley fever could pose a threat to health if a fungal infection is contracted.

Valley Fever

Valley fever is an infection caused by a fungus (*Coccidioides*) that lives in the soil. People can contract Valley fever by breathing in the microscopic fungal spores. Valley fever does not spread from person to person. Symptoms of Valley fever include flu-like symptoms such as fatigue, cough, fever, shortness of breath, headache, night sweats, muscle aches, and rash on the upper body or legs.

People who contract the fungal infection develop flu-like symptoms, including fever, chest pain, muscle or joint aches, and coughing. Table 3.11-15 compares documented cases of Valley fever in Los Angeles County and in the state of California between 2011 and 2017. From that period, Los Angeles County experienced an annual average of 5.1 cases per 100,000 residents. In contrast, California experienced an annual average of approximately 11.3 cases per 100,000 residents during the same period.

Table 3.11-15 Cases of Valley Fever per 100,000 Residents, 2011–2017

Location	Documented Cases of Valley Fever per 100,000 Population							Annual Average 2011 to 2015
	2011	2012	2013	2014	2015	2016	2017	
State of California	13.9	10.8	8.6	6.0	8.1	14.0	17.5	11.3
Los Angeles County	3.2	3.4	3.4	4.0	5.5	7.2	9.1	5.1

Source: California Department of Public Health, 2019

The Build Alternatives will include measures to prevent the spread of Valley fever during construction by managing fugitive emissions through a fugitive dust control plan (AQ-IAMF#1). The contractor will prepare and implement the fugitive dust control plan for each distinct construction segment to describe how each measure as part of the plan will be employed and who will be responsible for implementation of the measures. As part of the fugitive dust control plan measures during construction, vehicles transporting construction fill material on public roads would be covered. In addition, trucks and equipment transporting construction fill material will be washed prior to leaving construction work areas and traveling on public roads. Exposed surfaces

and unpaved roads in construction areas will be watered as needed to control fugitive dust, in accordance with the fugitive dust control plan developed and implemented by the contractor for each construction work area (AQ-IAMF#1). Application of water for dust control will depend on the weather and site conditions. Vehicle travel speeds on unpaved roads in construction areas will be limited as specified in the fugitive dust control plan for the construction work area. Disturbed areas and on-site and off-site unpaved roads will be stabilized by watering or presoaking disturbed lands, washing exterior surfaces of buildings during demolition, and removing mud or dirt from public streets.

Further, the plan will include information on causes, preventive measures, symptoms, and treatments for Valley fever; outreach and coordination with the California Department of Public Health and county departments to make information on Valley fever readily available to residents, schools, and businesses; and dedication of a qualified person who will oversee implementation of the Valley fever prevention measures including fugitive dust control measures and construction worker protection measures. A Valley Fever Health and Safety designee will coordinate with the County Public Health Officer to determine what measures will be required by the Authority as part of the SSMP (SS-IAMF#2) to minimize Valley fever exposure. The Valley Fever Health and Safety designee will manage implementation of the Valley fever control measures, which will include, but would not be 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-conditioned 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. Effective coordination, education, and prevention measures would minimize temporary impacts on construction workers and the public from exposure to Valley fever.

CEQA Conclusion

Construction activities that could result in exposure to the fungus that leads to Valley fever would effectively be minimized through development and implementation of a fugitive dust control plan (AQ-IAMF#1) and an SSMP (SS-IAMF#2) as part of the California HSR System. Through effective coordination, planning, and implementation of control and prevention measures, Palmdale to Burbank Project Section features would minimize impacts on the exposure of the public or construction workers to Valley fever. Therefore, the safety hazard for people residing or working in the RSA would be minimal. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#11: Temporary Exposure to Risk from High-Risk Facilities.

High-risk facilities (e.g., oil and natural gas pipelines, dams, and electrical substations) and fall hazards (such as industrial facilities with tall structures) are located within the vicinity of the Build Alternatives. High-risk facilities represent a potential hazard to construction of the project. The hazards associated with high-risk facilities could be exacerbated by construction activities (e.g., excavation, overhead crane operation).

High-risk facilities, including pipelines and other utilities located within the project footprint, will be removed, relocated, or protected in place during construction. The SSMP developed under SS-IAMF#2 will include procedures for removal, relocation, or protection of high-risk facilities within the footprint. Pursuant to utility agreements negotiated between the Authority and the utility service providers, the Authority will work with utility owners during final engineering design and construction of the Build Alternatives to remove or relocate utilities within the right-of-way or protect them in place within the right-of-way. The contractor will establish a construction safety management plan and SSMP (SS-IAMF#2) that will establish safety guidelines to be implemented during construction, including procedures for construction activities near the identified overhead or underground utility lines. The Authority will conduct a PHA (SS-IAMF#3) that will evaluate the impacts of high-risk facilities on the project. The Authority will incorporate project features into the design and construction of the project. The SEPP developed under SS-IAMF#2 will identify potential hazards from high-risk facilities within the vicinity of the Build

Alternatives that will be removed, relocated, or protected in place during construction, and will identify methods to mitigate or eliminate hazards associated with high-risk facilities. Further, inclusion of PUE-IAMF#2 through PUE-IAMF#4 will ensure that project construction will be coordinated or phased to minimize or fully eliminate utility service disruptions.

CEQA Conclusion

Project features would minimize the potential for the hazards associated with high-risk facilities to be exacerbated by construction of the Palmdale to Burbank Project Section. As noted in Section 3.6, Public Utilities and Energy, PUE- IAMF#2 through PUE-IAMF#4 will ensure that HSR construction is coordinated or phased to minimize or eliminate utility service disruptions. The Authority will conduct a PHA (SS-IAMF#3) to evaluate the effects of high-risk facilities on the project, identify potential hazards associated with high-risk facilities, and identify and implement measures to minimize hazards prior to commencement of construction. The SSMP (SS-IAMF#2) will include measures to minimize impacts of high-risk facilities, including management plans for identifying the hazards associated with high-risk facilities that could be exacerbated by construction and removing, relocating, or protecting in-place pipelines, electrical systems, and other buried and overhead high-risk facilities within the project footprint. Therefore, the Build Alternatives would not increase hazards from high-risk facilities due to a design feature, nor would it result in a new safety hazard from high-risk facilities for people residing or working in the RSA. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Operations Impacts

Impact S&S#12: Permanent Operational Safety Impacts.

Permanent operation safety impacts could result from the operation and maintenance of the Build Alternatives. International experience operating HSR systems in Japan, France, Germany, China, and Spain has surpassed the passenger rail safety record achieved in the United States. Since 1964 and the inauguration of the first HSR service in Japan, Japanese HSR trains (the *Shinkansen*) have maintained a record of no passenger fatalities or injuries due to train accidents, including derailments or collisions (Central Japan Railway Company 2015). In France, high-speed trains (the *Train à Grande Vitesse*) have been operating since 1981 and carry more than 100 million passengers per year as of 2015. The French HSR system had its first fatal incident in November 2015, during a test run in Eckwersheim, France. The train derailed as a result of excessive speed on a bend in the route (Reuters 2015). Unlike France and Japan, Germany's HSR, the InterCity Express, does not use an entirely dedicated track system, but instead shares track with freight and conventional passenger rail. German InterCity Express trains carry more than 66 million passengers per year. An HSR accident in the late 1990s prompted design changes to the wheels of InterCity Express trains to remedy a design flaw (National Aeronautics and Space Administration 2007; North East Wales Institute of Higher Education 2004).

HSR service was introduced in China in 2007. As of 2015, the country has approximately 10,500 miles of HSR lines, with additional lines planned for completion by 2020 (China Highlights 2015). On July 23, 2011, a high-speed train rear-ended another high-speed train on a viaduct in Wenzhou, killing 40 people and injuring 172. The crash was caused by the failure of signaling. Equipment was determined to have a flawed design that was not properly identified during its development. The official investigation also found that the accident was symptomatic of a lack of emphasis on safety by the management of China's rapidly growing HSR industry (Aredy 2011).

The Spanish National Railways Network opened its first HSR line in 1992, linking Madrid to Seville. In 2012, approximately 23 million passengers traveled on the Spanish HSR. On July 24, 2013, a high-speed train operated by Spanish National Railways derailed as it entered Santiago de Compostela. The derailed train struck an adjacent concrete retaining wall, causing several rail cars to crumple and break apart. In total, 79 passengers were killed and hundreds more injured. The speed at the time of the derailment was approximately 95 miles per hour, almost twice the allowable speed for that stretch of track. Spain's Transport Ministry reported that the final investigation for the accident found that the sole cause of the derailment was the driver's lack of

attention, caused by a telephone call answered seconds before the derailment (International Railway Journal 2014).

Based on international HSR system operations, the most hazardous events resulting from HSR accidents are derailments. The California HSR System would incorporate a PTC system to protect against over-speed derailment, as required by the Railway Safety Improvement Act of 2008 through regulations enforced by FRA. The system would enforce speed restrictions, including slower speed restrictions for curves, to prevent derailments such as the one in Spain. If the engineer does not voluntarily slow the train, the system would automatically slow or stop the train, as appropriate.

High-Speed Rail System Accidents

Though unlikely, accidents occurring during operation of the Build Alternatives could have wide-ranging effect. The Build Alternatives would use six different track profiles: (1) at-grade; (2) at-grade covered; (3) cut-and-cover; (4) retained cut/trench profile; (5) tunnel; and (6) elevated/aerial structure. Trains would pass through several tunnels and across bridges during operations. Depending on the location of the train along the track, operations could lead to safety impacts from rail incidents, including train-to-train collisions. Such accidents would be more likely to result in harm to the general public in areas where the alignments would be at grade. Within the Central Subsection, the Refined SR14 Build Alternative would feature at-grade segments along Antelope Valley Freeway between Crown Valley Road and Lang Station Road. The SR14A Build Alternative would feature fewer at-grade segments along Antelope Valley Freeway, between 0.75-mile east of Agua Dulce Canyon Road and Lang Station Road. The E1, E1A, E2 and E2A Build Alternative alignments would be underground within the ANF, including SGMNM, for that segment but would have at-grade segments between Spruce Court in Palmdale and Aliso Canyon Road. At the southern end of the Central Subsection, the Refined SR14, SR14A, E1, and E1A Build Alternative alignments would be at-grade along San Fernando Road between Branford Street and Penrose Street. The E2 and E2A Build Alternative alignments would be at-grade within the Lake View Terrace neighborhood in the city of Los Angeles.

In the United States, passenger safety in the event of a conventional train-to-train collision comes from the provision of locomotives that have sufficient weight and strength to protect the trailing passenger cars. This approach is sometimes referred to as crashworthiness, as both of the lead vehicles, or locomotives, are designed to withstand the impact of a collision. This approach ensures that the trains would be of like weight and strength, and impacts would be distributed equally to the two trains involved in the collision. The result is a safer operating environment with a very heavy lead vehicle.

HSR system design takes a different approach for ensuring passenger safety from a train-to-train collision. This approach is known as collision avoidance (Wyre 2011; Rao and Tsai 2007). HSR systems take advantage of a system-design approach in which the HSR, the ATC system, the electrification system, and the rail infrastructure include automation to control or stop the trains without relying on human involvement. The general approach for the ATC system is to monitor the location and speed of trains on the high-speed network and to coordinate and maintain enough physical separation to allow for safe braking. If a fault occurs within the HSR network (that is, intrusion, derailment, significant natural event such as earthquake), the ATC system immediately slows or stops the train, thereby minimizing or eliminating a potential hazard. In areas of high risk, the system-design approach can also protect from other intrusions into the HSR corridor, such as errant automobiles, trucks, or other unauthorized entry, by the use of intrusion-detection and other monitoring equipment to detect a fault and then initiate action as needed.

The system-design approach using a collision avoidance philosophy has proven to be very effective in maintaining passenger safety in both Asian and European HSR systems.

FRA and CPUC regulations and oversight described in Section 3.11.2, Laws, Regulations, and Orders, would ensure safe design of the California HSR System. In the 2013 accident in Spain, the HSR line did not have a fully operative ATC system to protect against over-speed derailment.

A PTC system, which is a standardized type of ATC system for achieving the greatest levels of safety, is required by the Railway Safety Improvement Act of 2008 through regulations enforced by FRA. The California HSR System would enforce speed restrictions, including slower speed restrictions for curves. If the driver did not voluntarily slow the train, the system would slow or stop the train, as appropriate. As a result of implementing this system-design approach, the direct effects from train-to-train collisions would be minimized.

Train Derailment

A basic design feature of an HSR system is to contain trainsets within the right-of-way. Strategies to ensure containment include operations and maintenance plan elements that would ensure high-quality tracks and vehicle maintenance to reduce the risk of derailment. Also, physical elements, such as containment parapets, check rails, guard rails, and derailment walls, 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. Concrete derailment walls are like tall curbs that run close to the train wheels. In the event of a derailment, these walls keep the train within the right-of-way and upright.

Accidents Attributable to External Factors

Design of the Build Alternatives takes into consideration the proximity of other transportation facilities to allow both HSR and other modes to operate safely. The primary safety concern is that a derailed train or errant vehicle would enter the HSR corridor and cause a collision hazard. Because portions of the Palmdale to Burbank Project Section would operate adjacent to the Metrolink (horizontally as well as vertically), there would be a risk of a conventional passenger or freight train derailing, entering the HSR trackway, and obstructing or negatively affecting an HSR train. Historically, train derailments in the United States have generally occurred where there is special trackwork, such as turnouts and crossovers, or where a rail network may not have been adequately maintained for the authorized speed.

Safety can be achieved where there is sufficient horizontal or vertical separation between these facilities and/or by use of a physical barrier to separate the facilities. A horizontal separation of approximately 102 feet between the centerlines of adjacent conventional and HSR trackways has been determined to be a distance sufficient to require no additional protection (FRA 1994). This minimum separation distance includes the distance of the maximum practicable excursion of the longest U.S. freight rail car from the center of the track, plus an allowance for overhead catenary system masts. A car body length of 89 feet for freight rail car displacement, plus an allowance of 12.5 feet to include an overhead catenary system mast foundation, results in a minimum separation distance, without an intrusion protection barrier, of 101.5 feet, rounded up to 102 feet.

These separation requirements, described in *Technical Memorandum 2.1.7, Rolling Stock and Vehicle Intrusion Protection for HSR and Adjacent Transportation Systems* (Authority 2008), were developed specifically for the California HSR System and are distinct from existing criteria for rail separation requirements. The guidance for intrusion protection generally follows the recommended practices described in the *American Railway Engineering and Maintenance-of-Way Association Manual* and the design standards developed specifically for the construction and operation of trains, based on international practices (AREMA 2016). This includes technical guidance from National French Railways for separation between an HSR system and roadway infrastructure and *International Union of Railways Codes for Structures Built over Railway Lines*. For intrusion from highways/roadways and protection of highway motorists, the design guidance follows FRA recommendations and was revised to be compliant with the Caltrans *Highway Design Manual*, which was updated in 2016 to specifically address separation requirements for HSR facilities adjacent to the state highway system (Caltrans 2016).

If a railroad line is less than 102 feet from an HSR track and both are at ground level, additional protection is required. The need and type of protection is subject to the distance between tracks and the risk of a derailment. Earth berms can be used as intrusion protection for tracks with centerline separation of 45 to 102 feet. A minimum separation of 29 feet is required between centerlines of HSR and adjacent railroad tracks, and this separation requires a physical intrusion barrier. When

intrusion protection is needed, the minimum total height must be 10 feet with ditch plus berm, concrete wall plus screen, or only a concrete wall.

The Build Alternatives would result in a similar number of road crossings with the Refined SR14 and SR14A Build Alternatives crossing 17 and 15 roadways, respectively, the E1 and E1A Build Alternatives crossing 17 and 15 roadways, respectively, and the E2 and E2A Build Alternatives crossing 10 and 7 roadways, respectively. Table B3.11-1 in Appendix 3.11-B, Existing and Proposed Railroad Crossing Definitions, describes the proposed HSR road crossing configuration for each Build Alternative. When an HSR track is adjacent to a highway or roadway, a barrier is typically required where the roadway is less than 30 to 40 feet from the HSR access control fence. Depending on the highway facility, the barrier can range from a standard concrete barrier to a taller barrier that protects against errant commercial trucks and trailers. Where the separation is greater than 30 to 40 feet, barriers may be considered, subject to a risk assessment.

The need for and type of protection are subject to the distance between tracks and the risk of a derailment. Barriers between the HSR and freight rail lines and highways are shown in Volume III, Alignment Plans.

Vertical separation—where one of the transportation facilities is on an aerial structure and the other is at ground level—can also provide protection from intruding vehicles into the HSR right-of-way. Consistent with standard railroad practice, where the HSR track would be on an aerial structure, the adjacent facilities would be at least 25 feet from the nearest supporting column face. Where 25 feet of clearance is not available, a barrier may be required to protect the supporting columns. As a result of implementing standard design practices, the potential for intrusion of motor vehicles or trains into the HSR corridor would be minimized.

The Refined SR14, E1, and E2 Build Alternatives would operate at grade and the alignments would be approximately 200 feet away from the existing Metrolink and UPRR tracks in Palmdale. HSR tracks would run parallel to the existing conventional rail tracks and would not involve special trackwork. The SR14A, E1A, and E2A Build Alternatives would also operate at-grade in Palmdale and would cross over the Metrolink Antelope Valley Line approximately 1.5 miles southeast of Una Lake. South of Palmdale, the Build Alternatives would start to deviate from the existing railroad right-of-way. The Refined SR14 and SR14A Build Alternative alignments would cross over conventional rail tracks on a viaduct near Vulcan Mine, and then would not cross other conventional rail until reaching the Sun Valley neighborhood of Los Angeles. The E1, E1A, E2, and E2A Build Alternative alignments would cross beneath the Metrolink rail tracks near Carson Mesa Road in a tunnel and would emerge from a tunnel to pass adjacent to the conventional rail tracks at-grade near the Vincent Grade/Acton Metrolink Station. The E1, E1A, E2, and E2A Build Alternative alignments would be approximately 400 feet away from the Metrolink tracks at the Vincent Grade/Acton Metrolink Station before continuing away from the existing rail tracks. From this point, the E1 and E1A Build Alternative alignments would not cross other conventional rail until reaching the Sun Valley neighborhood of Los Angeles, and the E2 and E2A Build Alternatives would not encounter conventional rail crossings above ground. Beginning near the San Fernando/Truesdale Metrolink Station, the Refined SR14, SR14A, E1, and E1A Build Alternative alignments would follow San Fernando Boulevard, parallel to existing conventional rail tracks, transitioning between viaduct, at grade, and tunnel. When the existing conventional rail and Refined SR14, SR14A, E1, and E1A Build Alternatives would both be at grade (i.e., where they would operate at the same elevation), the HSR tracks would always be separated from conventional rail by a minimum of 102 feet. When the HSR tracks would be in tunnel in this area, the Metrolink and HSR tracks would be vertically separated by placing one in tunnels and stacking the other tracks atop the tunnels.

Because a horizontal separation of approximately 102 feet between the centerlines of adjacent conventional and HSR trackways was determined to be a safe distance, direct effects from train-to-train collisions would be minimized by project design that would not place HSR trackwork within 102 feet of conventional rail lines. Additionally, through application of SS-IAMF#3, the Authority will prepare and implement hazard and threat vulnerability analyses to eliminate or minimize risks and operations safety hazards.

CEQA Conclusion

The design of the Build Alternatives would include safety elements to prevent train-to-train collisions, as well as collisions between trains and objects, vehicles, pedestrians, or bicyclists. These safety elements would include grade separations, physical separations including separation distances and vertical separations, physical protection barrier structures, PTC features, and derailment containment. In addition, the design of the California HSR System includes an operations and maintenance plan that includes schedules and procedures for the periodic maintenance of the track, right-of-way, power systems, train control systems, signaling, communications, and safety systems required for operations of the system. Scheduled maintenance of operations and safety systems would minimize the potential for failure of systems that could lead to derailment. The Authority will also prepare hazard and threat vulnerability analyses to identify hazards ahead of operations and plan solutions to eliminate or minimize risks (SS-IAMF#3). Through effective planning and implementation of design considerations into the project, impacts on safety from collisions and derailments that could expose passengers, employees, and the public to risks of accidents would be minimized. Therefore, the Build Alternatives would not decrease the safety of existing public transit, bicycle, or pedestrian facilities, increase hazards due to a design feature, or result in a new safety hazard residing or working in the RSA. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#13: Permanent Exposure to High-Risk Facilities and Fall Hazards.

High-risk facilities (e.g., oil and natural gas pipelines, dams, electrical substations, and bulk fuel storage facilities) and tall structures are within the vicinity of the Build Alternatives. High-risk facilities represent a potential hazard to project operations; an incident (e.g., fire, explosion) at a high-risk facility could disrupt operations. Tall structures (including bridges overcrossing the track) represent a potential hazard to operations of the project; a tall structure damaged by an incident (e.g., severe weather) could deposit debris in the right-of-way and obstruct HSR train operations (refer to Section 3.6, Public Utilities and Energy, for further discussion of high-risk utilities).

Oil and natural gas pipelines within the vicinity of each Build Alternative are public utilities and energy resources and are also identified and discussed in Section 3.6, Public Utilities and Energy. PEC sites located within the vicinity of the Build Alternatives are identified and discussed in Section 3.10, Hazardous Materials and Wastes. These PEC sites potentially contain contaminated hazardous materials and may also contain aboveground and below-ground bulk storage tanks or other bulk hazardous material storage on-site. Additional analyses for impacts from high-risk PEC sites and oil and natural gas pipelines within the vicinity of each Build Alternative as they relate to the construction and operations of the Build Alternatives are provided in Section 3.6, Public Utilities and Energy, and Section 3.10, Hazardous Materials and Wastes.

Implementation of SS-IAMF#2 and SS-IAMF#3 will address hazards from high-risk facilities and tall structures. Potential hazards would be identified and avoided and an SSMP will maintain the safety of employees, passengers, and the public. Also, no changes to existing operations and maintenance activities associated with the reconducted electrical lines would be anticipated with implementation of the project.

CEQA Conclusion

Project features would minimize the potential for high-risk facilities, including oil and natural gas pipelines, bulk fuel storage facilities, and tall structures (including bridges) to disrupt operations of the Palmdale to Burbank Project Section. With implementation of SS-IAMF#2 and SS-IAMF#3 as part of the California HSR System, potential hazards will be identified and mitigated and an SSMP would maintain the safety of employees, passengers, and the public. Therefore, the project would not increase hazards due to a design feature, nor would it result in a safety hazard for people residing or working in the RSA. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#14: Permanent Criminal and Terrorist Activity.

Criminal activity such as theft and violence could occur on trains and at station facilities. Terrorists could target the stations, tracks, or trains for the potential to inflict mass casualties and disrupt transportation infrastructure. Terrorist incidents involving urban and intercity passenger trains have occurred in the United Kingdom, Spain, Russia, Japan, India, and other countries in Europe and Asia. A coordinated terrorist attack on trains and train stations in Madrid in March 2004 resulted in 192 fatalities and more than 2,000 injuries (*El Mundo* 2004). A coordinated terrorist attack on passenger trains in Central London in July 2005 resulted in 52 fatalities and more than 700 injuries (CNN 2013).

The California HSR System design would include access control and security monitoring systems that could deter such acts and facilitate early detection. They would also help to prevent suicide attempts. The system features include sensors on perimeter fencing, closed-circuit television, and security lighting where appropriate. Intrusion-detection technology could also alert to the presence of inert objects, such as debris from tall structures, and stop HSR operations to avoid collisions.

The Authority is in discussions with TSA regarding security controls at stations. While the TSA has not prescribed safety standards for HSR stations, station design provides for a range of possible security procedures and includes monitoring systems that rely on security personnel, much like existing conventional train stations, which would deter theft, violence, and terrorist threats. SSPs and a SEPP will be implemented prior to commencement of operations as described in SS-IAMF#2. These plans will address design features and standards and guidelines intended to maintain security at the stations and maintenance facilities, within the track right-of-way, and on trains. The SEPP will be implemented prior to commencement of HSR operations and will address TSA and Department of Homeland Security requirements for operation of railroads, including potential terrorist threats (SS-IAMF#3). The Authority has established a liaison with the TSA Mass Transit and Rail Department who reports directly to the project operations manager. This liaison has been established to meet Department of Homeland Security and TSA requirements once project construction is complete, and to provide coordinated transfer of information concerning security concerns, threats, best practices, and security regulations that may pertain to rail security during development and implementation of the California HSR System and during operations of the project (Authority 2013). These system features would reduce the vulnerability to a successful criminal or terrorist act.

The California HSR System would also minimize the risk of criminal and terrorist activity through the application of control measures. The Authority will use deterrence and detection systems and TVAs and would conduct a site-specific PHA.

CEQA Conclusion

Criminal or terrorist acts that could result in increased exposure to safety risks would be minimized as part of the California HSR System through deterrence and detection systems, TVAs, the implementation of both SSPs and a SEPP (SS-IAMF#2 and SS-IAMF#3), and implementation of design standards and guidelines to allow emergency response access and evacuation in the event of a criminal or terrorist act. Through effective planning, coordination, and project features to minimize the risk for criminal and terrorist acts and provide safe procedures during operations, California HSR System features would minimize impacts on HSR trains, structures and facilities, passengers, employees, and the public. Therefore, the Palmdale to Burbank Project Section would not result in a safety hazard for people residing or working in the RSA. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#15: Permanent Safety Hazards to Schools.

In the event of a train accident during operations of the project, including derailment of a train during a seismic event or natural disaster, a substantial safety hazard to schools could occur if the train were to leave the HSR right-of-way and collide with other structures, including school buildings, or people on adjacent properties. Hazards to schools in the event of a derailment of an

HSR train could include the train colliding with a school structure or people in occupied areas on school property. This could only occur adjacent to the right-of-way and could only occur if train components were to leave the guideway as well as the right-of-way as a result of a derailment incident.

As presented in Table 3.11-11, public schools and other educational facilities are within 0.25 mile of each Build Alternative. Cal. Code Regs. 14010 provides siting standards for new schools. These standards are not for the location of facilities other than schools; however, they do indicate when safety impacts may occur to school employees and students. Cal. Code Regs. 14010c calls for a separation between schools and the outside edge of the power transmission line easement to be 100 feet for 50-kV to 133-kV lines, 150 feet for 220-kV to 230-kV lines, and 350 feet for 500-kV to 550-kV lines. The HSR system would be powered by a 25-kV system; therefore, the transmission lines associated with the project would be akin to overhead transmission lines located in neighborhoods, and would be a negligible safety hazard to schools. Cal. Code Regs. 14010d requires a safety study for new school sites within 1,500 feet of a railroad track easement for trains carrying passengers or cargo. Because the California HSR System would carry passengers and be electric-powered, there would be no safety hazard associated with HSR cargo or fuel.

The hazard associated with the derailment of a high-speed train is the physical mass and speed of the train colliding with a structure or people, which could only occur very near to the right-of-way. Table 3.11-11 lists the schools within the vicinity of the Build Alternatives. The alignments of the Build Alternatives would be located in either a bored or cut-and-cover tunnel in all locations within 0.25 mile of a school.

As discussed above, industry standards require basic design features such as concrete derailment walls to ensure the HSR system trainsets would be contained within the right-of-way. Since high-speed trains began operating in 1964, there has only been one case in which a train within a dedicated HSR right-of-way left the right-of-way—the 2011 accident in China described in Section 3.11.6. A formal government investigation identified the cause of the accident as a systemwide lack of emphasis on safety, both in terms of equipment development and operating personnel training, by the management of China's HSR system (Aredy 2011). Where industry standards for design, maintenance, and operation have been employed, this type of accident has not occurred over the four decades of HSR operation elsewhere in the world. Therefore, if an HSR derailment were to occur next to a school, there is a very high probability that the train would remain within the HSR right-of-way.

CEQA Conclusion

Operations of high-speed trains that could be subject to a derailment leading to safety hazards for schools would be effectively minimized as part of the California HSR System through safety elements as part of project design. Safety measures, such as concrete derailment walls to prevent trainsets from exiting the right-of-way, would be part of the design to minimize the risk of derailment. With incorporation of these design features, the Build Alternatives would not result in safety hazards to schools. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Wildfire Hazards

Construction Impacts

Impact S&S#16: Temporary and Permanent Exposure to Wildfire Hazards.

The Build Alternatives would traverse FHSZs throughout urban and rural portions of the RSA. The following aboveground HSR facilities would encounter FHSZs (mapped on Figure 3.11-4):

- Refined SR14, SR14A, E1, E1A, E2, and E2A surface trackway and ancillary facilities south of Palmdale

- Refined SR14 surface trackway and ancillary facilities between Acton and Agua Dulce and in the Soledad Canyon/Vulcan Mine area of the ANF, including SGMNM
- SR14A surface trackway and ancillary facilities between 0.75 mile east of Agua Dulce Canyon Road and the Soledad/Canyon/Vulcan Mine area of the ANF, including SGMNM
- E1, E1A, E2, and E2A tunnel portal and ancillary facilities near Angeles Forest Highway and in Aliso Canyon
- Refined SR14/SR14A, E1/E1A, and E2/E2A optional adit facilities within the ANF along Little Tujunga Canyon Road (described further in Section 3.11.10)
- Refined SR14/SR14A adit options SR14-A2 and SR14-A3, located south of Pacoima Dam
- Refined SR14, SR14A, E1, and E1A Build Alternative intermediate window options near the State Route 118/Interstate 210 interchange
- The E2 and E2A tunnel portal and alignment near Pacoima and Lake View Terrace

Table 3.11-16 summarizes the permanent surface footprint of the Build Alternatives in Very High FHSZs for state responsibility areas within the ANF.

Table 3.11-16 Permanent Surface Project Footprint in Very High FHSZs within the ANF Including SGMNM

Project Feature	Build Alternative					
	Refined SR14	SR14A	E1	E1A	E2	E2A
Base footprint (no adits)	63	63	2	2	2	2
Adit option A1	22	22	22	22	11	11
Adit option A2	N/A	N/A	12	12	5	5

Source: Authority, 2019b

ANF = Angeles National Forest

FHSZ = fire hazard severity zone

N/A = not applicable

SGMNM = San Gabriel Mountains National Monument

Project construction could increase fire risks in the FHSZs due to the storage and use of flammable or combustible materials, operation of vehicles and heavy machinery, or other factors resulting from increased human activity. Permanent HSR infrastructure within FHSZs would include traction power substations, adit structures, water utility corridors, access roads, switching and paralleling stations, and electrical interconnections. The presence of adit structures and water utility corridors would not pose a fire risk because they would not contain flammable materials. Additionally, HSR infrastructure would be co-located with existing infrastructure of a similar nature and located in disturbed areas where possible, in order to reduce wildfire risks. However, cars and trucks driving on new access road and the presence of electrical facilities could increase fire risks. For example, if damaged, electrical facilities could create sparking or arcing. The project design includes fire warning systems, as well as emergency exits and notification systems, consistent with the requirements of the NFPA Safety Code and Standard for Fixed Guideway Transit and Passenger Rail Systems, the California Building Standards Code, and the International Building Code.

Fire risks would be minimized or avoided through the application of SS-IAMF#1 and SS-IAMF#2, which will require the development and incorporation of a fire and life safety program into the design and construction of the Palmdale to Burbank Project Section. The fire and life safety program is coordinated with local emergency response organizations to provide them with an understanding of the rail system, facilities, and operations, and to obtain their input for

modifications to emergency response operations and facilities, such as evacuation routes. Fire risks would also be reduced by the Authority's formation of a statewide Fire and Life Safety and Security Committee (FLSSC) through implementation of SS-IAMF#2, which will be composed of representatives from fire, police, and local building code agencies (Authority 2014b). The purpose of the FLSSC will be to review issues that are critical to fire and life safety and security, to acquire input and concurrence from the state and local authorities having jurisdiction over the proposed designs to meet code requirements, and to comply with state and local fire code standards or fire and life safety hazard programs during the design phase of the project. The fire and life safety program will include regional FLSSCs who will focus on the fire and life safety characteristics specific to the Palmdale to Burbank Project Section and provide input on local building codes or requirements that align with the emergency response characteristics and capabilities of the local agencies for the Palmdale to Burbank Project Section. Representation and operations of the statewide FLSSC and regional FLSSCs will be coordinated with local emergency response organizations to provide an understanding of the California HSR System and its 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, reducing the potential for uncontrolled wildfire events.

CEQA Conclusion

The construction and the permanent presence of Palmdale to Burbank Project Section infrastructure could exacerbate wildfire hazards. However, all HSR right-of-way and facility vegetation control programs would conform to CAL FIRE guidelines for defensible space to reduce fire hazards. Additionally, ancillary features would be co-located with existing infrastructure of a similar nature and located in disturbed areas where possible, in order to reduce wildfire risks. Furthermore, the Authority will develop and incorporate fire and life safety programs into the project design and construction (SS-IAMF#1 and SS-IAMF#2) as part of the California HSR System. The FLSSC will ensure the incorporation of local building codes and other fire safety features into the project design. Through co-location of infrastructure with existing structures and disturbed areas, implementation of the FLSSC, implementation of SS-IAMF#1 and SS-IAMF#2, and limitation of the use of flammable building materials, the Build Alternatives will not require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#17: Post-Wildfire Flooding and Landslide Risks.

As described in Section 3.8, Hydrology and Water Quality, post-wildfire conditions could result in stormwater flows exceeding typical 100-year flood events due to the destruction of vegetation that might otherwise impede stormwater flows. HYD-IAMF#1 requires stormwater management facilities that would reduce the project's contribution to runoff during flood events. HYD-IAMF#2 incorporates hydraulic monitoring specific to post-wildfire conditions to ensure that HSR structures are appropriately sized to accommodate flood flows after a wildfire.

As discussed in Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources, landslide-prone areas exist along all six Build Alternative corridors in the San Gabriel Mountains. Wildfires could increase the likelihood or severity of landslides along the HSR alignments, and along roads within the ANF. Per GEO-IAMF#1, a construction management plan will identify potential slope hazards and implement engineering controls to minimize landslide vulnerability during construction. GEO-IAMF#2 will involve ongoing monitoring of slopes during operation and maintenance to ensure that changes in slope stability, including those caused by wildfire, are adequately addressed through slope protection and hazard reduction.

CEQA Conclusion

Post-wildfire conditions could increase landslide or flooding hazards along the Palmdale to Burbank Project Section alignments. HYD-IAMF#1, HYD-IAMF#2, GEO-IAMF#1, and GEO-IAMF#2 will require that California HSR System design consider landslide and flood hazards, including post-wildfire conditions. With implementation of the IAMFs listed above as part of the California HSR System, the Build Alternatives would not expose people or structures to significant risks as a result of runoff, post-wildfire slope instability, or drainage changes. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Operations Impacts

Impact S&S#18: Exposure of Passengers to Pollutant Concentrations Due to Wildfire.

The Build Alternatives would pass through FHSZs with a high risk of wildfire. The Burbank Airport Station site would not be located within FHSZs. Passengers on high-speed trains would only pass through and would not occupy FHSZs for an extended period. If there were active wildfires across the HSR alignment, service along the Palmdale to Burbank Project Section would be suspended to minimize risks to train passengers. Furthermore, project design includes fire warning and suppression systems, such as sprinklers, as well as emergency exits and notification systems, consistent with the requirements of the NFPA Safety Code and Standard for Fixed Guideway Transit and Passenger Rail Systems, the California Building Standards Code, and the International Building Code. HSR trains would be entirely electric and carry no flammable fuel or freight. Therefore, the project would not expose train passengers to pollutant concentrations from wildfires.

CEQA Conclusion

The Build Alternatives could expose passengers to wildfire hazards. However, stationary project elements that support occupation, including the Burbank Airport Station, would not be located within areas that exhibit high wildfire danger, and HSR passengers would temporarily pass through FHSZs without occupying these areas. Thus, the California HSR System would not expose passengers to pollutant concentrations from a wildfire. This impact would be less than significant for Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact S&S#19: Fire and Wildfire Hazards from Operations and Maintenance.

The California HSR System would require the maintenance of surface ancillary facilities along the HSR right-of-way. Maintenance of these facilities could marginally exacerbate wildfire risks by increasing human activity in relatively rural or undeveloped areas where ancillary features are located. However, these ancillary features would be co-located with existing infrastructure of a similar nature and located in disturbed areas where possible, which would further reduce wildfire risks. Co-location would ensure that human use and occupancy of undeveloped, fire-prone areas would not substantially increase because of the Build Alternatives.

Operations of the Build Alternatives would involve movement of passengers between Palmdale and Burbank, without creating fire hazards. HSR trains would be fully electric and would not carry flammable fuel or freight. In addition, HSR trains would only carry passengers. Incorporating sprinklers and warning systems into the train design would further prevent trains from creating fire hazards. Moreover, a basic design feature of HSR systems is to contain trainsets within the right-of-way. This measure would reduce fire risks from sparks caused by the friction of wheels against the rails.

In addition to co-locating ancillary facilities with other facilities of a similar nature and avoiding the transportation of flammable fuel and freight, the Build Alternatives would also incorporate SS-IAMF#1 and SS-IAMF#2 into project operations. SS-IAMF#1 and SS-IAMF#2 will implement fire and life-safety programs during design, operations, and maintenance of the Palmdale to Burbank Project Section to reduce the risk of wildfire from the Build Alternatives. Additionally, the formation of the FLSSC will require coordination with emergency service providers to ensure prompt response to fire incidents and the incorporation of fire safety into HSR operations.

CEQA Conclusion

Maintenance of associated HSR infrastructure would introduce marginal wildfire risks by increasing human activities in FHSZs. HSR trains would not transport flammable materials that could introduce fire risks. Through co-location of infrastructure with other existing structures and disturbed areas and implementation of SS-IAMF#1 and SS-IAMF#2, the California HSR System would not exacerbate fire risk due to ongoing maintenance or operations. This impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

3.11.7 Mitigation Measures

To address significant impacts identified in Section 3.11.6, Environmental Consequences, the following mitigation measures would be applied to reduce environmental impacts resulting from implementation of the California HSR System.

S&S-MM#1: Monitor Response of Local Fire, Rescue, and Emergency Service Providers to Incidents at Stations and Provide a Fair Share Cost of Service

During the first 3 years of operation and maintenance, the Authority shall monitor response of local fire, rescue, and emergency service providers to incidents at stations and provide a fair share of cost of service for 5 years. Monitoring shall begin 1 year prior to planned opening of an HSR station. Service levels consist of the monthly volume of calls for fire and police protection, as well as county-, city- or fire protection-funded emergency medical technician or ambulance calls that occur in the station site service areas.

Prior to operation of the stations for HSR service, the Authority would enter into an agreement with the public service providers of fire, police, and emergency services to fund the Authority's fair share of services above the average baseline service demand level for the station and maintenance service areas (as established during the monitoring period). The fair share shall be based on projected passenger use for the first year of operations, with a growth factor for the first five years of operation. This cost-sharing agreement would include provisions for ongoing monitoring and future negotiated amendments as the stations expand or passenger use increases. Such amendments would be made on a regular basis for the first five years of station operation, as provided for in the agreement. To ensure that services are made available, impact fees would not constitute the sole funding mechanism, although they may be used to fund capital improvements or fixtures (a police substation, additional fire vehicles, on-site defibrillators, etc.) necessary to service delivery.

After the first five years of operation, the Authority would enter into a new or revised agreement with the public service providers of fire, police, and emergency services to fund the Authority's fair share of services. The fair share would consider the volume of ridership, past record and trends in service demand at the stations and maintenance sites, new local revenues derived from station area development, and services that the Authority may be providing at the station.

3.11.7.1 Impacts from Implementing Mitigation Measures

The act of monitoring incident response and providing a fair share of cost of service, as required by S&S-MM#1, would not result in environmental impacts. Although impact fees may be used to fund capital improvements, the Build Alternatives would not induce construction of new emergency service facilities. There would be no secondary or off-site environmental impacts.

3.11.8 NEPA Impacts Summary

This section describes the safety and security NEPA impacts for the Build Alternatives. Impacts under each Build Alternative are similar. Table 3.11-17 provides a comparison of the effects of each of the Build Alternatives, summarizing the more detailed information provided in Section 3.11.6, Environmental Consequences

Table 3.11-17 Comparison of High-Speed Rail Build Alternative Impacts for Safety and Security

Impacts	Build Alternative						NEPA Conclusion before Mitigation (All Build Alternatives)	Mitigation	NEPA Conclusion post Mitigation (All Build Alternatives)
	Refined SR14	SR14A	E1	E1A	E2	E2A			
Emergency Services Impacts									
Construction Impacts									
Impact S&S#1: Temporary Interference with Emergency Response Times from Construction Activities.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
Temporary road closures associated with HSR construction	17	15	17	15	7	5			
All six Build Alternatives would each minimize impacts on emergency response times from construction activities by implementing a construction safety transportation management plan (SS-IAMF#1) and a construction transportation plan (TR-IAMF#2).									
Impact S&S#2: Permanent Interference with Emergency Response Times from Construction Activities.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
Permanent road closures associated with HSR construction	9	5	13	12	11	10			
The Refined SR14, E1, and E2 Build Alternatives would involve 9, 13, and 11 permanent roadway closures, respectively. The SR14A, E1A, and E2A Build Alternatives would involve 5, 12, and 10 permanent roadway closures, respectively. New grade separations in locations with existing at-grade rail crossings would result in a benefit to emergency response times. Combined with effective coordination and emergency vehicle access procedures, each Build Alternative would minimize permanent impacts on emergency response times.									

Impacts	Build Alternative						NEPA Conclusion before Mitigation (All Build Alternatives)	Mitigation	NEPA Conclusion post Mitigation (All Build Alternatives)
	Refined SR14	SR14A	E1	E1A	E2	E2A			
Operations Impacts									
Impact S&S#3: Permanent Interference with Emergency Response.							Adverse Effect	S&S-MM#1	No Adverse Effect See Section 3.11.8.2
Operations of each of the six Build Alternatives would have similar potential to cause emergency response delays due to the limited number of access points to the access-controlled HSR right-of-way and HSR stations. Each Build Alternative would minimize such impacts through a grade-separated design and the implementation of emergency preparedness plans (SS-IAMF#2). Mitigation measure S&S-MM#1 would also reduce impacts on local emergency response through the Authority entering into an agreement with emergency response providers to fund the Authority's fair share of services.									
Impact S&S#4: Interference with Emergency Response from Train Accidents and Increased Activity at Stations and Facilities.							Adverse Effect	S&S-MM#1	No Adverse Effect See Section 3.11.8.2
Operations of each of the six Build Alternatives would have similar impacts on emergency response times from train accidents and increased activity at HSR facilities. The Authority will implement a risk-based hazard management program and risk-based hazard analysis to identify hazards and resulting risks on the HSR operating system (SS-IAMF#3). Also, each Build Alternative would minimize impacts on emergency response times through the implementation of an SSPP and SSMP (SS-IAMF#2), which would establish an efficient and coordinated response protocol. Additionally, implementation of S&S-MM#1 will ensure emergency service providers maintain acceptable emergency response times, service ratios, and acceptable performance objectives and no new emergency service facilities would be required.									
Community Safety and Security Impacts									
Construction Impacts									
Impact S&S#5: Temporary Exposure to Criminal Activity at Construction Sites.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
Construction of each of the six Build Alternatives would each result in similar risk of criminal activity such as theft of equipment and materials or vandalism after work hours. Each Build Alternative would minimize this risk through standard measures such as the storage of equipment and materials in secured areas, use of security personnel and security lighting after work hours, and the implementation of an SSMP (SS-IAMF#2).									

Impacts	Build Alternative						NEPA Conclusion before Mitigation (All Build Alternatives)	Mitigation	NEPA Conclusion post Mitigation (All Build Alternatives)
	Refined SR14	SR14A	E1	E1A	E2	E2A			
Impact S&S#6: Temporary Exposure to Construction Site Hazards.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
Construction of each of the six Build Alternatives would involve similar risks related to construction activities. Each Build Alternative would incorporate safety plans and procedures to minimize effects on construction workers' health and safety (SS-IAMF#2, SS-IAMF#4). Also, the Build Alternatives would incorporate procedures for addressing risks from undocumented hazardous wastes (HMW-IAMF#4) and for transportation of hazardous materials (HMW-IAMF#6 through HMW-IAMF-8).									
Impact S&S#7: Temporary Exposure to Traffic Hazards.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
Construction of each of the six Build Alternatives would involve similar traffic hazards created by temporary road closures and detours. Each Build Alternative would minimize this negative effect through the implementation of a construction safety transportation management plan (SS-IAMF#1).									
Impact S&S#8: Permanent Exposure to Traffic Hazards.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
Construction of each of the six Build Alternatives would each result in road closures. These closures would have similar potential to create traffic hazards for each Build Alternative. Overall, the grade separations implemented as part of project design would minimize traffic hazards.									
Impact S&S#9: Permanent Interference with Airport Safety.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
Number of airports or airstrips located within the 2 miles of the project footprint	3	3	2	2	1	1			
Construction of each of the six Build Alternatives would not exceed established height limits in airport safety zones as established in FAR Part 77, and therefore would not obstruct air navigation. Furthermore, implementation of SS-IAMF#5 and SS-IAMF#6 would ensure continued coordination between the Authority and the FAA and Burbank-Glendale-Pasadena Airport Authority to ensure continued safety of air navigation during HSR construction, and the avoidance of conflicts during construction and operations at the Hollywood Burbank Airport.									

Impacts	Build Alternative						NEPA Conclusion before Mitigation (All Build Alternatives)	Mitigation	NEPA Conclusion post Mitigation (All Build Alternatives)
	Refined SR14	SR14A	E1	E1A	E2	E2A			
Impact S&S#10: Temporary Exposure to Valley Fever.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
Construction of each of the six Build Alternatives would have similar potential to disrupt soil containing the fungus that causes Valley fever. Each Build Alternative would minimize this potential through the development and implementation of a fugitive dust control plan (AQ-IAMF#1) and an SSMP (SS-IAMF#2).									
Impact S&S#11: Temporary Exposure to Risk from High-Risk Facilities.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
For each Build Alternative, hazard analyses (SS-IAMF#3) and the implementation of an SSMP (SS-IAMF#2) would minimize the hazards of high-risk facilities to the project. In addition, implementation of PUE-IAMF#2-4 would ensure that construction would be coordinated or phased to minimize or fully eliminate utility service disruption.									
Operations Impacts									
Impact S&S#12: Permanent Operational Safety Impacts.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.2
Operations of each of the six Build Alternatives would have similar operational safety hazards from rail incidents including train-to-train collisions. Such accidents would be more likely to result in harm to the general public in areas where the alignments would be at-grade. Within the Central Subsection, the Refined SR14 Build Alternative would feature at-grade segments along Antelope Valley Freeway between Crown Valley Road and Lang Station Road. The SR14A Build Alternative would feature less at-grade segments along the Antelope Valley Freeway between 0.75 mile east of Agua Dulce Canyon Road and Lang Station Road. The E1 and E2 Build Alternatives would be underground within the ANF including SGMNM for that segment but would have at-grade segments between Spruce Court in Palmdale and Aliso Canyon Road. At the southern end of the Central Subsection, the Refined SR14, SR14A, E1, and E1A Build Alternatives would be at-grade along San Fernando Road between Branford Street and Penrose Street. The E2 and E2A Build Alternative would be at-grade within the Lake View Terrace neighborhood in the city of Los Angeles. Despite these areas of at-grade profiles, the risk of operational safety hazards would be low for the Build Alternatives because each Build Alternative would employ the same system design features, such as grade separation of railway crossings, physical separation, and derailment containment, to minimize safety impacts from collisions or derailments. The Authority will also prepare hazard and threat vulnerability analyses to identify hazards ahead of operations and plan solutions to eliminate or minimize risks (SS-IAMF#3).									

Impacts	Build Alternative						NEPA Conclusion before Mitigation (All Build Alternatives)	Mitigation	NEPA Conclusion post Mitigation (All Build Alternatives)
	Refined SR14	SR14A	E1	E1A	E2	E2A			
Impact S&S#13: Permanent Exposure to High-Risk Facilities and Fall Hazards.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.2
Operations of each of the six Build Alternatives would have a similar exposure to high-risk facilities such as oil and natural gas pipelines, dams, electrical substations, bulk fuel storage facilities, and tall structures. Each Build Alternative would minimize impacts from these facilities through the implementation of an SSMP (SS-IAMF#2) and the completion of hazard analyses (SS-IAMF#3).									
Impact S&S#14: Permanent Criminal and Terrorist Activity.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.2
Operations of each of the six Build Alternatives would involve similar threats from criminal and terrorist activity. Impacts from these sources would be minimized through deterrence and detection systems, TVAs, the implementation of SSPs and an SEPP (SS-IAMF#2 and SS-IAMF#3), and implementation of design standards and guidelines to allow emergency response access and evacuation in the event of a criminal or terrorist act.									
Impact S&S#15: Permanent Safety Hazards to Schools.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.2
Schools within 0.25 mile of the project footprint	13	14	12	12	7	7			
The alignments of the Build Alternatives would be located in either a bored or cut-and-cover tunnel in all locations within 0.25 mile of a school. Operations of high-speed trains that could be subject to a derailment leading to safety hazards for schools would be effectively minimized as part of the California HSR System through safety elements of the project design.									

Impacts	Build Alternative						NEPA Conclusion before Mitigation (All Build Alternatives)	Mitigation	NEPA Conclusion post Mitigation (All Build Alternatives)
	Refined SR14	SR14A	E1	E1A	E2	E2A			
Wildfire Hazards									
Construction Impacts									
Impact S&S#16: Temporary and Permanent Exposure to Wildfire Hazards.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
<p>The Build Alternatives would traverse FHSZs throughout urban and rural portions of the RSA. The Refined SR14 and SR14A Build Alternatives would have the largest permanent at-grade footprint in Very High FHSZs within the ANF including SGMNM, and the E1, E1A, E2, and E2A Build Alternatives would have significantly less permanent at-grade footprint within Very High FHSZs in the ANF including SGMNM.</p> <p>Through limited use of flammable materials and effective coordination and planning accomplished through the FLSSC, project features would minimize safety risks from fires and wildfires during operations. The Authority will develop and incorporate fire and life safety programs into the design and construction of the project (SS-IAMF#1 and SS-IAMF#2). Also, HSR infrastructure would be co-located with other existing structures and located on disturbed areas where possible.</p>									
Impact S&S#17: Post-Wildfire Flooding and Landslide Risks.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.1
<p>The Build Alternatives would result in varying degrees of risk from post-wildfire flooding and landslides based on their relative footprint areas within FHSZs, as outlined in Impact S&S#16. With implementation of HYD-IAMF#1, HYD-IAMF#2, GEO-IAMF#1, and GEO-IAMF#2, the Build Alternatives would include design elements to limit landslide and flooding risks in post-wildfire conditions.</p>									
Operations Impacts									
Impact S&S#18: Exposure of Passengers to Pollutant Concentrations Due to Wildfire.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.2
<p>The Build Alternatives would result in varying degrees of risk of exposing project passengers to wildfire-related pollutant concentrations based on their relative footprint areas within FHSZs, as outlined in Impact S&S#16. Since trains would not transport flammable materials and would pass through and not occupy FHSZs, passengers would not be exposed to pollutants due to wildfires.</p>									

Impacts	Build Alternative						NEPA Conclusion before Mitigation (All Build Alternatives)	Mitigation	NEPA Conclusion post Mitigation (All Build Alternatives)
	Refined SR14	SR14A	E1	E1A	E2	E2A			
Impact S&S#19: Fire and Wildfire Hazards from Operations and Maintenance.							No Adverse Effect	No mitigation needed	N/A See Section 3.11.8.2
The Build Alternatives would result in varying degrees of risk from the maintenance of associated infrastructure based on their relative footprint areas within FHSZs, as outlined in Impact S&S#16. Operations of trains would not create fire hazards because HSR trains would not carry flammable freight or fuel. Through co-location of infrastructure with other existing structures and with disturbed areas and implementation of the SS-IAMF#1 and SS-IAMF#2, the California HSR System would not exacerbate fire risk due to ongoing maintenance or operations.									

¹ R. Rex Parris High School is not included here because it would be displaced as a result of the project.

ANF = Angeles National Forest; FHSZ = fire hazard severity zone; FLSSC = Fire and Life Safety and Security Committee; HSR = high-speed rail; IAMF = impact avoidance and minimization feature; SEPP = Security and Emergency Preparedness Plan; SGMNM = San Gabriel Mountains National Monument; SSMP = Safety and Security Management Plan; SSP = System Security Plan; SSPP = System Safety Program Plan; TVA = threat and vulnerability assessment

3.11.8.1 Comparison of Construction Impacts

Construction activities would affect safety and security in the vicinity of the Build Alternatives beyond those anticipated for the No Project Alternative. These would include the potential for increased emergency response times resulting from temporary and permanent road closures. The Refined SR14 and E1 Build Alternatives would have the most temporary road closures (17). The E2A Build Alternative would require the least temporary road closures (5). The E2 and E2A Build Alternatives would not require temporary closures in the Burbank Subsection while the Refined SR14, SR14A, E1, and E1A Build Alternatives would each require two. Temporary road closures, relocations, and changes in traffic that could result in temporary interference with emergency response and access would be effectively minimized through development and implementation of a construction safety transportation management plan (SS-IAMF#1) and construction transportation plan (TR-IAMF#2), which will minimize traffic impacts caused by temporary road closures by providing traffic control including provisions for 24-hour access by emergency vehicles.

The E1 Build Alternative would involve the most permanent road closures (13). The SR14A Build Alternative would require the least permanent road closures (5). However, new grade separations would be implemented in locations with existing at-grade rail crossings, which would result in a benefit to emergency response times. Additionally, project design would include coordination with emergency responders to incorporate roadway modifications that maintain existing traffic patterns and fulfill response route needs, emergency service providers would be able to maintain acceptable performance objectives and no new or expanded emergency service facilities would be required.

Construction of each of the six Build Alternatives would each involve similar hazards related to criminal activity such as theft of materials and equipment and vandalism. Each Build Alternative would minimize this negative effect by storing materials and equipment in secured areas and employing security personnel and monitoring equipment after work hours. Construction sites for each of the Build Alternatives would also pose similar risks to construction workers due to the hazardous nature of some construction activities.

Both temporary and permanent traffic hazards could result from construction of the Build Alternatives. Construction of the E2 and E2A Build Alternatives would be the least likely to result in temporary effects because it would not require temporary road closures in the Burbank Subsection. Construction of the SR14A Build Alternative would result in the fewest permanent road closures (5). These closures would have similar potential to create traffic hazards for each Build Alternative. Overall, the grade separations implemented as part of project design would minimize traffic hazards.

The Refined SR14 and SR14A Build Alternatives' vicinity includes the most airports and airstrips of the six Build Alternatives. Each Build Alternative vicinity includes the Hollywood Burbank Airport. In addition, the Refined SR14 and SR14A Build Alternatives' vicinity includes Agua Dulce Airpark and Whiteman Airport. SS-IAMF#5 and SS-IAMF#6 would ensure continued coordination between the Authority and the FAA and Burbank-Glendale-Pasadena Airport Authority to ensure continued safety of air navigation during HSR construction, and the avoidance of conflicts during construction and operations at the Hollywood Burbank Airport.

Each Build Alternative would have a similar low potential to disrupt soil containing the fungus that causes Valley fever. This potential would be minimized for each Build Alternative through the implementation of a fugitive dust control plan (AQ-IAMF#1) and an SSMP (SS-IAMF#2).

High-risk facilities (e.g., oil and natural gas pipelines, dams, and electrical substations) and fall hazards (such as industrial facilities with tall structures) are located within the vicinity of the Build Alternatives. The Authority will conduct a PHA (SS-IAMF#3) to evaluate the effects of high-risk facilities on the project and identify and implement measures to minimize hazards prior to commencement of construction. The SSMP (SS-IAMF#2) will include measures to minimize impacts of high-risk facilities that could be exacerbated by construction. Further, inclusion of PUE-IAMF#2 through PUE-IAMF#4 will ensure that project construction will be coordinated or phased to

minimize or fully eliminate utility service disruptions. Therefore, the Build Alternatives would not increase hazards from high-risk facilities due to a design feature, nor would it result in a new safety hazard from high-risk facilities for people residing or working in the RSA.

The construction and the permanent presence of Palmdale to Burbank Project Section infrastructure could exacerbate wildfire hazards. However, through co-location of infrastructure with existing structures and disturbed areas, implementation of the FLSSC, incorporation of fire and life safety programs into the project design and construction (SS-IAMF#1 and SS-IAMF#2), and limitation of the use of flammable building materials, the Build Alternatives will not require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment.

Post-wildfire conditions could increase landslide or flooding hazards along the Palmdale to Burbank Project Section alignments. HYD-IAMF#1, HYD-IAMF#2, GEO-IAMF#1, and GEO-IAMF#2 will require that California HSR System design consider landslide and flood hazards, including post-wildfire conditions. With implementation of the IAMFs listed above as part of the California HSR System, the Build Alternatives would not expose people or structures to significant risks as a result of runoff, post-wildfire slope instability, or drainage changes.

3.11.8.2 Comparison of Operations Impacts

Access to the HSR right-of-way and associated facilities would be restricted for all six Build Alternatives. Delays could result if emergency responders are unable to access areas of the right-of-way during an emergency. To minimize this effect, the Authority will work with emergency responders to develop and implement an SSPP and an SSMP (SS-IAMF#2), which would include procedures for emergency responder access to the HSR access-controlled right-of-way. The obstructive effect of restricted access to certain areas of the right-of-way would be similar for each Build Alternative.

Operations of each of the six Build Alternatives would each have similar effects from permanent exposure to high-risk facilities, including oil and natural gas pipelines, bulk fuel storage facilities, and tall structures, including bridges. Implementation of an SSMP (SS-IAMF#2) and completion of a hazard analysis (SS-IAMF#3) would minimize effects for the six Build Alternatives.

All six Build Alternatives would have similar operations safety impacts from rail incidents such as train-to-train collisions. Each Build Alternative would be designed to minimize such impacts through inclusion of safety elements such as grade separations, physical barrier structures, PTC features, and derailment containment. Through effective planning and implementation of design considerations for the California HSR System, impacts on safety from collisions and derailments that could expose passengers, employees, and the public to risks of accidents would be minimized.

Operations of each of the six Build Alternatives would result in similar interference with emergency responses due to limited access to HSR infrastructure. However, the Authority will provide emergency service providers access to the HSR infrastructure, while entering into cost-sharing agreements and coordination with emergency service providers through implementation of S&S-MM#1. Implementation of S&S-MM#1 would minimize effects for the six Build Alternatives.

Each of the Build Alternatives would have a potential risk of fire hazards, including wildfire. Through co-location of infrastructure with other existing structures and with disturbed areas and implementation of the SS-IAMF#1 and SS-IAMF#2, the California HSR System would not exacerbate fire risk due to construction. The Refined SR14 and SR14A Build Alternatives would have the largest permanent at-grade footprint in Very High FHSZs within the ANF including SGMNM (63-85 acres, depending on the adit option chosen). The E1, E1A, E2, and E2A Build Alternatives would have less permanent at-grade footprint within Very High FHSZs within the ANF including SGMNM (14-24 acres for the E1 and E1A Build Alternatives, and 7-13 acres for the E2 and E2A Build Alternatives, depending on the adit option chosen).. Potential effects from exposure

to fire and wildfire hazards would therefore be the greatest for the Refined SR14 and SR14A Build Alternatives.

Each Build Alternative would have similar potential to experience criminal activity such as theft or violence on trains and at station facilities. Design of each Build Alternative would include deterrence and detection systems, TVAs, the implementation of SSPs and an SEPP (SS-IAMF#2 and SS-IAMF#3), and implementation of design standards and guidelines to allow emergency response access and evacuation in the event of a criminal or terrorist act. Through effective planning, coordination, and implementation of safety procedures during project operations, this negative effect would be minimized for each Build Alternative.

Each Build Alternative would minimize effects on schools by incorporating design features that would ensure that HSR trains would remain within the HSR right-of-way, even if a train were to derail. Additionally, each of the Build Alternative alignments would be located in either a bored or cut-and-cover tunnel in all locations within 0.25 mile of a school.

3.11.9 CEQA Significance Conclusions

Table 3.11-18 lists the safety- and security-related impacts, associated mitigation measures, and the level of significance after mitigation. After mitigation, no impacts related to safety and security would be significant under CEQA for the Build Alternatives.

Table 3.11-18 Summary of CEQA Significance Conclusions and Mitigation Measures for Safety and Security

Impact	Level CEQA of Significance before Mitigation	Mitigation Measure	Level of CEQA Significance after Mitigation
Emergency Response and Services			
Construction Impacts			
Impact S&S#1: Temporary Interference with Emergency Response Times from Construction Activities.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#2: Permanent Interference with Emergency Response Times from Construction Activities.	Less than Significant	No mitigation measures are required.	N/A
Operations Impacts			
Impact S&S#3: Permanent Interference with Emergency Response.	Significant	S&S-MM#1	Less than Significant
Impact S&S#4: Interference with Emergency Response from Train Accidents and Increased Activity at Stations and Facilities.	Significant	S&S-MM#1	Less than Significant

Impact	Level CEQA of Significance before Mitigation	Mitigation Measure	Level of CEQA Significance after Mitigation
Community Safety and Security			
Construction Impacts			
Impact S&S#5: Temporary Exposure to Criminal Activity at Construction Sites.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#6: Temporary Exposure to Construction Site Hazards.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#7: Temporary Exposure to Traffic Hazards.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#8: Permanent Exposure to Traffic Hazards.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#9: Permanent Interference with Airport Safety.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#10: Temporary Exposure to Valley Fever.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#11: Temporary Exposure to Risk from High-Risk Facilities.	Less than Significant	No mitigation measures are required.	N/A
Operations Impacts			
Impact S&S#12: Permanent Operational Safety Impacts.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#13: Permanent Exposure to High-Risk Facilities and Fall Hazards.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#14: Permanent Criminal and Terrorist Activity.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#15: Permanent Safety Hazards to Schools.	Less than Significant	No mitigation measures are required.	N/A

Impact	Level CEQA of Significance before Mitigation	Mitigation Measure	Level of CEQA Significance after Mitigation
Wildfire Hazards			
Construction Impacts			
Impact S&S#16: Temporary and Permanent Exposure to Wildfire Hazards.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#17: Post-Wildfire Flooding and Landslide Risks.	Less than Significant	No mitigation measures are required.	N/A
Operations Impacts			
Impact S&S#18: Exposure of Passengers to Pollutant Concentrations Due to Wildfire.	Less than Significant	No mitigation measures are required.	N/A
Impact S&S#19: Fire and Wildfire Hazards from Operations and Maintenance.	Less than Significant	No mitigation measures are required.	N/A

CEQA = California Environmental Quality Act
 N/A = not applicable

3.11.10 United States Forest Service Impact Analysis

This section summarizes safety and security effects associated with all six Build Alternatives on the ANF, including lands within the ANF that are part of the SGMNM.

3.11.10.1 Consistency with Applicable United States Forest Service Policies

Appendix 3.1-B, USFS Policy Consistency Analysis, contains a comprehensive evaluation of relevant laws, regulations, plans, and policies relative to portions of the Build Alternative alignments within the ANF, including SGMNM. Policies in the Angeles National Forest Management Plan regarding safety and security are generally related to the USFS’s ability to ensure firefighter and public safety. The following USFS policies pertain to safety and security:

- Fire 1—Fire Prevention: Reduce the number of human-caused wildland fires and associated human and environmental impacts.
- Fire 2—Direct Community Protection: Reduce the number of high risk/high value, and high and moderate risk areas using mechanical treatments, grazing, and prescribed fire.
- Fire 3—Fire Suppression Emphasis: All fires either on the national forest or that threaten the national forest will be suppressed.
- Fire 4—Firefighter and Public Safety: Improving firefighter and public safety is the primary objective in fire management. All other activities are tied to this core value.
- Fire 5—Fuelbreaks and Indirect Community Protection: Maintain the existing system of roadside fuelbreaks and fuelbreaks along watershed boundaries to minimize fire size and the number of communities threatened by both fires and floods.

This analysis determined that the portions of the Build Alternatives located within the ANF would be consistent with applicable policies pertaining to safety and security. As discussed previously in Section 3.11.3, Consistency with Plans and Laws, the Build Alternatives would be consistent with all emergency response plans within the RSA. Additionally, site-specific plans would be developed to ensure the safe and secure construction and operations of the Build Alternatives. Such plans would include a construction safety transportation management plan, injury and illness prevention program for workers, SSMP, SSP, site-specific health and safety plans, site-specific security plans, Valley fever action plan, fire and life safety and security programs, and both standard and emergency operating procedures. Furthermore, SS-IAMF#3 will ensure the early identification and mitigation of potential hazards and associated risks. SS-IAMF#4 will require the inspection of abandoned and active oil wells within 200 feet of the HSR tracks. Active wells within 200 feet of the HSR tracks would be abandoned. Finally, S&S-MM#1 will require the Authority to monitor the response of local fire, rescue, and emergency service providers to incidents at stations and provide a fair share of service cost during the first three years of project operations. Provision of a fair share of service costs would ensure the continued implementation of local fire and life safety and emergency response plans that depend on the functioning of these emergency service providers.

3.11.10.2 United States Forest Service Resource Analysis

Although the project would be built beneath the ANF, including the SGMNM, in tunnels, some construction activities would take place at the surface within the ANF, including the SGMNM. Refer to Section 2.5.4 for a full description of construction activities within the ANF, including the SGMNM, for each of the Build Alternatives.

Each of the surface construction sites described above would potentially be exposed to criminal activity (Impact S&S#5), hazards related to construction equipment and materials (Impact S&S#6), and Valley fever (Impact S&S#10). As stated in each of the relevant impact discussions in Sections 0 through 0, implementation of SS-IAMF#2, AQ-IAMF#1, HMW-IAMF#4, and HMW-IAMF#6-8 would minimize construction-related safety and security impacts. Operations of the HSR trains would not present an operations safety or security hazard within the ANF because portals would be located outside the ANF that would be secured so that no unauthorized personnel could enter the tunnels under the ANF. The adits would have permanent facilities, including access buildings and electrical utilities, but these sites would also be secured with fences and locks to prevent unauthorized entry. For more information on these IAMFs, refer to Section 3.11.4.2 and Appendix 2-E, Impact Avoidance and Minimization Features.

Some permanent facilities would be located within the ANF in Very High FHSZs. Most notably, a portion of the Refined SR14 Build Alternative improvements located near the Vulcan Mine would be in a Very High FHSZs. Other above-ground facilities for each of the Build Alternatives (including utility lines, roadway modifications, and adit buildings associated with optional adits near Little Tujunga Canyon Road) would also be in Very High FHSZs within the ANF. Table 3.11-16 above summarizes the permanent surface footprint of the Build Alternatives in Very High FHSZs within the ANF.

Within the ANF, project construction could increase fire risks due to the storage and use of flammable and combustible materials, operation of vehicles and heavy machinery, or other factors resulting from human activity. During project operations, HSR trains would not create fire hazards; trains would be electric and would not carry flammable fuel or freight, and trainsets would reduce fire risks from sparks caused by the friction of wheels against the wheels since they would be contained within the right-of-way as a basic design feature of the California HSR System. The presence of most HSR surface features, including, tracks, adit buildings, and water utility lines would not pose a fire risk because they would not contain flammable materials. However, the presence of electrical facilities and operation of cars and trucks on new access roads could increase fire risks.

As outlined in Section 3.11.6.3, implementation of the FLSSC will require the incorporation of fire safety measures and statewide building code requirements into the construction activities. Also, SS-IAMF#1 and SS-IAMF#2 will require the incorporation of fire safety measures into project

operations. These measures would be developed in coordination with the USFS and would be in compliance with any Special Use Authorization issued by the USFS for the project. The USFS would make a determination of consistency with USFS laws, regulations, and policies before issuing a Special Use Authorization, including requirements pertaining to safety and security of the project.

Project operations would result in minimal fire risk in USFS lands because of the lack of flammable materials used in the California HSR System. HSR trains would be entirely electric and carry minimal flammable or combustible fuel or freight. Project operations will require maintenance of ancillary facilities within the ANF, which could marginally exacerbate fire risks by increasing human activity near ancillary facilities. However, SS-IAMF#1 and SS-IAMF#2 will also require the incorporation fire safety elements into the operations and maintenance of the project. As a result, permanent exposure of USFS lands to wildfire hazards due to project operations would be minimized.

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