

## 3.11 Safety and Security

### 3.11.1 Introduction

Section 3.11, Safety and Security, of the Burbank to Los Angeles Project Section Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) analyzes the potential impacts of the No Project Alternative and the High-Speed Rail (HSR) Build Alternative and describes impact avoidance and minimization features (IAMF) that would avoid, minimize, or reduce impacts. Where applicable, mitigation measures are proposed to further reduce, compensate for, or offset impacts of the HSR Build Alternative. This section also defines the safety and security concerns within the region and describes the affected environment in the resource study area (RSA).

As described in the Program EIR/EIS documents, safe operation of the HSR system is of the highest priority (California High-Speed Rail Authority [Authority] 2012; Authority and Federal Railroad Administration [FRA] 2005). This means that the HSR infrastructure (e.g., mainline tracks, stations, maintenance and storage facilities) would be designed to prevent access by unauthorized vehicles, people, animals, and objects. The 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, all aspects of the HSR system would conform to the latest federal requirements regarding transportation security.

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

- A System Safety and Security Management Plan (SSMP), including a Safety and Security Certification Program, which defines safety and security activities during design and construction.
- A System Safety Program Plan, which would be developed during the preliminary engineering phase and refined during the final design and construction phases to address safety and integration with emergency response as it relates to the day-to-day operation of the system.
- A Security Program Plan describing the security strategy for protecting HSR operation, including security at the stations, within the trackwork right-of-way, and onboard trains. Compliance with these measures would maximize the safety and security of passengers and employees of the HSR system.
- An Emergency Management Plan and a Passenger Train Emergency Preparedness Plan that describe the response for any type of emergency situation.
- A Threat and Vulnerability Assessment for security and a Preliminary Hazard Analysis for safety, which would be developed during the preliminary engineering phase to produce comprehensive design criteria for safety and security requirements mandated by local, state, and federal regulations and industry best practices.
- A Fire and Life Safety and Security Plan and a System Security Plan (SSP). Under federal and state guidelines and criteria, the Fire and Life Safety and Security Plan addresses the integration of the HSR system with the emergency response community.

The overall safety and reliability of the 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 systems, and because the United States has

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#### *Safety and Security*

The safe and secure operation of the California High-Speed Rail System is of the highest priority. The system is designed to generally be grade-separated, which improves safety. The system would be fully access-controlled. An access-controlled system helps prevent entry into the corridor by unauthorized vehicles, people, animals, and objects. All aspects of the proposed project 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.

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no specific or current guidelines for the development of an HSR system capable of 220-mile-per-hour (mph) travel, the HSR system design considers and adapts to the existing European and Asian process and standard (with regard to speed and technical issues with high-speed vehicles), along with applicable U.S. safety and security standards.

Given its complex and high-speed operating environment, high-speed railways must be developed from the beginning as a system, integrating all elements to work together in a safe, efficient, and reliable manner. An HSR system design approach considers the physical and operational relationships among the various subsystems (infrastructure, rolling stock, train controls, electrification, and operations and maintenance) and optimizes the physical design requirements with operational and maintenance activities to deliver a high level of safety and reliability. As a result, the Authority's technical standards address and integrate U.S. standards, and an overall set of guiding principles or system requirements consistent with European and Asian HSR systems to ensure the safety and reliability aspects of the 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 system. The FRA is currently developing safety requirements for HSRs for use in the U.S. and would require that the HSR safety regulations be met prior to revenue service operations.

This section provides details on safety issues related to construction and operation of the HSR Build Alternative, including the measures and regulations currently in place or that would be implemented to keep employees, passengers, and the public safe from HSR-related activities. This section also considers security issues that could result from criminal acts that could affect HSR operation and the ability for emergency responders to respond to incidents.

Additional details on safety and security are provided in the following appendices in Volume 2 of this EIR/EIS:

- Appendix 2-B, Impact Avoidance and Minimization Features
- Appendix 2-D, Applicable Design Standards
- Appendix 3.1-B, Regional and Local Policy Inventory
- Appendix 3.11-A, Safety and Security Data
- Appendix 3.11-B, Airport Obstructions

Seven other resource sections in this Draft EIR/EIS provide additional information related to safety and security:

- **Section 3.2, Transportation**—Analyzes potential safety improvements that would result from grade separations and road closures of the HSR Build Alternative and its beneficial impacts on automobile, pedestrian, and bicycle traffic.
- **Section 3.3, Air Quality and Global Climate Change**—Evaluates impacts of constructing the HSR Build Alternative on human health from air emissions, such as air toxics and fugitive dust emissions, from construction and operation of the HSR Build Alternative.
- **Section 3.5, Electromagnetic Fields and Electromagnetic Interference**—Evaluates impacts of construction and operating the HSR Build Alternative on human health from electromagnetic fields and electromagnetic interference.
- **Section 3.6, Public Utilities and Energy**—Evaluates impacts of constructing the HSR Build Alternative on utilities, energy, water infrastructure, such as stormwater systems, water districts, and water supply. Additionally, this section addresses construction impacts on natural gas and petroleum fuel pipelines (identified as high-risk facilities in the context of safety and security).
- **Section 3.8, Hydrology and Water Resources**—Evaluates impacts of constructing the HSR Build Alternative on changes in flood flows and flood risk.
- **Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources**—Evaluates impacts of constructing the HSR Build Alternative on seismicity and geotechnical hazards.

- **Section 3.10, Hazardous Materials and Wastes**—Evaluates impacts of constructing the HSR Build Alternative on safety related to hazardous materials and wastes, such as use of hazardous materials or exposure to soil and groundwater contamination.

### 3.11.1.1 Definition of Resources

The World Bank distinguishes between transport safety and security (The World Bank 2002). The following list provides definitions for the safety and security resources analyzed in this Draft EIR/EIS.

- **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** 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** include emergency response by fire, law enforcement, and emergency services to fire, seismic events, or other emergency situations.
- **Fire Protection** services predominantly provide 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** services address the discovery, deterrence, rehabilitation, and punishment of criminal behavior and ensure that the laws of an area are obeyed. Federal, state, and local law enforcement agencies provide these services. Railroad operators, including the Authority, may also employ railroad police officers to enforce state laws to protect railroad property, personnel, passengers, and cargo (Code of Federal Regulations [C.F.R.] Title 49, Part 207).
- **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** are created by counties and cities within the RSA and outline procedures for operations during emergencies such as earthquakes, floods, fires, and other natural disasters; hazardous materials spills; transportation emergencies; civil disturbance; and terrorism.
- **Community Safety and Security** addresses safety and security concerns of construction site workers, HSR passengers and employees, and members of the public (including motorists, pedestrians, and bicyclists) who could be exposed to significant risks of loss, injury, or death during construction. It also addresses the safety of 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; fire hazards; rail and airport safety; school safety; and high-risk facilities and fall hazards.
  - Community security addresses high-risk facility security, criminal acts (including vandalism, theft, and violence), and acts of terrorism.

### 3.11.2 Laws, Regulations, and Orders

This section describes the federal, state, regional, and local laws, regulations, orders, and plans that are relevant to safety and security. Section 3.1, Introduction, describes National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) general requirements for the assessment and disclosure of environmental impacts, and they are therefore not restated in this section.

#### 3.11.2.1 Federal

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

On May 26, 1999, the FRA released *Procedures for Considering Environmental Impacts* (FRA 1999). These FRA procedures supplement the Council on Environmental Quality Regulations (40 C.F.R. Part 1500 et seq.) and describe FRA's process for assessing the environmental impacts of actions and legislation proposed by the agency and for the preparation of associated documents (42 United States Code 4321 et seq.). The FRA *Procedures for Considering Environmental Impacts* states that "the EIS should identify any significant changes likely to occur in the natural environment and in the developed environment. The EIS should also discuss the consideration given to design quality, art, and architecture in project planning and development as required by U.S. Department of Transportation Order 5610.4." These FRA procedures state that an EIS should consider possible impacts on safety and security.

On December 6, 2016, FRA published a Notice of Proposed Rulemaking proposing to amend its regulations on passenger equipment safety standards. See 81 Federal Register (Fed. Reg.) 8006. The Notice of Proposed Rulemaking addresses three major subject areas: (1) Tier III transit safety standards; (2) alternative crashworthiness and occupant protection performance requirements for Tier 1 passenger equipment; and (3) the maximum authorized speed for Tier III passenger equipment. These standards will not become effective unless FRA publishes a final rule.

##### **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. (Federal Rail Administration Regulations [C.F.R. Part 200–299]).<sup>1</sup>

##### **U.S. Code on Railroad Safety (49 U.S. Code § 20101 et seq.)**

This code contains a series of statutory provisions affecting 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 a system safety program (SSP) to improve the safety of their operations. A 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.

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<sup>1</sup> The California HSR Program is being required to employ an automatic train control (ATC) system. The ATC system shall provide functions of automatic train protection, automatic train operation, and automatic train supervision. The ATC system will include all the safety and non-safety critical functions of a train control system and will comply with the FRA's PTC requirements under both the federal Rail Safety Improvement Act of 2008 and 49 C.F.R. Part 236 Subpart I. A full description of the intended ATC system is provided in *Technical Memorandum 3.3, ATC Concept of System*, and *Technical Memorandum 3.3.2, ATC Site Requirements* (Authority 2010a).

The effective date of 49 C.F.R Part 270 is December 4, 2017, as indicated in the *Federal Register* (82 Fed. Reg. 26359, June 7, 2017):

*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 21, 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, 2017 (82 FR 26359, June 7, 2017).*

*FRA's implementation of this action without opportunity for public comment is based on the good cause exceptions in 5 U.S. Code 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).*

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

This regulation codifies the TSA 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 Directives 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. 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**

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

- Pilot qualifications and experience (pilots must be qualified in accordance with 14 C.F.R.133 for Class A and B, external load operations)
- Requirement for an aerial hazard analysis of the construction site
- Protective clothing/equipment for ground personnel
- Specifications for all rope used to suspend external loads
- Responsibility for providing load calculations

- Requirements for mission briefing prior to aerial operations
- Safety considerations from Chapter 11 of the Interagency Helicopter Operations Guide (National Wildlife Coordination Group, 2016), adapted to meet the project's requirements
- Emergency procedures in the event of a mechanical failure

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

### **3.11.2.2 State**

#### **California Government Code Section 65302**

California Government Code Section 65302 requires cities and counties to include in their general plans a statement of development policies setting forth objectives, principles, standards, and plan proposals for seven policy areas, including safety. The safety element is to provide for the protection of the community from any unreasonable risks associated with seismic and geologic hazards, flooding, and wildland and urban fires. The element must also address evacuation routes, peak-load water supply requirements, and minimum road widths and clearances around structures, as those items are related to identified fire and geologic hazards.

#### **California Public Utilities Code Section 309**

Under California Public Utilities Code Section 309, the executive director may employ such officers, administrative law judges, experts, engineers, statisticians, accountants, inspectors, clerks, and employees as the executive director deems necessary to carry out the provisions of this part or to perform the duties and exercise the powers conferred upon the commission by law. All officers and employees shall receive such compensation as is fixed by the commission.

#### **California Public Utilities Code Section 315**

Under California Public Utilities Code Section 315 the California Public Utilities Commission (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 commission, 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 Section 765.5**

Under California Public Utilities Code Section 765.5, the CPUC is required to establish minimum inspection standards to ensure that railroad locomotives, equipment, and facilities in Class 1 railroad yards in California will be inspected no less frequently than every 120 days and all branch and mainline track not 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 to be necessary. The focused inspection program shall target railroad yards and track that pose the greatest safety risk, based on inspection data, accident history, and rail traffic density.

#### **California Public Utilities Code Section 768**

Under California Public Utilities Code Section 768, the CPUC may, after a hearing, require every public utility to construct, maintain, and operate its line, plant, system, equipment, apparatus, tracks, and premises in a manner to promote and safeguard the health and safety of its employees, passengers, customers, and the public. The CPUC may prescribe, among other

things, the installation, use, maintenance, and operation of appropriate safety or other devices of appliances, including interlocking and other protective devices at grade crossings or junctions and block or other systems of signaling. The CPUC may establish uniform or other standards of construction and equipment, and require the performance of any other act which the health or safety of its employees, passengers, customers, or the public may demand.

#### **California Public Utilities Code Section 7661 and 7665**

Under California Public Utilities Code Section 7661 and Section 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.

#### **California Public Utilities Code Sections 7710 to 7727**

California Public Utilities Code Sections 7710 to 7727 cover railroad safety and emergency planning and response. Under this code, the CPUC is required to adopt safety regulations and to 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 Utilities Commission General Order No. 176**

The CPUC General Order No. 176, *Rules for Overhead 25kV AC Railroad Electrification Systems for High-Speed Rail System* (March 26, 2015) identifies uniform safety requirements governing the design, construction, installation, operation, and maintenance of 25-kilovolt alternating-current-electrification systems conducted in the State of California, serving an HSR passenger system capable of operating at 150 mph or higher, and located in dedicated rights-of-way with no public highway/rail at-grade crossings and in which freight operations do not occur.

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

The Emergency Services Act supports the state's responsibility to mitigate the 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 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 Public Resources Code requires use of the California Department of Transportation (Caltrans), Division of Aeronautics, *Airport Land Use Planning Handbook* (Caltrans 2002) as a technical resource to assist in the preparation of an EIR for any project situated within the boundaries of an airport land use compatibility plan. The *Airport Land Use Planning Handbook* supports the State Aeronautics Act (California Public Resource Code 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 Public Resources Code Section 21098 specifies notification procedures if a proposed project is located within a "low-level flight path" for aircraft that fly lower than 1,500 feet above the

ground or a “military impact zone” within 2 miles of a military installation under the jurisdiction of the U.S. Department of Defense.

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

California Code of Regulations, Title 27, Section 20917, sets forth the performance standards and 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 (14 California Code of Regulations 1250)**

California Code of Regulations, Title 14, Section 1250, “Fire Prevention Standards for Electric Utilities,” specifies utility-related measures for fire prevention. It also provides specific exemptions from electric pole and tower firebreak clearance standards as well as electric conductor clearance standards. It specifies when and where the standards apply.

### **National Fire Protection Association (NFPA Standard 130)**

National Fire Protection Association (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.

## **California High-Speed Rail Program**

### ***Safety and Security Management Plan***

Safety and security are priority considerations in the planning and execution of all work activities for construction of the HSR system. The system safety and system security program for the development and operation of HSR is described in the Authority’s SSMP. Based upon 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/vulnerabilities, safety and security certification program requirements, and construction safety and security requirements (Authority 2016b). A hierarchy of controls would be applied when considering the management of identified hazards:

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

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

The HSR 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 train sets 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. 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 underneath elevated structures, based upon existing regulations, guidance, or site-specific analysis, would maintain the safety and security of both the HSR operation and adjacent communities.

The Authority would require development and implementation of the SSMP for the HSR Build Alternative prior to construction. The SSMP applies to design, construction, and testing and startup of the HSR system but does not apply to revenue operations of the HSR Build Alternative. The SSMP would lead to the development of an SSP and Security and Emergency Preparedness Plan that would be applicable to operation of the HSR Build Alternative and that would govern safety and security for the HSR operating system (Authority 2013b). The Authority would require the SSP and Security and Emergency Preparedness Plan to be developed and implemented prior to commencement of revenue service of the HSR in accordance with the FRA regulation (49 C.F.R. Part 270) that requires the application of a SSP to passenger railroad operations.<sup>2</sup>

As part of the SSP, the Authority would 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, and Technical Memorandum 2.8.2, Access Control for High-Speed Rail Right-of-Way and Facilities***

Technical Memorandum (TM) 2.8.1 (Authority 2013a) identifies the safety and security requirements and standards for infrastructure elements for the HSR program, and TM 2.8.2 (Authority 2012b) identifies requirements and standards for access control for HSR stations, trackway, and facilities. 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 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

**3.11.2.3 Regional and Local**

In addition to the safety elements in the general plans, the counties and cities in the project section have adopted emergency plans that provide operating procedures for safety and security. Other local policies and ordinances related to safety and security include the safety provisions in county codes, city municipal codes, city and county hazardous waste management plans, and police and fire department master plans. Table 3.11-1 lists county and city safety and security plans by jurisdiction. Please refer to the master policy consistency analysis in Appendix 3.1-B for a detailed policy analysis of safety and security plans by jurisdiction within the project vicinity.

<sup>2</sup> The effective date of 49 C.F.R. 270 was December 4, 2017, as indicated in 82 Fed. Reg. 26359 (June 7, 2017).

**Table 3.11-1 Regional and Local Plans and Policies**

Policy Title	Summary
<b>Los Angeles County</b>	
Los Angeles County General Plan: Safety Element (2015)	<ul style="list-style-type: none"> <li>▪ Goal S1: An effective regulatory system that prevents or minimizes personal injury, loss of life, and property damage due to seismic and geotechnical hazards.</li> <li>▪ Policy S 1.1: Discourage development in Seismic Hazard and Alquist-Priolo Earthquake Fault Zones.</li> <li>▪ Policy S 1.2: Prohibit the construction of most structures for human occupancy adjacent to active faults until a comprehensive fault study that addresses the potential for fault rupture has been completed.</li> <li>▪ Policy S 4.5: Ensure that there are adequate resources, such as sheriff and fire services, for emergency response.</li> </ul>
Los Angeles County All-Hazard Mitigation Plan (2014)	This plan sets strategies for coping with the natural and human-caused hazards faced by residents. The plan is a compilation of information from county departments correlated with known and projected hazards that face Southern California.
Los Angeles County Municipal Code (as amended in 2003)	The declared purposes of Chapter 2.68: Emergency Services of the Municipal Code are to provide for the preparation and execution of plans for the protection of life and property within Los Angeles County in the event of an emergency; the establishment, coordination, and direction of the county operational area and emergency organization; the establishment, coordination, and direction of the Los Angeles County Emergency Management Council; the establishment, coordination, and direction of the Los Angeles County Office of Emergency Management; and the coordination of the preparatory and emergency functions of the county with those of all other public agencies, organizations, and individuals.
County of Los Angeles Operational Area Emergency Response Plan (2012)	The Operational Area Emergency Response Plan (OAERP) addresses the coordinated response to emergency situations associated with natural, human-caused, and technological incidents for the Los Angeles County operational area. The OAERP establishes the coordinated emergency management system, which includes prevention, protection, response, recovery, and mitigation.
County of Los Angeles Emergency Survival Guide (2015)	This plan provides a guide for the citizens of Los Angeles County to prepare for, respond to, and recover from disasters that face the county through increased awareness.
National Preparedness Goal Project, Part 1: NIMS Implementation Plan (2005)	The National Preparedness Goal Project ensures countywide implementation of goal initiatives. The Los Angeles County Office of Emergency Management will take the lead in developing National Preparedness Goal Project implementation plans outlining countywide implementation strategies and timeframes of goal initiatives.
Emergency Public Information Plan (2003)	The purpose of this document is to establish guidelines for an emergency public information plan based on the policies approved by the Los Angeles County Emergency Management Council on August 21, 2003, and to provide guidance when the county gives information to the public in time of crisis or disaster. Elements of this document will also be used when there is “pre-event” public concern regarding a possible emergency/disaster and in the recovery phase after a major disaster.
Tsunami Annex (2006)	The Tsunami Annex is an extension of the OAERP. The objective of the OAERP is to incorporate and coordinate all county facilities and personnel, along with the jurisdictional resources of the cities and special districts within the county, into an efficient organization capable of responding to any emergency using Standardized Emergency Management System (SEMS), mutual aid, and other appropriate response procedures.

Policy Title	Summary
Spontaneous Volunteer Management Annex (2009)	The Spontaneous Volunteer Management Annex is an extension of the OAERP. The objective of the OAERP is to incorporate and coordinate all county facilities and personnel, along with the jurisdictional resources of the cities and special districts within the county, into an efficient organization capable of responding to any emergency using SEMS, mutual aid, and other appropriate response procedures.
Los Angeles County Operational Area Terrorism Plan (2003)	This plan establishes policies and procedures to guide the Los Angeles County operational area in planning for and responding to an emergency caused by an actual or suspected act of terrorism (including cyber/electronic terrorism) and especially terrorist acts employing weapons of mass destruction, such as chemical, biological, radiological, nuclear, or explosive weapons.
Los Angeles County Emergency Repatriation Plan (1996)	This plan requires that counties develop plans for providing specified services to repatriates during periods of emergency that necessitate the mass return of U.S. citizens from outside the United States. The plan provides information about responsibilities for an emergency repatriation process at the federal, state, and county levels and delineates county departmental responsibilities and policies for activating and operating the Emergency Processing Center at Los Angeles International Airport or a site nearby.
Los Angeles County Operational Area Family Assistance Center Plan (2010)	This plan provides a framework for establishing and managing Family Assistance Centers within the Los Angeles County operational area (covering all 88 cities and unincorporated areas) during both large-scale mass fatality incidents and mass casualty incidents (e.g., earthquakes) and smaller, more localized incidents involving multiple fatalities/casualties (e.g., explosions, shootings) to ensure consistency of response and management, and to establish a baseline level of service.
Los Angeles County Emergency Medical Services Plan (2013)	This plan provides procedures and guidelines for providing medical services in the county. The Emergency Medical Services Agency continues working with individual providers to implement electronic data collection, including working with the Burbank Fire Department, Glendale Fire Department, and Los Angeles City Fire Department.
Los Angeles County Airport Land Use Plan (1991)	The basic function of airport land use compatibility plans is to promote compatibility between airports and the land uses that surround them. Compatibility plans serve as a tool for use by airport land use commissions in fulfilling their duty to review proposed development plans for airports and surrounding land uses.
Los Angeles County Airport Land Use Commission Review Procedures (2004)	The policies set forth in the Los Angeles County Airport Land Use Commission Review Procedures document serve two functions: (1) to articulate the procedures to be used by the Los Angeles County Airport Land Use Commission and affected local agencies for the purpose of fulfilling the airport land use compatibility review requirements set forth in the California State Aeronautics Act (Public Utilities Code Section 21670 et seq.), and (2) to identify certain compatibility factors to be considered in Airport Land Use Commission review of various actions involving land use development within any airport influence area in the county.

Policy Title	Summary
<b>City of Burbank</b>	
City of Burbank General Plan: Safety Element (2013)	<ul style="list-style-type: none"> <li>▪ Policy 1.2: Coordinate disaster preparedness and emergency response with appropriate agencies, neighboring cities, and the Burbank-Glendale-Pasadena Airport Authority.</li> <li>▪ Policy 1.5: Establish designated emergency response and evacuation routes throughout the city.</li> <li>▪ Policy 2.2: Ensure adequate staffing, facilities, equipment, technology, and funding for the Burbank Police Department to meet existing and projected service demands and response times.</li> <li>▪ Policy 2.3: Provide and use up-to-date technology to improve crime prevention.</li> <li>▪ Policy 3.2: Reduce opportunities for criminal activity through physical design standards such as Crime Prevention through Environmental Design and youth programs, recreation opportunities, educational programs, and counseling services.</li> <li>▪ Policy 4.1: Maintain a maximum response time of 5 minutes for fire suppression services. Require new development to ensure that fire response times and service standards are maintained.</li> <li>▪ Policy 4.2: Provide adequate staffing, equipment, technology, and funding for the Burbank Fire Department to meet existing and projected service demands and response times.</li> <li>▪ Policy 4.3: Implement fire prevention and suppression programs in areas of high fire hazard risk, including both urban and wildland areas.</li> <li>▪ Policy 4.4: Maintain adequate fire breaks in areas within and adjacent to areas of high wildfire risk.</li> <li>▪ Policy 4.5: Coordinate firefighting efforts with local, state, and federal agencies.</li> <li>▪ Policy 4.7: Maintain adequate fire suppression capability in areas of intensifying urban development, as well as areas where urban uses and open spaces mix.</li> <li>▪ Goal 5: Injuries and loss of life are prevented, critical facilities function, and property loss and damage is minimized during seismic events.</li> <li>▪ Policy 5.1: Require geotechnical reports for development within a fault area that may be subject to risks associated with surface rupture.</li> <li>▪ Policy 5.2: Require geotechnical reports for new development projects in areas with the potential for liquefaction or landslide.</li> <li>▪ Policy 5.3: Enforce seismic design provisions of the current California Building Standards Code related to geologic, seismic, and slope hazards.</li> <li>▪ Policy 5.4: Encourage and facilitate retrofits of seismically high-risk buildings to reduce risks from seismic ground shaking.</li> <li>▪ Policy 5.5: Facilitate the retrofitting of bridges and highway structures in the city to reduce risks associated with seismic ground shaking.</li> <li>▪ Program S-6, of Seismic Safety Goal 5: Verify that new development complies with the California Building Standards Code's seismic design standards and the Burbank Municipal Code. Verify that structural and architectural features, such as irregular building shapes, soft stories, undefined structural systems, architectural elements, and equipment attachments, are designed in accordance with the seismic provisions of the California Building Standards Code.</li> <li>▪ Program S-4, of Seismic Safety Goal 5: Evaluate the liquefaction potential of a site when, during the course of a geotechnical investigation, shallow groundwater (50 feet or less) and unconsolidated sandy alluvium soils are found. Fault investigations in the Verdugo Fault zone should be encouraged where feasible. The state geologist should be informed of any findings pertinent to the activity designation of the fault.</li> </ul>

Policy Title	Summary
	<ul style="list-style-type: none"> <li>▪ Policy 6.1: Inform applicants of flood risks and development requirements within the 100-year, 200-year, or 500-year floodplains or in other high-risk inundation areas. Recommend hazard mitigation where possible.</li> <li>▪ Policy 6.7: Employ strategies and design features to reduce the area of impervious surface in new development projects.</li> <li>▪ Policy 7.1: Maintain consistency with the Los Angeles County Airport Land Use Plan as it pertains to Bob Hope (Hollywood Burbank) Airport.<sup>1</sup></li> <li>▪ Policy 7.2: Ensure that land uses, densities, and building heights within Airport Land Use Compatibility Zones are consistent with safe operation of Bob Hope (Hollywood Burbank) Airport.</li> <li>▪ Policy 7.4: Coordinate disaster response with the Bob Hope (Hollywood Burbank) Airport Fire Department.</li> <li>▪ Policy 8.1: Review proposed projects involving the use or storage of hazardous materials.</li> <li>▪ Policy 8.2: Encourage businesses and organizations that store and use hazardous materials to improve planning and management procedures.</li> <li>▪ Policy 8.3: Distribute information and use incentives and disincentives to reduce or eliminate the use of hazardous materials where feasible.</li> <li>▪ Policy 8.5: Consult with appropriate agencies regarding hazardous materials regulations.</li> </ul>
All-Hazard Mitigation Plan (2014)	This plan covers each of the major natural hazards that pose risks to the city. The primary objective of the mitigation plan is to reduce the negative impacts of future disasters on Burbank (i.e., to save lives and reduce injuries, minimize damage to buildings and infrastructure [especially critical facilities], and minimize economic losses).
Burbank Municipal Code (as amended 2016)	Chapter 2: Disasters, provides for the preparation and execution of plans for the protection of persons and property within 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 public 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.
Burbank Unified School District Disaster Preparedness Plan (2016)	The purpose of this plan is to prepare the district to respond to emergencies using 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.
<b>City of Glendale</b>	
Glendale General Plan: Land Use Element (1986)	<ul style="list-style-type: none"> <li>▪ General Goal 7: Provide for measures to prevent the loss of life, injury, and economic dislocation resulting from fire, flood, and geologic hazards.</li> </ul>
Glendale General Plan: Open Space and Conservation Element (1993)	<ul style="list-style-type: none"> <li>▪ Goal 10, Objective 1: Integrate safety concerns into the management of natural resources, including recognition of geologic hazards and flood, fire, and seismic risks.</li> <li>▪ Goal 2, Objective 1: Regulate public access for the protection of sensitive land and habitats and regulate uses in hazard zones.</li> <li>▪ Goal 4, Objective 7: Encourage the continuation of hazard management and safety programs to reduce impacts from wildland fires, floods, mud slides, and soil subsidence.</li> <li>▪ Objective 1: Follow the recommendations of the Seismic Safety Element with particular emphasis on hazard management zones.</li> </ul>

Policy Title	Summary
City of Glendale Municipal Code (as amended 2016)	The purpose of Chapter 2.84: Emergency Services, of the City of Glendale Municipal Code is to provide 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 city's emergency functions with all other public agencies, corporations, organizations, and affected private persons.
City of Glendale General Plan: Safety Element (2003)	The Safety Element of the General Plan is the disaster mitigation plan for the City of Glendale. Its ultimate goal is to improve the safety of the community.
City of Glendale Emergency Plan (undated)	This plan addresses the City of Glendale's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies. The operational concepts reflected in this plan focus on potential large-scale disasters that can generate unique situations requiring unusual emergency responses.
City of Glendale Hazard Mitigation Plan Update (2012)	The mission of this plan is to proactively facilitate and support communitywide policies, practices, and programs that make Glendale better prepared in the event of a natural disaster. The primary objective of the mitigation plan is to reduce the negative impacts of future disasters on Glendale; save lives and reduce injuries; minimize damage to buildings and infrastructure; and minimize economic losses.
City of Glendale Natural Hazards Mitigation Plan (2006)	This plan provides a framework for planning for the four main natural hazards (earthquakes, wildfires, floods, and landslides) that have the potential to affect the Glendale area. The resources and background information in the plan are applicable citywide, and the goals and recommendations can lay the groundwork for local mitigation plans and partnerships.
Glendale Unified School District Emergencies and Disaster Preparedness Plan (2010)	School site plans address, at minimum, the following types of emergencies and disasters: fires, earthquakes, environmental hazards, attacks or disturbances, bomb threats or actual detonations, medical emergencies, and quarantines.
<b>City of Los Angeles</b>	
City of Los Angeles General Plan: Safety Element (1996)	<ul style="list-style-type: none"> <li>▪ Goal 1: A city where potential injury, loss of life, property damage and disruption of the social and economic life of the city due to fire, water related hazard, seismic event, geologic conditions or release of hazardous materials disasters is minimized.</li> <li>▪ Policy 1.1.2: Disruption reduction. Reduce, to the greatest extent feasible and within the resources available, potential critical facility, governmental functions, infrastructure, and information resource disruption due to natural disaster. (All Emergency Operations Organization [EOO] programs involving mitigation of disruption of essential infrastructure, services, and governmental operations systems prepare personnel for quickly reestablishing damaged systems implement this policy.)</li> <li>▪ Policy 1.1.4: Health/environmental protection. Protect the public and workers from the release of hazardous materials and protect city water supplies and resources from contamination resulting from accidental release or intrusion resulting from a disaster event, including protection of the environment and public from potential health and safety hazards associated with program implementation. (All EOO hazardous materials hazard and water pollution mitigation programs implement this policy.)</li> <li>▪ Policy 1.1.5: Risk reduction. Reduce potential risk hazards due to natural disaster to the greatest extent feasible within the resources available, including provision of information and training. (All programs that incorporate current data, knowledge and technology in revising and implementing plans [including this Safety Element], codes, standards, and procedures that are designed to reduce potential hazards and risk from hazards potentially associated with natural disasters implement this policy.)</li> <li>▪ Policy 1.1.6: State and federal regulations. Assure compliance with applicable state and federal planning and development regulations (e.g., Alquist-Priolo Earthquake Fault Zoning Act, State Mapping Act and Cobey-Alquist Flood Plain Management Act). (All</li> </ul>

Policy Title	Summary
	<p>EOO natural hazard enforcement and implementation programs relative to non-city regulations implement this policy.)</p> <ul style="list-style-type: none"> <li>▪ Goal 2: A city that responds with the maximum feasible speed and efficiency to disaster events so as to minimize injury, loss of life, property damage, and disruption of the social and economic life of the city and its immediate environs.</li> <li>▪ Goal 3: A city where private and public systems, services, activities, physical condition, and environment are reestablished as quickly as feasible to a level equal to or better than that which existed prior to the disaster.</li> <li>▪ Policy 3.1.2: Health/safety/environment. Develop and establish procedures for identification and abatement of physical and health hazards which may result from a disaster. Provisions shall include measures for protecting workers, the public, and the environment from contamination or other health and safety hazards associated with abatement, repair, and reconstruction programs. (All EOO hazard mitigation, response, recovery programs involving identification, and mitigation of release of hazardous materials and protection of the public and emergency personnel from hazardous materials implement this policy.)</li> </ul>
<p>City of Los Angeles General Plan: Framework Element (2001)</p>	<ul style="list-style-type: none"> <li>▪ Policy 6.3.1: Public Safety. Preserve flood plains, landslide areas, and steep terrain areas as open space, wherever possible, to minimize the risk to public safety.</li> <li>▪ Policy 9.6.3: Stormwater. The City's watershed-based approach to stormwater management will consider a range of strategies designed to reduce flood hazards and manage stormwater pollution. The strategies considered will include, but not necessarily be limited to: <ul style="list-style-type: none"> <li>– Support regional and city programs which intercept runoff for beneficial uses including groundwater recharge.</li> <li>– Protect and enhance the environmental quality of natural drainage features.</li> <li>– Create stormwater detention and/or retention facilities which incorporate multiple uses, such as recreation and/or habitat.</li> <li>– On-site detention/retention and reuse of runoff.</li> <li>– Mitigate existing flood hazards through structural modifications (floodproofing) or property by-out.</li> <li>– Incorporate site design features which enhance the quality of off-site runoff.</li> <li>– Use land use authority and redevelopment to free floodways and sumps of inappropriate structures which are threatened by flooding and establish appropriate land uses which benefit or experience minimal damages from flooding.</li> </ul> </li> </ul>
<p>Central City North Community Plan (2000)</p>	<ul style="list-style-type: none"> <li>▪ Goal 8: A community with adequate police facilities and services to protect the community's residents from criminal activity, reduce the incidence of crime, and provide other necessary law enforcement services.</li> <li>▪ Objective 8-1: Provide adequate police facilities and personnel to correspond with population and service demands in order to provide adequate police protection.</li> <li>▪ Policy 8-1.1: Consult with the police department as part of the review of new development projects and proposed land use changes to determine law enforcement needs and demands.</li> <li>▪ Policy 8-2.2: Ensure that landscaping around buildings is placed so as not to impede visibility.</li> <li>▪ Policy 8-2.3: Ensure adequate lighting around residential, commercial, and industrial buildings in order to improve security.</li> <li>▪ Objective 9-1: Ensure that fire facilities and fire protection services are sufficient for the existing and future population and land uses of Central City North.</li> <li>▪ Policy 9-1.1: Coordinate with the fire department as part of the review of significant development projects and General Plan Amendments affecting land use to determine the impact on service demands.</li> </ul>

Policy Title	Summary
Northeast Los Angeles Community Plan (1999)	<ul style="list-style-type: none"> <li>▪ Goal 8: Adequate police facilities and services to provide for the public safety needs of the community.</li> <li>▪ Objective 8-1: Provide adequate police facilities and personnel to correspond with population and service demands.</li> <li>▪ Policy 8-1.3: Encourage design of building and facilities in accordance with principles that minimize opportunities for crime and enhance personal safety.</li> <li>▪ Objective 9-1: Ensure that fire facilities and protective services are sufficient for the existing and future population and land uses.</li> </ul>
City of Los Angeles Municipal Code (as amended 2013)	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).
City of Los Angeles Emergency Operations Plan (2014)	The Emergency Operations Plan for the City of Los Angeles addresses the City's response to small- to large-scale emergency situations associated with natural disasters or human-caused emergencies.
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.
<b>Burbank-Glendale-Pasadena Airport Authority</b>	
Irregular Operations Emergency Contingency Plan (2012)	This plan describes how, after excessive tarmac delays, Bob Hope (Hollywood Burbank) Airport <sup>1</sup> will, to the extent practicable, provide for the deplanement of passengers, provide for the sharing of facilities and make gates available at the airport, and provide a sterile area for passengers who have not yet cleared U.S. Customs and Border Protection. The plan identifies the airport's constraints that limit its ability to accommodate diverted flights.

<sup>1</sup> In May 2016, Bob Hope Airport was rebranded as Hollywood Burbank Airport.

NIMS = National Incident Management System

OAERP = Operational Area Emergency Response Plan

SEMS = Standardized Emergency Management System

## Airport Plans

Airport master plans and airport land use compatibility plans provide guidance for land use and facilities planning that minimizes safety risks on the ground in airport influence zones. Table 3.11-2 lists airport master plans and airport land use compatibility plans that were also considered in the preparation of this analysis. Table 3.11-1, above, provides a summary for the airport plans considered in the preparation of this analysis.

**Table 3.11-2 Airport Plans**

Jurisdiction	Plan
Los Angeles County	<i>Airport Land Use Plan (1991)</i> <i>Los Angeles County Airport Land Use Commission Review Procedures (2004)</i>
Hollywood Burbank Airport	<i>Irregular Operations Emergency Contingency Plan (2012)</i>

## Other Requirements

Many state and local safety requirements refer to 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. NFPA Standard 130, Standard for Fixed Guideway Transit and Passenger Rail Systems, specifies fire protection and life safety requirements for underground, surface, and elevated-guideway transit and passenger rail systems. The California



Office of the State Fire Marshal has identified NFPA Standard 130 as a principal guidance document for the development of HSR project fire and life safety requirements, with appropriate accommodations for the operating characteristics specific to HSR systems.

### 3.11.3 Consistency with Plans and Laws

As indicated in Section 3.1, Introduction, CEQA and NEPA regulations<sup>3</sup> 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 describes the inconsistency of the HSR Build Alternative with these plans and laws to provide planning context.

Section 3.11.2 lists several federal and state laws and implementing regulations that are relevant to safety and security. These federal and state requirements include:

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

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

The Authority is not subject to the jurisdiction of regional and local governments nor are they required to be consistent with regional and local plans. Nevertheless, Council on Environmental Quality and FRA regulations call for the discussion of any inconsistency or conflict of a proposed action with regional or local plans and laws. Where inconsistencies or conflicts exist, the Council on Environmental Quality and the FRA require a description of the extent of reconciliation and the reason for proceeding if full reconciliation is not feasible (40 C.F.R. 1605.2[d] and 64 Fed. Reg. 28545, 14[n][15]). Similarly, the CEQA Guidelines require that an EIR discuss the inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans (CEQA Guidelines 15125[d]). Potential incompatibilities with plans and policies are unavoidable impacts.

The Authority has conducted a detailed analysis of potential inconsistencies between the proposed project and applicable plans and policies. Please refer to Appendix 3.1-B for detailed policy/goal/objective consistency analysis for the Burbank to Los Angeles Project Section. In total, 35 plans and 58 policies and ordinances were reviewed. The analysis showed the HSR Build Alternative would be consistent with 56 policies. It would be inconsistent with the remaining two policies:

- **City of Los Angeles General Plan: Framework Element (2001), Policy 6.3.1: Public Safety. Preserve flood plains, landslide areas, and steep terrain areas as open space, wherever possible, to minimize the risk to public safety.** The HSR Build Alternative would be inconsistent with Policy 6.3.1: Public Safety, because the alignment would require disturbance within the floodplains in the form of construction work and alterations of bridge structures.

<sup>3</sup> NEPA regulations refer to the regulations issued by the Council for Environmental Quality located at 40 C.F.R. Part 1500.

- **Los Angeles County General Plan: Safety Element (2015), Policy S 1.1: Public Safety. Discourage development in Seismic Hazard and Alquist-Priolo Earthquake Fault Zones.** The HSR Build Alternative would be inconsistent with Policy S 1.1: Public Safety, because the HSR Build Alternative would be constructed in areas classified as seismic hazard areas.

The Authority also has endeavored to design and construct the HSR project so that it would be compatible with land use and zoning regulations. For example, the HSR Build Alternative would include IAMFs that would require construction contractors to coordinate with local jurisdictions before and during construction to maintain emergency vehicle access. Design features of the HSR Build Alternative and construction procedures—such as those included in SS-IAMF#1, Construction Safety Transportation Management Plan; SS-IAMF#2, Safety and Security Management Plan; SS-IAMF#3, Hazard Analyses; and SS-IAMF#5, Aviation Safety—would address inconsistencies by complying with state and federal regulations to provide safety and security for the public. Therefore, the project would, overall, be consistent with the local plans and policies regarding safety and security.

### 3.11.4 Methods for Evaluating Impacts

NEPA and CEQA require evaluation of impacts on safety and security. The following sections define the RSA and summarize the methods used to analyze impacts on safety and security. As listed in Section 3.11.1, Introduction, seven other resource sections in this Draft EIR/EIS provide additional information related to safety and security.

#### 3.11.4.1 Definition of the Resource Study Area

As defined in Section 3.1, Introduction, RSAs are the geographic boundaries within which the environmental investigations specific to each resource topic were conducted. The RSAs for impacts on safety and security encompasses the areas that would be directly or indirectly affected by construction and operation of the HSR Build Alternative. These areas include the project footprint for the HSR Build Alternative plus an additional distance from the project footprint where impacts from construction and operations could occur on emergency services and community safety and security.

The safety and security RSA also includes communities, cities, and counties along the HSR Build Alternative alignment that could be indirectly affected by construction and operation of the HSR Build Alternative. Indirect impacts from construction and operations could influence an area outside of the safety and security RSA for direct impacts because certain service providers (e.g., fire departments, police departments, hospitals) are located outside of, but have service boundaries or provide service within, the safety and security RSA for direct impacts. These service providers include the Los Angeles County and the Cities of Burbank, Glendale, and Los Angeles.

Table 3.11-3 provides a general definition and boundary description for each RSA within the Burbank to Los Angeles Project Section. Figure 3.11-1 (Sheets 1 through 3) shows the safety and security RSAs and key resources within the RSA.

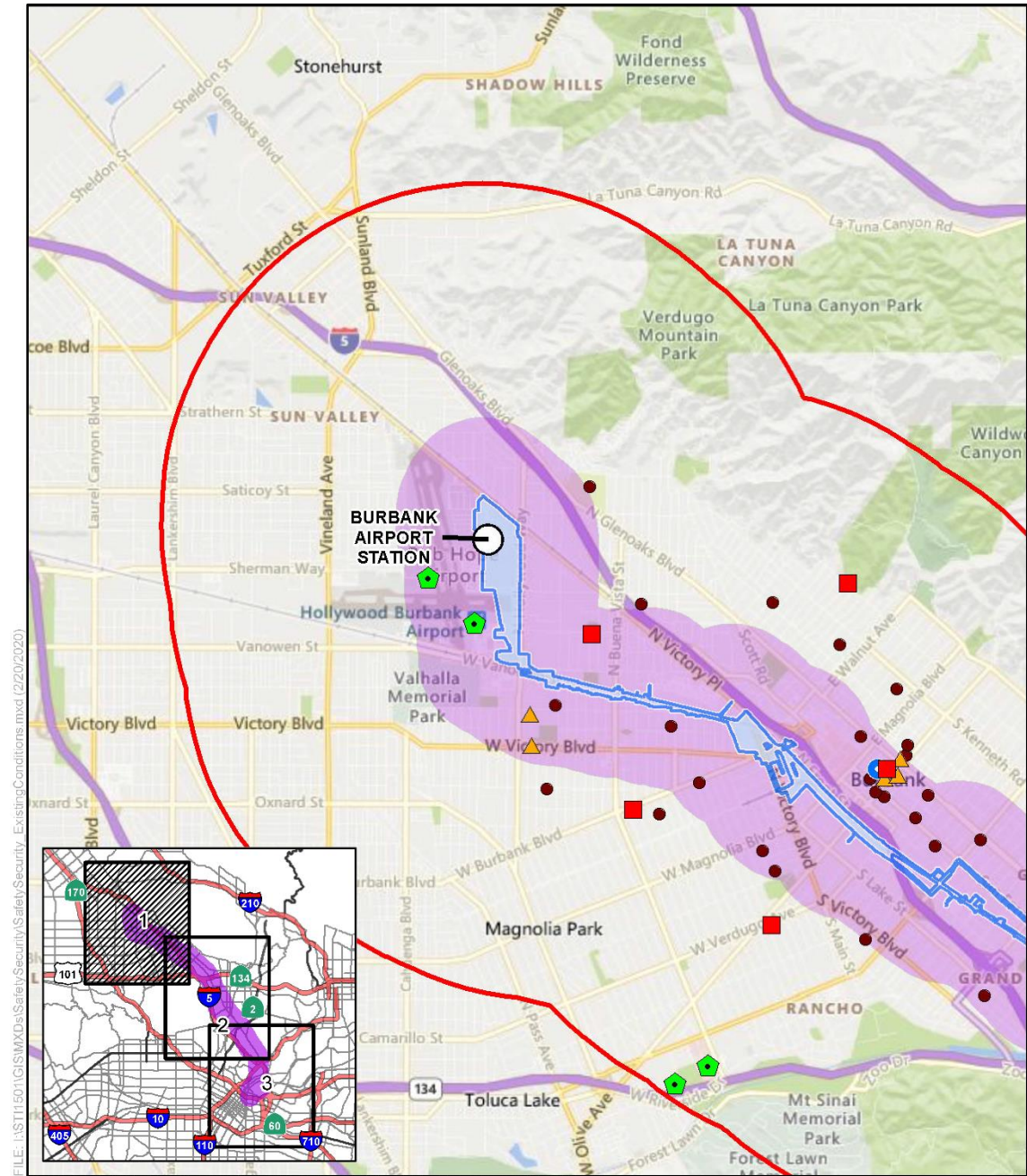
**Table 3.11-3 Definition of Safety and Security Resource Study Areas**

General Definition	Resource Study Area Boundaries and Definitions
<b>Construction and Operations—Direct Impacts</b>	
Rights-of-way, stations, and maintenance facilities	Areas within the HSR right-of-way and within 0.5 mile of the project footprint, including the rights-of-way, stations, and maintenance facilities.
Schools <sup>1</sup>	Areas within 0.5 mile of the project footprint
Landfills	Areas within 0.5 mile of the project footprint
Airports and high-risk facilities	Areas within 0.5 mile of the project footprint
Oil and gas wells <sup>2</sup>	Areas within 200 feet of the project footprint
Emergency service providers (e.g., fire departments, police departments, hospitals)	Emergency service providers' service areas
<b>Construction and Operations—Indirect Impacts</b>	
Emergency service providers (e.g., fire departments, police departments, hospitals)	Emergency service providers' service areas
Other services	Areas within 2 miles of the project footprint

Source: California High-Speed Rail Authority, 2019

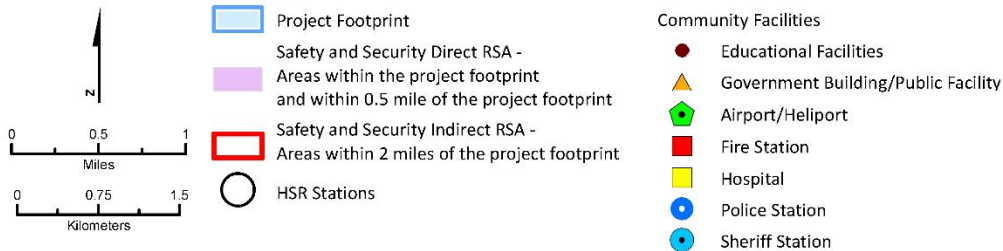
<sup>1</sup> California Code of Regulations, Title 5, Section 14010(d), requires a safety study for new school sites within 1,500 feet (approximately 0.25 mile) of an existing railroad track.

<sup>2</sup> Oil and gas wells would be identified within 200 feet of the tracks per California Code of Regulations, Title 14, Chapter 4, Article 2, Section 1720.



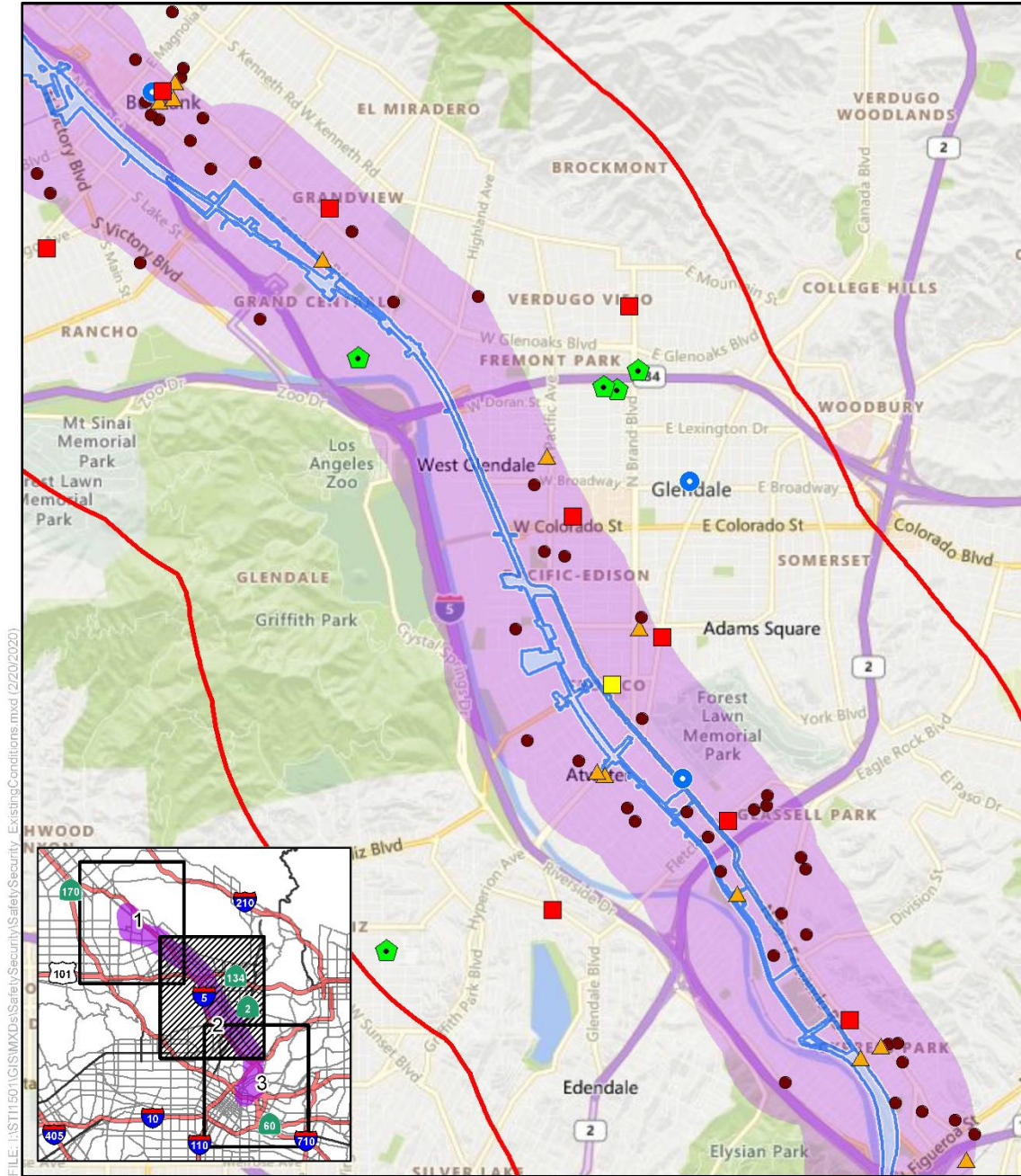
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED  
 SOURCE: Bing (2018); Los Angeles County (2015); CHSRA (11/2019)



**Figure 3.11-1 Safety and Security Existing Conditions**

(Sheet 1 of 3)



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED  
 SOURCE: Bing (2018); Los Angeles County (2015); CHSRA (11/2019)

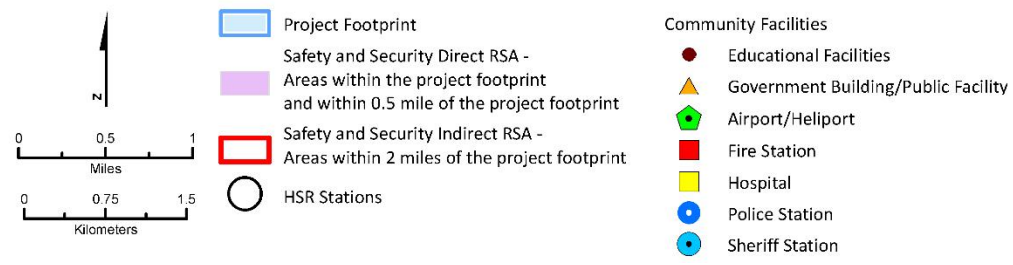
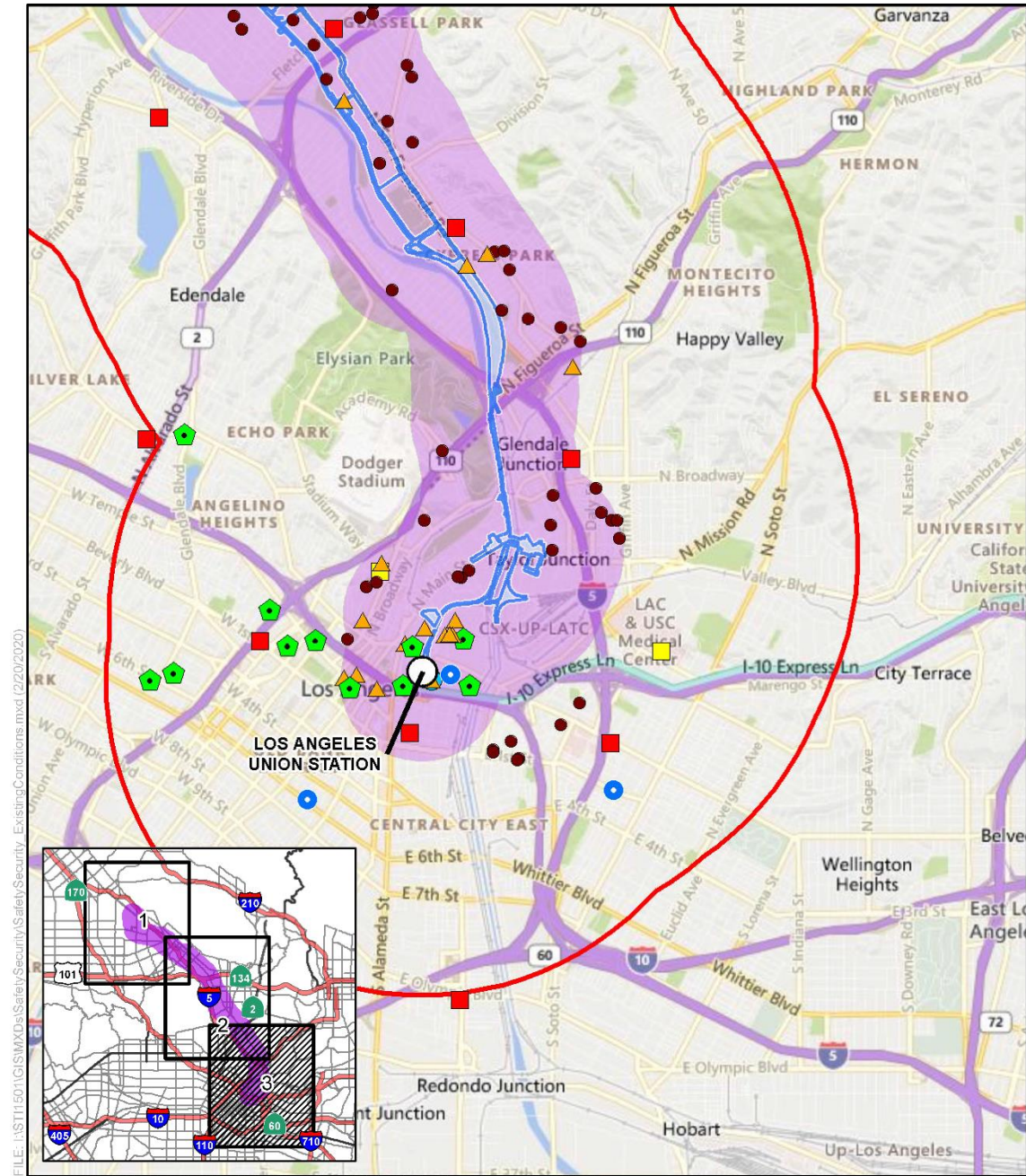
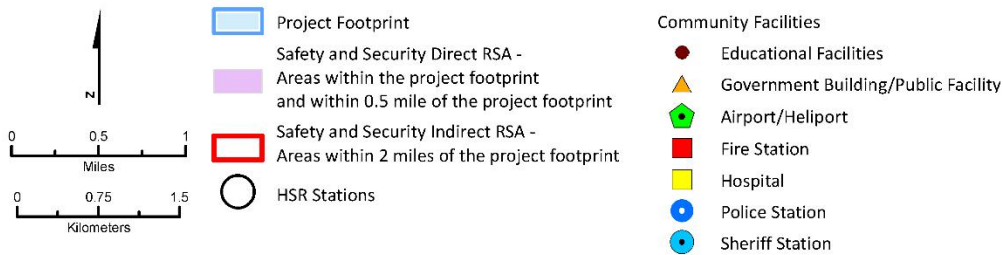


Figure 3.11-1 Safety and Security Existing Conditions

(Sheet 2 of 3)



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED  
 SOURCE: Bing (2018); Los Angeles County (2015); CHSRA (11/2019)



**Figure 3.11-1 Safety and Security Existing Conditions**  
 (Sheet 3 of 3)

### 3.11.4.2 *Impact Avoidance and Minimization Features*

The HSR Build Alternative incorporates standardized HSR features to avoid and minimize impacts. These features are referred to as IAMFs. The Authority would incorporate IAMFs during project design and construction; therefore, the analysis of effects of the HSR Build Alternative in this section factors in all applicable IAMFs. Appendix 2-B: Impact Avoidance and Minimization Features, provides a detailed description of IAMFs that are included as part of the HSR Build Alternative. IAMFs applicable to safety and security resources include:

- SS-IAMF#1: Construction Safety Transportation Management Plan—The contractor would prepare a construction safety transportation management plan in coordination with local jurisdictions.
- SS-IAMF#2: Safety and Security Management Plan—The contractor would prepare a technical memorandum describing how construction-related safety and security measures would be implemented.
- SS-IAMF#3: Hazard Analyses—The Authority would conduct a hazard management program to identify hazards and assess the risk associated with these hazards.
- SS-IAMF#4: Oil and Gas Wells—The contractor would identify and inspect all active and abandoned oil wells within 200 feet of the HSR tracks.
- SS-IAMF#5: Aviation Safety—The Authority and/or the contractor would ensure all Federal Aviation Administration (FAA) requirements are met.
- AQ-IAMF#1: Fugitive Dust Emissions—The contractor would employ measures to minimize and control fugitive dust emissions.
- AQ-IAMF#2: Selection of Coatings—The contractor shall use authorized coatings compliant with volatile organic compound requirements.
- HMW-IAMF#2: Landfill—The contractor would verify methane protection measures, via technical memorandum, when work is implemented within 1,000 feet of a landfill.
- GEO-IAMF#8, Suspension of Operations during an Earthquake—Preparing a technical memorandum documenting how suspension of operations during or after an earthquake was addressed in project design.
- GEO-IAMF#10: Geology and Soils—The contractor would document, in a technical memorandum, the guidelines and standards for facility design and construction.
- TR-IAMF#2: Construction Transportation Plan—The design-build contractor shall prepare a detailed Construction Transportation Plan in close consultation with the local jurisdiction for the purpose of minimizing the impact of construction and construction traffic on adjoining and nearby roadways.
- TR-IAMF#4: Maintenance of Pedestrian Access—The contractor shall prepare specific construction management plans to address maintenance of pedestrian access during the construction period.
- TR-IAMF#5: Maintenance of Bicycle Access—The contractor shall prepare specific construction management plans to address maintenance of bicycle access during the construction period.
- TR-IAMF#12: Pedestrian and Bicycle Safety—The contractor shall provide a technical memorandum describing how pedestrian and bicycle accessibility would be provided and supported across the HSR corridor, to and from stations, and on station property.
- HYD-IAMF#2: Flood Protection—The contractor shall prepare a flood protection plan for Authority review and approval to identify construction and design standards.

### **3.11.4.3 Methods for NEPA and CEQA Impact Analysis**

This section describes the sources and methods the Authority used to analyze potential impacts from implementing the HSR Build Alternative on safety and security. These methods apply to both NEPA and CEQA analyses unless otherwise indicated. Refer to Section 3.1.3.4, Methods for Evaluating Impacts, for a description of the general framework for evaluating impacts under NEPA and CEQA. Laws, regulations, and orders (see Section 3.11.2, Laws, Regulations, and Orders) that regulate safety and security resources were also considered in the evaluation of impacts on safety and security. As summarized in Section 3.11.1, Introduction, seven other resource sections in this EIR/EIS also provide information related to safety and security.

#### **Emergency Services**

Analysts reviewed general plans, emergency plans, and other relevant local government planning documents and corresponded with local fire protection, police, and other emergency 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 potential impacts resulting from implementation of the HSR Build Alternative.

Analysts reviewed police department and law enforcement call response times. Crime rates in the City of Burbank, the City of Glendale, and the City of Los Angeles were also compared with crime rates throughout the State of California. Statistics for onboard crime on passenger trains were obtained from the Los Angeles County Metropolitan Transportation Authority (Metro) and Union Pacific Railroad (UPRR) to characterize the types of potential security impacts that could occur near of the HSR right-of-way and HSR stations with implementation of the HSR Build Alternative. These data represent the best publicly available statistics for the types of crime that might occur during HSR operations.

#### **Community Safety and Security**

Analysts reviewed the planned roadway improvements and planned temporary or permanent road closures and relocations that would occur for HSR construction and operations and the potential of the roadway improvements, closures, and relocations to affect motor vehicle drivers, pedestrians, and bicyclists. Analysts gathered data from several sources, including the CHP, the California Office of Traffic Safety, and the FRA to evaluate motor vehicle, pedestrian, and bicycle safety, including incidents occurring at highway-rail grade crossings and to characterize accidents and incidents within the RSA. Analysts collected vehicle and train accident data from the CHP and the FRA to provide a baseline for evaluating potential impacts resulting from implementation of the HSR Build Alternative. The evaluation of community safety impacts was based primarily on (1) international rail operating experience and (2) existing conditions compared with the design and operational features of the HSR Build Alternative.

#### **Natural Disasters**

Analysts reviewed maps, tables, and other relevant data related to dam failure/inundation/flood risks, geotechnical hazards, high winds, and wildfire hazards. 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 potential impacts resulting from implementation of the HSR Build Alternative.

#### **Built Environment Hazards**

Analysts developed a geographic information system 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 (landfills and waste disposal sites) to evaluate how construction and operation of the HSR Build Alternative may cause safety and security hazards.



#### **3.11.4.4 Method for Determining Significance under CEQA**

CEQA requires that an EIR identify the significant environmental impacts of a project (CEQA Guidelines § 15126). One of the primary differences between NEPA and CEQA is that CEQA requires a significance determination for each impact using a threshold-based analysis (see Section 3.1.3.4, Methods for Evaluating Impacts, for further information). By contrast, under NEPA, significance is used to determine whether an EIS is required; NEPA requires an EIS to be prepared when the proposed federal action (project) as a whole has the potential to “significantly affect the quality of the human environment.” Accordingly, Section 3.11.9, CEQA Significance Conclusions, summarizes the significance of the environmental impacts on safety and security resources for the HSR Build Alternative. The Authority is using the following thresholds to determine if a significant impact on safety and security resources would occur because of the HSR Build Alternative. A significant impact is one that would:

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the safety or security of such facilities
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in a safety hazard or excessive noise 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 and/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 in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services, including fire protection, police protection, and emergency services
- Result in inadequate emergency access<sup>4</sup>
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires
- If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, substantially impair an adopted emergency response plan or emergency evacuation plan
- If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, 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
- If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, 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 result in temporary or ongoing impacts to the environment
- If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, 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

<sup>4</sup> For the purposes of this analysis, inadequate emergency access is defined as a substantial increase in emergency response times.

As discussed below, 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 the potential for a significant impact related to safety and security. Therefore, whether the project would conflict with adopted policies, plans, or programs regarding safety with respect to public transit, bicycle, or pedestrian facilities, or with an adopted emergency response plan or emergency evacuation, 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 describes the affected environment for safety and security resources in the RSA. It also summarizes the affected environment of resources from other sections of this Draft EIR/EIS that are applicable to safety and security, as identified in Section 3.11.1, Introduction. This information provides the context for the environmental analysis and evaluation of impacts.

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

##### Fire Response

There are three fire departments within the RSA: Burbank Fire Department, Glendale Fire Department (GFD), and Los Angeles Fire Department (LAFD). Table 3.11-4 summarizes the fire departments and types of equipment operating within the safety and security RSA, and Figure 3.11-1 (Sheets 1 through 3) shows the locations of the fire stations. Service areas, equipment/staffing, average response times, and mutual-aid agreements for each fire department are discussed below.

**Table 3.11-4 Fire Departments within the Resource Study Areas**

Fire Department	Service Area for Burbank to Los Angeles Project Section	Equipment/Staffing	Average Response Times <sup>1</sup>
Burbank Fire Department	City of Burbank	2 ladder trucks 6 engines 1 Type II engine for vegetation fires 1 HAZMAT truck 36 paid personnel per shift	4:33 minutes
Glendale Fire Department	City of Glendale	3 ladder trucks 9 engines 1 Type III engine for vegetation fires 1 light/air truck 1 HAZMAT truck 1 urban search and rescue truck 1 emergency medical service trailer 1 decontamination trailer 240 sworn and unsworn personnel, and 55 sworn members on duty every day.	5:29 minutes

Fire Department	Service Area for Burbank to Los Angeles Project Section	Equipment/Staffing	Average Response Times <sup>1</sup>
Los Angeles Fire Department	City of Los Angeles	92 Type I engines 42 truck/light forces 93 paramedic ambulances 47 basic life support ambulances 3 hazardous materials squads 29 assessment truck/light forces 15 brush patrols 6 urban search and rescue companies 1 heavy rescue 3,297 sworn fire personnel 363 civilian fire personnel	6:36 minutes (EMS) 6:27 minutes (Non-EMS)

Sources: Burbank Fire Department, 2016; City of Glendale, 2016a; Los Angeles Fire Department, 2017

<sup>1</sup> Response time = call processing + turn out + travel

EMS = emergency medical service

The Burbank Fire Department serves the City of Burbank and operates six fire stations in the Burbank area (City of Burbank 2013), with an average response time of 4:33 minutes. The Burbank Fire Department is a member of the Verdugo Joint Fire Communications Center, which fields service calls for the cities of Burbank, Glendale, Pasadena, Alhambra, Arcadia, Monrovia, Montebello, Monterey Park, San Gabriel, San Marino, Sierra Madre, and South Pasadena. In fiscal year 2015/2016, the six Burbank stations received a total of 10,681 phone calls (City of Burbank 2016).

The GFD serves the City of Glendale and operates nine fire stations throughout the city, with an average response time of 5:29 minutes. The GFD, along with the Burbank Fire Department, participates in the Verdugo Joint Fire Communications Center. The GFD also participates in the Standardized Statewide Emergency Management System and has mutual-aid agreements with the City of Los Angeles and Los Angeles County. In 2010, the nine Glendale stations received a total of 15,800 phone calls (City of Glendale 2010).

The City of Los Angeles is served by the LAFD. There are nine LAFD stations that serve the project section. With the exception of one station in the West Bureau, these stations are part of the LAFD's Central Bureau, which is responsible for 23 stations and 2,100 personnel. The average response time for the LAFD is 6:36 minutes for emergency medical service and 6:27 for non-emergency medical service. The nine stations that serve the project section specifically receive 10 to 20 calls per day (LAFD 2019).

**Fire Hazards**

Fire hazard models provide a measure of the likelihood of an area burning and how it burns (e.g., intensity, speed, embers produced) so emergency response personnel are able to predict the likely damage by a fire. Fire hazard measurement includes the speed at which wildfire moves, the amount of heat the fire produces, and the burning firebrands the fire sends ahead of the flaming front (California Department of Forestry and Fire Protection [CAL FIRE] 2012d).

CAL FIRE publishes the Strategic Plan for California (CAL FIRE 2012b), which provides guidance for reducing the risk of wildfire and for dealing with wildfires and their aftermaths when they occur. This plan identifies and assesses communities at risk of wildfire damage. CAL FIRE has created Fire Hazard Severity Zones (CAL FIRE 2012a) to map communities at risk of wildfire damage. Additionally, CAL FIRE prepares county-specific Unit Strategic Plans for Los Angeles County (CAL FIRE 2013a) fire departments. The HSR Build Alternative is close to areas designated as moderate, high, and very high fire hazard severity zones for both local and state responsibility areas. Therefore, the HSR Build Alternative is in close proximity to areas that are considered to

pose a risk for wildfires. According to the Federal Emergency Management Agency (FEMA), Los Angeles County has been categorized as having highly frequent wildfires (FEMA 2015). As shown in Table 3.11-5, the following wildfires have occurred in Los Angeles County in the past 5 years. Due to the recent California drought, wildfire activity is expected to remain higher than normal in the near term (Ready for Wildfire.org 2016).

**Table 3.11-5 Wildfire Activity within Los Angeles County**

Jurisdiction	Number of Wildfires				
	2013	2014	2015	2016	2017
Los Angeles County	150	80	94	101	177

Source: CAL FIRE, 2013, 2014, 2015, 2016, and 2017

### Secondary Hazards from Wildfires

Secondary hazards often occur in locations during and after wildfire activities. During wildfires, prevailing winds often carry smoke into areas where people work and live. Most areas are susceptible to smoke inundation during wildfires. Typically, these conditions are temporary. Once a wildfire has been extinguished, secondary hazards such as landslides or mudflows could occur if rain were to inundate burn scars where vegetation no longer exists. This typically takes place in hilly or mountainous terrain where wildfires have occurred.

### Law Enforcement

There are three police departments within the RSA: the Burbank Police Department, the Glendale Police Department, and the Los Angeles Police Department, as shown on Figure 3.11-1. Table 3.11-6 provides an overview of staffing levels/service and average response times. Mutual-aid agreements for each police department and other information are described in greater detail below.

**Table 3.11-6 Law Enforcement Jurisdictions within the Resource Study Areas**

Police Department	Service Area for Burbank to Los Angeles Project Section	Staffing Levels/Service	Average Response Times
Burbank Police Department	City of Burbank	152 sworn personnel 104 civilian personnel	3:36 minutes—high priority <sup>1</sup> 16:27 minutes—all calls
Glendale Police Department	City of Glendale	233 full-time sworn personnel 102 full-time civilian personnel	Priority E—5:23 minutes Priority 1—5:09 minutes Priority 2—25:48 minutes
Los Angeles Police Department	City of Los Angeles—Central Area	370 sworn personnel 30 civilian personnel	Emergency Calls—2.7 minutes Non-Emergency—13.7 minutes
	Hollenbeck Area	350 sworn personnel 30 civilian personnel	Emergency Calls—4.6 minutes Non-Emergency—23.1 minutes
	Northeast Area	295 sworn personnel 16 civilian personnel	Emergency Calls—5.4 minutes Non-Emergency—25.1 minutes

Sources: Burbank Police Department, 2016; Glendale Police Department, 2017; Los Angeles Police Department, 2017

<sup>1</sup> Life-threatening or violent crimes in progress.

The Burbank Police Department receives about 43 Priority 1 (life-threatening or violent crimes in progress) phone calls per month. The Burbank Police Department has mutual-aid agreements with

Los Angeles County Sheriff's Department Area C, the Burbank Airport Police Department, and the Glendale Police Department. Some of these agreements are used occasionally, while others are used more frequently (Burbank Police Department 2013).

The Glendale Police Department receives an average of 316 phone calls for service per day. In 2016, the department received a total of 24,543 Priority 1 (emergency, just occurred), 31,438 Priority 2 (urgent, not life-threatening), and 880 Priority E (in progress, life-threatening) calls. The Glendale Police Department is part of the Los Angeles County master mutual-aid agreement, with the first outreach to Area C (San Fernando, Burbank, Pasadena, South Pasadena, Alhambra, San Gabriel, San Marino, and Monterey Park). In the event of a major incident, an Area C Mutual Aid request initiates the response of half the deployment and a supervisor of the operational shift (City of Glendale 2016).

The Los Angeles Police Department received 1,255,733 calls in 2014, 789,366 of which generated calls for service (Los Angeles Police Department 2016a). There are three Los Angeles Police Department stations (Central Area, Hollenbeck Area, and Northeast Area) within the RSA. Los Angeles County and City of Los Angeles have memoranda of understanding included as an appendix to the Operational Area Emergency Response Plan (OAERP) (Los Angeles County 2012b). The OAERP integrates the Mutual Aid Region I resources so they are capable of responding to emergencies. As described above, both the Cities of Burbank and Glendale are part of Area C, while the City of Los Angeles is located in Area H within Mutual Aid Region 1 (Los Angeles County 2012). The Los Angeles Police Department's radio system has interoperability access to all Los Angeles Police Department areas and 40 local law enforcement agencies, including the Burbank and Glendale police departments, the Los Angeles County Sheriff's Department, and the CHP (Los Angeles Police Department 2016b).

The Los Angeles County Sheriff's Department's Transit Policing Division (Transit Policing Division) provides contract transit services to Metro, which operates the public transit system serving Los Angeles County and the RSA. The deputies provide transit police services for both the light rail and bus transportation systems. The Transit Policing Division also serves as the contract transit police agency for Metrolink's heavy commuter rail transportation system located within the RSA (Los Angeles County Sheriff's Department 2017). While the Transit Policing Division provides contract transit services, the local agencies identified above also respond to calls for these transportation systems when requested by the Transit Policing Division. The Transit Policing Division dispatch policy requires that a response from a local agency be requested when Transit Policing Division patrol units are not able to respond in a reasonable amount of time. Additionally, many of the calls are received directly by local law enforcement agencies due to transit patrons dialing 911, where, in most cases, the public safety calls are routed to dispatch centers of the local law enforcement agencies (Metro 2016).

The CHP Southern Division's boundaries cover areas within the RSA (CHP 2017). The CHP's primary role is to ensure safety and provide service to the public as they use the state's highway transportation system and to provide safety and security to state employees and state property. Additionally, its role is to assist local governments during emergencies or situations beyond their capabilities. Emergency traffic and officer safety assistance can be requested at any time; therefore, the CHP can also provide day-to-day mutual aid. Formal mutual aid can be granted on approval from the commissioner of the CHP. Division chiefs and area commanders have the authority to mobilize as many of their personnel as necessary for effective response prior to obtaining headquarters' approval (Governor's Office of Emergency Services 2016).

### **Emergency Medical Services**

Hospitals within the RSA are shown on Sheets 1 through 3 of Figure 3.11-1. Local fire departments, emergency medical service agencies, and independent ambulance services, provide emergency medical services, as described below. The closest Level I Trauma Center<sup>5</sup> is

<sup>5</sup> A Level I Trauma Center is a comprehensive regional resource that is a tertiary-care facility (i.e., providing a higher level of specialty care) central to the trauma system. A Level I Trauma Center is capable of providing total care for every aspect of injury, from prevention through rehabilitation.

outside of the RSA at the LAC+USC Medical Center at 1200 N State Street, Los Angeles, California 90033.

The City of Burbank's emergency medical services are provided by the Burbank Fire Department, emergency medical service agencies, and independent ambulance services. There is one hospital within the city that provides emergency services: Providence Saint Joseph Medical Center.

The City of Glendale's emergency medical services are provided by the GFD, emergency medical service agencies, and independent ambulance services. Three hospitals in the city provide emergency services: Verdugo Hills Hospital, Adventist Medical Center, and Glendale Memorial Hospital.<sup>6</sup>

The City of Los Angeles' emergency medical services are provided by the LAFD, emergency medical service agencies, and independent ambulance services. There are four hospitals within the Los Angeles city limits: Kaiser Foundation Hospital, LAC+USC Medical Center, Pacific Alliance Medical Center, and White Memorial Medical Center. LAC+USC Medical Center is a Level I trauma center.

### Emergency Response Plans

Counties and cities prepare emergency response plans in addition to the emergency operations requirements provided by their general plans. The purpose of these emergency response plans is to outline procedures for operation during emergencies, including fires, floods, earthquakes, and other natural disasters; terrorism; transportation emergencies; civil disturbance; and hazardous materials spills. These plans also identify the locations of critical emergency response facilities, including emergency dispatch and operation centers, government structures, and hospitals or other major medical facilities. Table 3.11-7 summarizes the county's, cities', and railroad agencies' emergency response plans. Section 3.6, Public Utilities and Energy, discusses facilities that provide water, electricity, and gas during emergency situations.

**Table 3.11-7 Emergency Response Plans for Jurisdictions within the Resource Study Areas**

Plan	Description
<b>Los Angeles County</b>	
Los Angeles County All-Hazard Mitigation Plan (2014a)	The <i>All-Hazard Mitigation Plan</i> sets strategies for coping with the natural and human-caused events and with technological hazards faced by county residents. The plan is a compilation of information from county departments correlated with known and projected hazards that face Southern California. The plan complies with and has been approved by FEMA and the Governor's Office of Emergency Services. The plan has been formally adopted by the Los Angeles County Board of Supervisors for use in the development of specific hazard mitigation proposals that have a high cost-benefit ratio.  The plan addresses potential damages in the unincorporated portions of the county as well as to county facilities. Cities, schools, special districts, and eligible nonprofit organizations within Los Angeles County must prepare and submit separate hazard mitigation plans to FEMA for approval.
County of Los Angeles Operational Area Emergency Response Plan (2012)	The OAERP addresses coordinated response to emergency situations associated with natural events, human-caused events, and technological incidents for the Los Angeles County Operational Area. The OAERP does not address normal day-to-day emergencies; the operational concepts reflected in this plan focus on potential large-scale disasters, which can generate unique situations requiring an unusual or extraordinary emergency response. The OAERP establishes the coordinated emergency management system, which includes prevention, protection, response, recovery, and mitigation.

<sup>6</sup> City of Glendale General Plan, Safety Element. August 2003.

Plan	Description
Los Angeles County Operational Area Terrorism Plan (2003)	The <i>Operational Area Terrorism Plan</i> establishes policies and procedures to guide the Los Angeles County Operational Area in planning for and responding to an emergency caused by an actual or suspected act of terrorism. These acts include cyber/electronic terrorism and acts using weapons of mass destruction such as chemical, biological, radiological, nuclear, or explosive weapons.
<b>City of Burbank</b>	
All-Hazard Mitigation Plan (2014)	The <i>All-Hazard Mitigation Plan</i> for the City of Burbank covers each of the major natural hazards that pose risks to the city. The primary objective of the mitigation plan is to reduce the negative impacts of future disasters on Burbank by saving lives and reducing injuries, minimizing damage to buildings and infrastructure (especially critical facilities), and minimizing economic losses. The All-Hazard Mitigation Plan is built upon quantitative assessments, to the extent that data allows, of each of the significant natural hazards that may affect Burbank, including their frequency, their severity, and areas of the city likely to be affected. The Burbank All-Hazard Mitigation Plan also includes a qualitative or quantitative assessment of the vulnerability of buildings, infrastructure, and people to each of these hazards. The plan complies with and has been approved by FEMA and has been formally adopted by the Burbank City Council.
City of Burbank Multi-Hazard Functional Plan (2009)	The <i>Multi-Hazard Functional Plan</i> addresses the City of Burbank's planned response to emergencies associated with natural disasters and technological incidents, including both peacetime and wartime nuclear defense operations. It provides an overview of operational concepts, identifies components of the city's emergency management organization within the Standardized Emergency Management System and National Incident Management System, and describes the overall responsibilities of the federal, state, and county entities and the City of Burbank for protecting life and property and assuring the overall well-being of the population.
<b>City of Glendale</b>	
City of Glendale Emergency Plan (2008)	The <i>City of Glendale Emergency Plan</i> addresses the City's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies. The plan does not address normal day-to-day emergencies or the well-established and routine procedures used in coping with such emergencies. Instead, the operational concepts reflected in this plan focus on potential large-scale disasters, which can generate unique situations requiring unusual emergency responses.
City of Glendale Hazard Mitigation Plan Update (2012)	The mission of the <i>Hazard Mitigation Plan Update</i> is to proactively facilitate and support communitywide policies, practices, and programs that make Glendale better prepared in the event of a natural disaster. The primary objective of the mitigation plan is to reduce the negative impacts of future disasters on Glendale, to save lives and reduce injuries, to minimize damage to buildings and infrastructure, and to minimize economic losses. The <i>Glendale Hazard Mitigation Plan Update</i> documents Glendale's commitment to promoting sound public policies designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards by increasing public awareness, identifying resources for risk assessment, risk reduction, and loss reduction, and identifying specific activities to help make Glendale more disaster-resistant and disaster-resilient. This plan is an educational and planning document, not a regulatory document.
City of Glendale Natural Hazards Mitigation Plan (2006)	Glendale's <i>Natural Hazards Mitigation Plan</i> provides a framework for planning for the four main natural hazards (earthquakes, wildfires, floods, and landslides) that have the potential to affect the Glendale area. The resources and background information in the plan are applicable citywide, and the goals and recommendations can lay the groundwork for local mitigation plans and partnerships.

Plan	Description
<b>City of Los Angeles</b>	
City of Los Angeles Emergency Operations Plan (2014)	The <i>Emergency Operations Plan</i> for the City of Los Angeles addresses the City's response to small- to large-scale emergency situations associated with natural disasters or human-caused emergencies. It is established in accordance with Division 8, Chapter 3, of the Los Angeles Administrative Code and the California Emergency Services Act. The Emergency Operations Plan is consistent and compatible with the State of California Emergency Plan. 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.
<b>UPRR</b>	
Union Pacific Hazardous Materials Emergency Response Plan (2009)	This <i>Hazardous Material Emergency Response Plan</i> provides emergency response information to personnel who may become involved in a hazardous materials incident. It is designed to be consistent with the emergency response plan provisions set forth by the Occupational Safety and Health Administration under 29 C.F.R. Part 1910.120(q). The plan describes the emergency response procedures that will apply to a "nonincidental" release or threatened release of hazardous materials from a locomotive, railcar, vessel, or facility under the jurisdiction, custody, or control of the Union Pacific Railroad Company. It applies to a nonincidental release that occurs anywhere within Union Pacific Railroad's system, including off-site track and other right-of-way.
<b>Amtrak</b>	
Amtrak System Safety Program (2007)	The Amtrak System Safety Program provides a comprehensive description of current safety-related policies, programs, and practices that aid in the prevention of and response to accidents, injuries, and illnesses. The system safety principles are intended to integrate safety into all phases, including design, construction, modification and rehabilitation, operation, and maintenance, to reduce risk and eliminate, to the extent possible, potentially hazardous activities and conditions. The System Safety Program is also intended to comply with applicable federal and state laws and local codes, ordinances, and regulations. The System Safety Program discusses the coordination between Amtrak and a wide variety of agencies, including those of a regulatory nature as well as those associated with emergency response. Amtrak's Emergency Preparedness Group maintains an aggressive outreach program to identify and train emergency response agencies located along Amtrak-owned or -operated railroad. Federal regulations (49 C.F.R. 239) also require Amtrak to jointly develop an emergency response plan with "host" carriers and to conduct an annual evacuation drill.
<b>Metrolink</b>	
Security and Emergency Preparedness Plan (2014a)	The Metrolink <i>Security and Emergency Preparedness Plan</i> establishes mechanisms through which security-related threats and vulnerabilities can be identified and addressed. The plan incorporates security measures to address all aspects of operations and service, including business administration and maintenance activities, and establishes a comprehensive and effective security program throughout the organization. The plan describes the policies, procedures, roles, and responsibilities to be fulfilled by all employees and contractors.

C.F.R. = Code of Federal Regulations  
 FEMA = Federal Emergency Management Agency  
 OAERP = Operational Area Emergency Response Plan

County and city general plans and emergency response plans typically identify regionally significant roads as emergency evacuation routes. Table 3.11-8 lists the 18 evacuation routes located within the RSA. At-grade crossings of evacuation routes and railway tracks could result in potential delays for emergency response and evacuation if trains block these roads. Table 3.11-8 also indicates whether any of the evacuation routes are existing at-grade crossings.



**Table 3.11-8 Evacuation Routes within Resource Study Area Jurisdictions**

Street	Existing At-Grade Crossing
<b>City of Burbank</b>	
Glenoaks Boulevard	No
San Fernando Boulevard	No
Burbank Boulevard	No
Victory Boulevard	No
W Olive Avenue	No
<b>City of Glendale</b>	
San Fernando Road	No
Sonora Avenue	Yes
Glenoaks Boulevard	No
Grandview Avenue	Yes
Colorado Street	No
Glendale Boulevard	No
S Brand Street	No
<b>City of Los Angeles</b>	
Eagle Rock Boulevard	No
San Fernando Road	No
Pasadena Avenue	No
Broadway	No
Mission Road	No
Valley Boulevard	No

Sources: City of Burbank, 2013; City of Glendale, 2003; City of Los Angeles, 1996a

**Emergency Access—Railroads**

According to the *Amtrak Station Program and Planning Guideline*, facilities that result in a closed or partially enclosed overbuild structure over tracks must include design features to ensure adequate ventilation, illumination, emergency egress, and fire protection in order to provide a safe environment for Amtrak passengers and employees during normal and emergency operations. Additionally, overbuilds are designed to meet the requirements of the NFPA, including NFPA Standard 130 for Fixed Guideway Transit and Passenger Rail Systems (NFPA 2014). As shown in Chapter 2, Table 2-7, in 2016 there were 61 Metrolink trains and 12 Amtrak trains operating daily in the Los Angeles–San Diego–San Luis Obispo Corridor between Burbank and Los Angeles (Metrolink 2016).

The requirements of the NFPA are intended to:

- Provide a stream of noncontaminated air to passengers in a path of egress away from a train fire
- Produce airflow rates to prevent back-layering of smoke in a path of egress away from a train fire
- Limit the air temperature in a path of egress away from a train fire to 140 degrees Fahrenheit

Amtrak enhances safety along its rails via its Passenger Train Emergency Response program. The Passenger Train Emergency Response program, led by the Emergency Management and Corporate Security Department, conducts classroom and hands-on training for emergency

response agencies, including law enforcement, fire departments, emergency medical technicians, 911 dispatchers, emergency managers, and public works department employees. In 2015, Emergency Management and Corporate Security Department regional emergency managers trained more than 5,000 first responders in the U.S. and Canada (Amtrak 2015).

Similarly, the *Southern California Regional Rail Authority (SCRRA) Design Criteria Manual* (Metrolink 2014b) requires Metrolink to be compliant with the NFPA. Designs will follow these requirements for fire protection, ac power and lighting systems, and communication systems.

The *Union Pacific Hazardous Materials Emergency Response Plan* is a performance-based plan that provides guidance for reporting a hazardous release, as well as a list of training requirements for those responding to an incident. Each of UPRR's operating divisions undergoes an annual, unannounced drill to ensure all aspects of the *Union Pacific Hazardous Materials Emergency Response Plan* are in place and are being followed by employees. Additionally, UPRR provides trainings to public responders, including local fire departments, so they can effectively respond to incidents along the UPRR network (UPRR 2016b).

### 3.11.5.2 Community Safety and Security

#### Crime

Violent crime and property crime rates for the region are summarized in Table 3.11-9. Crime rates in the cities of Burbank and Los Angeles, where the stations would be located, were compared to crime rates in the state. The violent crime rate in the city of Burbank is lower than the state average (1.98 crimes per 1,000 inhabitants in Burbank versus 4.45 crimes per 1,000 inhabitants in California as a whole), while the violent crime rate in the city of Los Angeles is higher than the statewide average (7.19 crimes per 1,000 inhabitants). Property crime in the cities of Burbank and Los Angeles (27.8 and 24.7 crimes per 1,000 inhabitants, respectively) is slightly higher, in Burbank, and slightly lower, in Los Angeles, than the statewide average (25.5 crimes per 1,000 inhabitants) (U.S. Department of Justice 2016a).

**Table 3.11-9 2016 Crime Rates in the Region**

Jurisdiction	Violent Crime Rate	Property Crime Rate
California	4.45	25.5
City of Burbank	1.98	27.8
City of Glendale	1.11	12.2
City of Los Angeles	7.19	24.7

Source: U.S. Department of Justice, 2016a, 2016b

Crime rates are defined as the number of crimes per 1,000 inhabitants in any given area per year.

Analysis of crime for transit and railroads located within Los Angeles County is based on data gathered from Metro, the Los Angeles Transportation Services Bureau, and UPRR in Los Angeles County. Collectively, Metro and the Los Angeles Transportation Services Bureau reported 808 instances of violent crime (murder/robbery/aggravated assault) and 1,132 property crimes (burglary/larceny-theft) systemwide in 2015. During the same period, UPRR in Los Angeles County experienced no violent crimes and 283 property crimes (burglary, larceny-theft, and arson) (Federal Bureau of Investigation 2016).

#### Automobiles and Highways

Automobile travel is both the most common and the most hazardous transportation mode. According to the CHP, in 2018, there were 3,134 fatal and 188,445 injury traffic collisions on California's highways (CHP 2019).

The U.S. Department of Transportation classifies factors involved in fatal vehicle crashes as either transportation-related or human-related. The most influential transportation factors include traffic controls, speed and route type, road characteristics, weather impacts, and road

classification. The most influential human factors include number of persons, drunk driving, and lighting conditions.

Vehicular safety issues associated with railroads in Los Angeles County are the result of conflicts between motor vehicles and trains at at-grade crossings. In 2018, California ranked second for the most highway-rail grade crossing collisions in the nation and first for highway-rail grade crossing fatalities (Operation Lifesaver, Inc. 2019). There were 34 highway-rail grade crossing collisions in Los Angeles County in 2018, 26 of which were vehicle collisions. These collisions resulted in six fatality (FRA 2018). The Railroad Operations section below discusses historic train and vehicle collisions that have occurred at the at-grade intersections crossing the railroad tracks within the RSA.

The California Office of Traffic Safety provides annual data on vehicle collisions with other vehicles, pedestrian, and bicyclists in cities and counties throughout California. The most recent data provided by the California Office of Traffic Safety are the 2016 Collision Rankings. In Los Angeles County, 91,468 people were killed or injured in collisions in 2016. In the cities of Burbank, Glendale, and Los Angeles, 236, 1,162, and 44,207 victims were killed or injured in 2016, respectively (California Office of Traffic Safety 2019). Additional discussion regarding existing vehicular traffic conditions, including congestion and accident patterns, is included in Section 3.2, Transportation, of this Draft EIR/EIS and in the *Burbank to Los Angeles Project Section: Transportation Technical Report* (Authority 2019).

### **Public Transportation**

Individuals wishing to use public transportation have several options within the safety and security RSA, including Metro, the Los Angeles Department of Transportation, the Burbank Bus, the Glendale Beeline, Santa Clarita Transit, and the LAX Flyaway. Common safety measures among many of these transit providers include community education and outreach, cameras, and system tracking.

In the Los Angeles metropolitan area, Metro provides various community outreach services, including tours, community events, and presentations, to educate the public about its safety initiatives and how to stay safe while using Metro transportation (Metro 2017).

### **Railroads Operations**

UPRR (a freight hauling railroad), Amtrak, and SCRRRA (passenger railroads) operate within the RSA. These rail services implement a number of emergency response plans previously identified in Table 3.11-7, as well as company-specific safety and security measures to reduce the risk of railroad-related accidents and crime onboard trains, at stations, and within rights-of-way.

### **Security**

#### **Union Pacific Railroad**

UPRR employs a police department staffed with more than 220 special agents systemwide with primary jurisdiction over crimes committed against the railroad, including trespassing on railroad rights-of-way, theft of railroad property, threats of terrorism, and derailments (UPRR 2016a). The police department uses security monitoring technology to protect critical infrastructure from intruders 24 hours per day. It coordinates its operation with U.S. Customs and Border Protection, the U.S. Coast Guard, the Federal Bureau of Investigation, the Central Intelligence Agency, the Department of Homeland Security, the Transportation Security Administration, and local law enforcement. UPRR is also a partner in the Customs and Border Protection's Customs-Trade Partnership Against Terrorism (UPRR 2016b).

#### **Amtrak**

The Amtrak Police Department aids Amtrak services with behind-the-scenes and front-line security. These forces include Amtrak police officers and special operation units. In addition, the Amtrak Police Department participates in Operation RAILS SAFE, a regional alliance with local, state, and federal agencies. In the RSA, the Amtrak Police Department partners with the Los Angeles County Sheriff's Department to heighten patrols at rights-of-way and station locations. These partnerships also allow for increased security onboard trains, explosive

detection canine sweeps, random passenger bag inspections, and counter-surveillance (Amtrak 2016a). Passengers failing to consent to security procedures are denied access to trains and refused carriage (Amtrak 2016b).

In addition to Amtrak police patrols at Los Angeles Union Station (LAUS), the Los Angeles Police Department has been requested to make more frequent visits to the station during routine patrols of the area. Announcements about unattended baggage are made every 15 minutes, and parcel checks are restricted to ticketed passengers with photo IDs. In addition, Amtrak has ticketing security measures in place at LAUS, a private security guard presence, and safety team briefings on security awareness (Metrolink 2017).

### **Metrolink**

Metrolink, operated by SCRRA, has its own Los Angeles County Sheriff's Department unit, which provides security on trains and along routes. The Transit Passenger Random Baggage Search Program is implemented by Metrolink sheriffs to further strengthen rail security and deter violent criminals from carrying weapons, explosives, or other dangerous items onto the Metrolink transit system. According to the TSA, random baggage inspections are an effective security tool for deterring individuals who may pose a threat to passengers onboard commuter trains. Since predictable security can be exploited, the screening program is unpredictable and occurs at variable times and randomly determined stations. Additionally, Metrolink deputy personnel and canine teams conduct random searches of any article of baggage that a passenger is carrying or transporting via the Metrolink transit system prior to the passenger entering the train. Individuals that refuse inspections are not permitted to access the Metrolink system and deputies will request that the passenger leave the facility (Metrolink 2017).

Metrolink trains have been designed so that they can only be operated with proper wayside signals, which are controlled from a central dispatch location. The train operators or engineers also must acknowledge the wayside signals. Access to the control cab is highly restricted. Engineers sit in a separate car with a secure door that is not opened while the train is in motion. When not in the control cab, the engineers ride in a cab car restricted from other passengers. (Metrolink 2017).

Metrolink also implements several coordinated security efforts:

- Coordinating efforts with local police, the FBI, and the Department of Homeland Security to recognize threats against its 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 any type of rail emergency
- Providing threat awareness training for staff members, conductors, engineers, and other contractor employees

Some of the additional physical security measures under consideration include capital investments (i.e., lighting, fencing, and redirection of access to Metrolink facilities) (Metrolink 2017).

While security at Metrolink stations is the responsibility of the police departments of station cities, since 72 percent of Metrolink's passengers come through LAUS, Metrolink has a heightened presence of law enforcement personnel at LAUS platforms and onboard Metrolink trains. Metrolink also works closely with the station cities to ensure they are aware of the security concerns of passengers. Additional security measures at LAUS are the responsibility of each of the tenants of LAUS (Amtrak and Metro) and the building management company (Metrolink 2017).

### **Safety**

According to the FRA, a train accident involves damages to equipment. Based on 49 C.F.R. 225.5, a "train accident means any collision, derailment, fire, explosion, act of God, or other event involving operation of railroad on-track equipment, whether standing or moving, that results in damages greater than the current reporting threshold to railroad on-track equipment, signals, track, track structures, and roadbed." A train incident involves injuries and is "any event

involving the movement of on-track equipment that results in a reportable casualty, but does not cause reportable damage above the current threshold established for train accidents.” According to the FRA’s definition of accident/incident in 49 C.F.R. 225.5, “accident/incident” means (1) any impact between railroad on-track equipment and a highway user at a highway/rail grade crossing;<sup>7</sup> (2) any collision, derailment, fire, explosion, act of God, or other event involving the operation of railroad on-track equipment, whether standing or moving, that results in reportable damages greater than the current reporting threshold to railroad on-track equipment, signals, track, track structures, and roadbed; (3) each death, injury, or occupational illness that is a new case and meets the general reporting criteria listed in 49 C.F.R. 225.19(d)(1) through (d)(6) concerning an event or exposure arising from the operation of a railroad is a discernable cause of the resulting condition or a discernable cause of a significant aggravation to a preexisting injury or illness. The event or exposure arising from the operation of a railroad need only be one of the discernable causes; it need not be the sole or predominant cause.”

According to FRA accident reports, from January 2010 to February 2019, 1,665 train accidents, 227 crossing incidents, and 1,438 other accidents/incidents occurred in the Los Angeles County region (FRA 2019b).

The FRA defines a highway-rail grade crossing accident/incident as any impact between railroad on-track equipment and highway users (including motorists, bicycles, pedestrians, or any other mode of surface transportation), regardless of whether the impact results in a certain amount of property damage or a reportable injury. The following highway-rail grade crossing accidents/incidents occurred in the Los Angeles County region under UPRR, Amtrak, and SCRRA (Metrolink) operations, during the 5-year period between January 2014 and February 2019 (FRA 2019b).

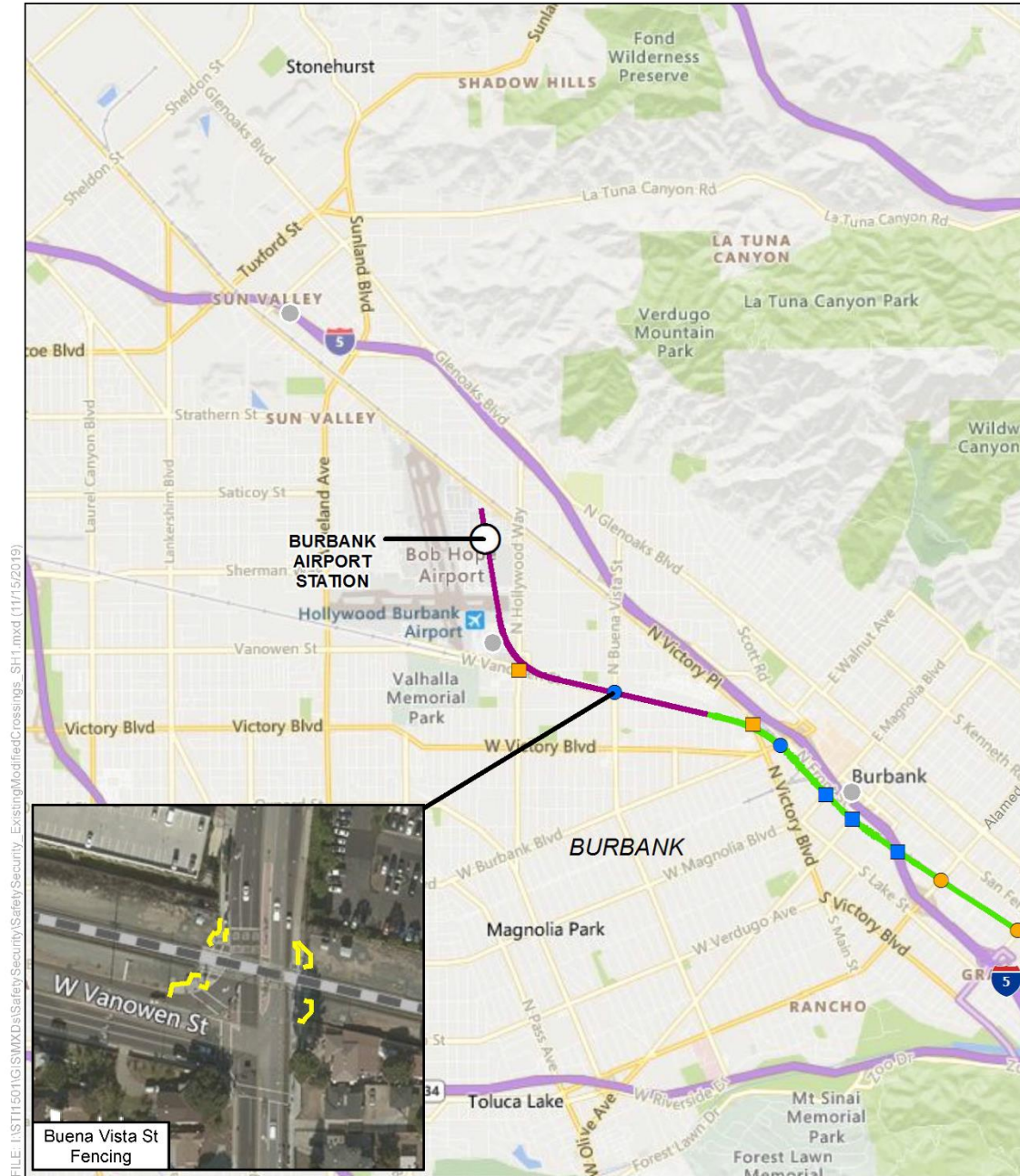
- UPRR—47 highway-rail grade accidents/incidents, of which 38 occurred at public crossings and 2 resulted in fatalities
- Amtrak—8 highway-rail grade accidents/incidents, all of which occurred at public crossings and 5 of which resulted in fatalities
- SCRRA—45 highway-rail grade accidents/incidents, all of which occurred at public crossings, and 11 of which resulted in fatalities

In the Los Angeles County region, between January 2016 and February 2019, 52 accidents/incidents involved automobiles and 21 involved pedestrians (FRA 2019).<sup>8</sup>

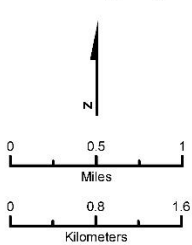
At-grade intersections currently crossing the railroad tracks exist at Buena Vista Street, Sonora Avenue, Grandview Avenue, Flower Street, Chevy Chase Drive, Main Street, and a private Los Angeles Department of Water and Power (LADWP) road. As shown on Figure 3.11-2, barriers to entering the right-of-way include fencing and crossing gates for vehicles. Barriers exist at Buena Vista Street, Sonora Avenue, Grandview Avenue, Flower Street, and Chevy Chase Drive.

<sup>7</sup> The term “highway user” includes automobiles, buses, trucks, motorcycles, bicycles, farm vehicles, pedestrians, and all other modes of surface transportation motorized and nonmotorized.

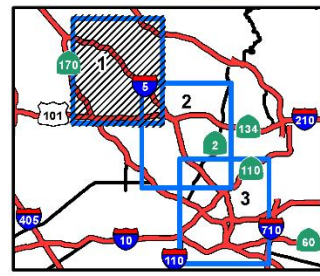
<sup>8</sup> The 3-year period between 2016 and 2019 was used rather than 2014 to 2019 because this is the time period for which the FRA provides these data (FRA 2019, Table 2.08).



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED  
 SOURCE: Bing (2018); CHSRA (11/2019)



- |   |   |
|---|---|
| <p><b>HSR Build Alternative</b></p> <ul style="list-style-type: none"> <li><span style="color: green;">—</span> Surface</li> <li><span style="color: purple;">—</span> Below-grade</li> </ul> <p><b>Existing Crossings (no modifications)</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Overcrossing</li> <li><span style="color: orange;">■</span> Undercrossing</li> </ul> | <p><b>Modified Crossings</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">●</span> Overcrossing</li> <li><span style="color: orange;">●</span> Undercrossing</li> <li><span style="color: yellow;">—</span> Fencing</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 10px; height: 10px; display: inline-block;"></span> HSR Stations</li> <li><span style="color: grey;">●</span> Metrolink Station</li> </ul> |
|---|---|



**Figure 3.11-2 Safety and Security Existing and Modified Crossings**  
 (Sheet 1 of 3)

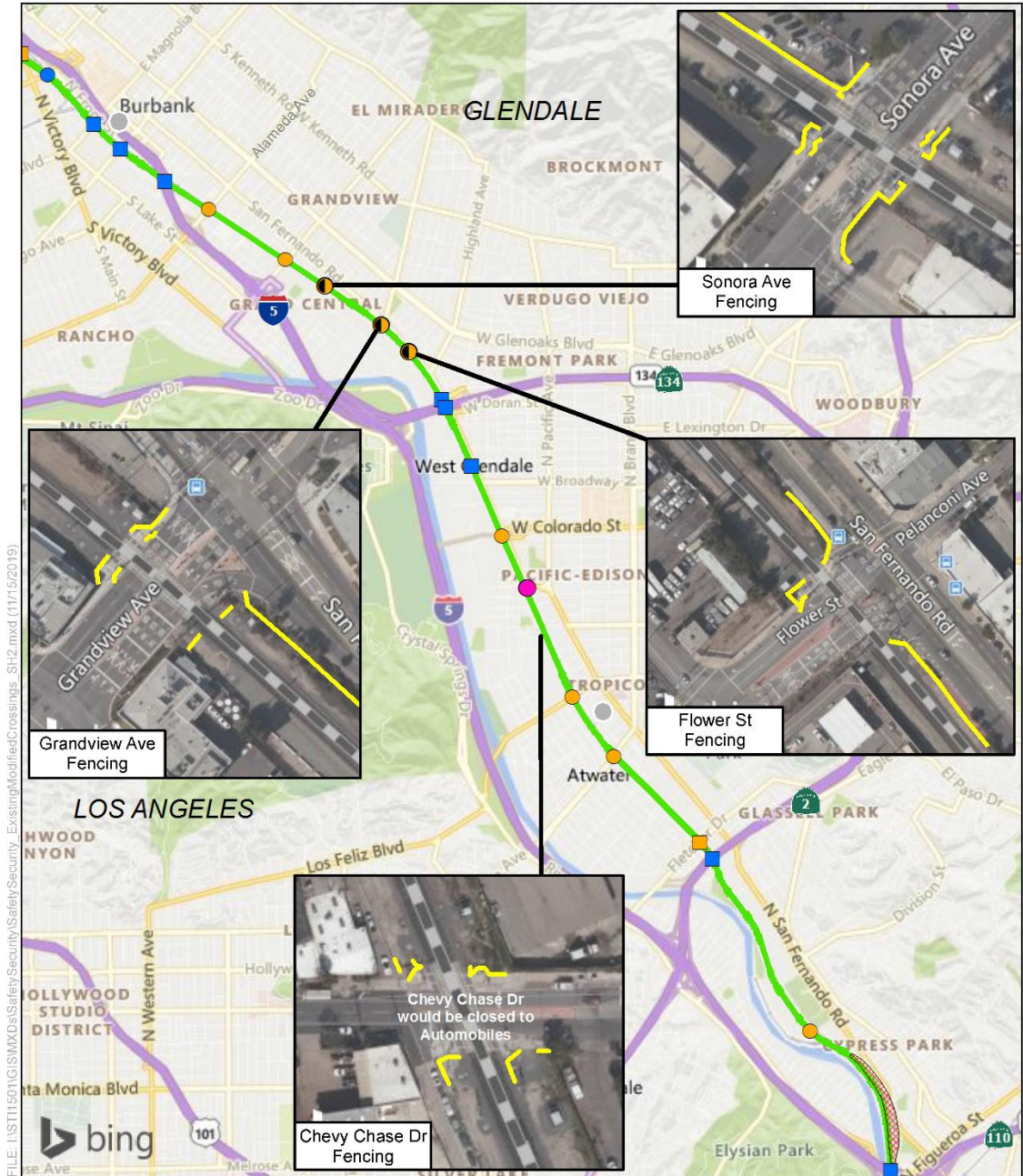
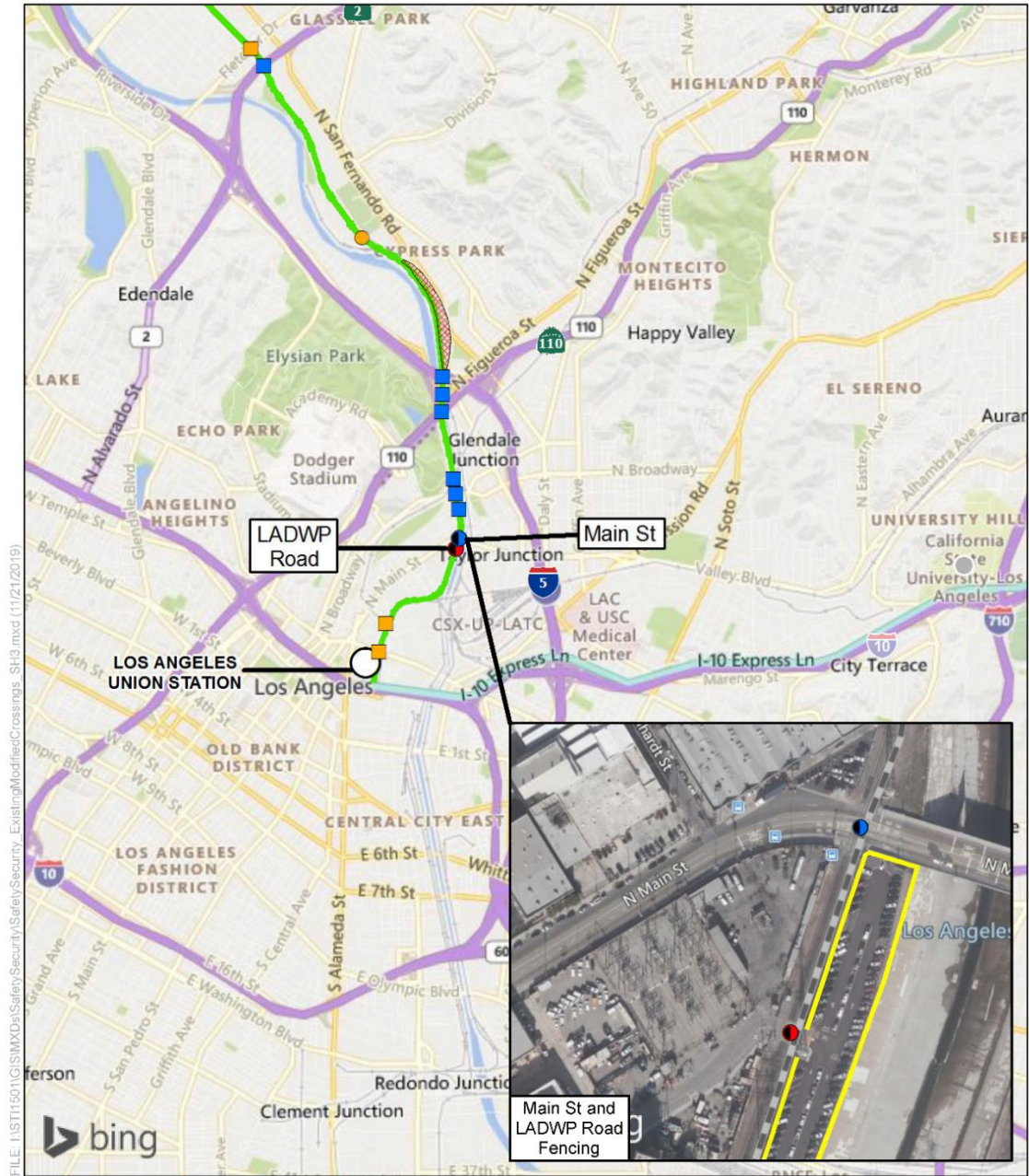
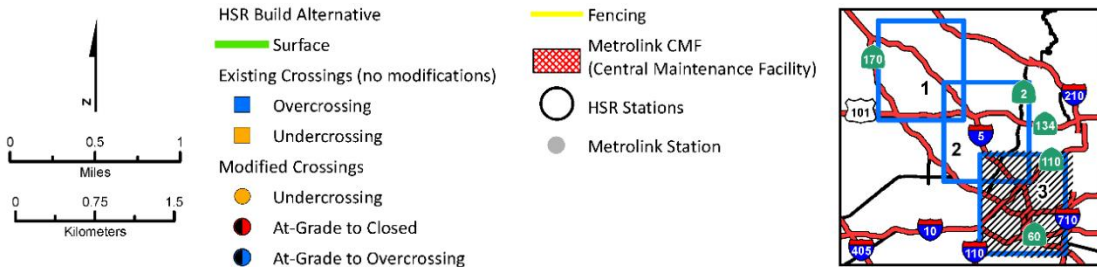


Figure 3.11-2 Safety and Security Existing and Modified Crossings  
(Sheet 2 of 3)



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED  
 SOURCE: Bing (2018); CHSRA (11/2019)



**Figure 3.11-2 Safety and Security Existing and Modified Crossings**  
 (Sheet 3 of 3)



No fencing currently exists at Main Street or the private LADWP road; however, crossing gates exist. As discussed in Section 3.2, Transportation, the FRA Office of Safety Analysis provided data on rail accidents/incidents at grade crossings. The historical data (1980 to 2015) for the existing at-grade rail crossings within the RSA showed the following incidents (FRA 2017):

- Sonora Avenue—One incident involving a Metrolink train and pedestrian
- Main Street—One incident involving a Metrolink train and vehicle, and two incidents involving Atchison, Topeka and Santa Fe (now BNSF Railway) trains and vehicles
- Grandview Avenue—Two incidents involving Metrolink trains and vehicles, one incident involving a Metrolink train and pedestrian, and one incident involving a Southern Pacific Railroad (now UPRR) train and a vehicle
- Buena Vista Street—One incident involving a Metrolink train and vehicle, and three incidents involving Amtrak trains and vehicles

#### **Union Pacific Railroad**

UPRR has a Response Management Communications Center that processes emergency and nonemergency calls from communities. The Response Management Communications Center team operates 24 hours per day, responding to emergencies, reports of vehicles stuck on railroad tracks, criminal activity, and other concerns (UPRR 2016b).

UPRR also transports hazardous materials, which requires special handling, rigorous inspections, strict operating procedures, and other safeguards. UPRR has a Hazardous Management Group that consists of trained experts in hazardous materials transportation safety who work with customers and inspect tank cars to ensure products are properly secured. (UPRR 2016b). UPRR provides fire departments and other emergency responders along the routes to minimize derailment-caused impacts. UPRR also provides HAZMAT training sessions to control hazardous material spills safely (UPRR 2016b). UPRR also inspects railroad tracks, locomotives, and other equipment on a continuous basis and has a track inspection fleet to inspect rail lines. UPRR is continuing to implement Positive Train Control (PTC) (UPRR 2016b). The railroad also uses distributed power units, ultrasonic wheel-defect detection, and wayside detectors to improve safety on its railroad (UPRR 2016a).

UPRR works with federal, state, and local officials to promote safety at rail crossings (UPRR 2016a) and promotes public safety in the community through safety campaigns UPRR also partners with local and state police departments to observe driver behavior at railroad crossings.

#### **Amtrak**

The Amtrak Police Department provides the primary enforcement and education for trespass prevention on Amtrak property. According to Amtrak, the complete elimination of trespassing on railroad property is an unreasonable expectation; however, increased enforcement, education, and, when appropriate, the posting of “no trespassing” signs and fencing can help reduce the frequency of trespassing. Amtrak police also serve on task forces and support other railroad police departments and municipal/state law enforcement agencies in activities, such as installation of fencing, that reduce trespass activity. Areas targeted for fencing include those requested by local communities, locations identified by Amtrak police/local communities, and other potential trespass areas (Amtrak 2016b).

Informal guidelines for fencing railroad rights-of-way include placing fencing at stations to prevent passengers from crossing tracks to access boarding platforms or parking areas; installing fencing to provide security at rail facilities and yards; placing fencing on overgrade structures to prevent individuals from falling, jumping, or throwing objects onto the right-of-way; and installing fencing at other locations when appropriate (Amtrak 2016b).

Amtrak also provides safety tips for travelers on the Safety & Security page of its website regarding safety at stations, onboard trains, and reporting suspicious or unusual activity (Amtrak 2016b).

#### **Metrolink**

Metrolink is part of the Southern California Rail Safety Team, which comprises multiple railroads and government agencies, including Metrolink, the BNSF Railway, Amtrak, UPRR, FRA, CPUC,

the Orange County Transportation Authority, and law enforcement agencies. All of these railroads and government agencies work together to address grade-crossing safety.

Metrolink partners with “Operation Lifesaver” to aid in the prevention of trespassing and highway-rail grade-crossing collisions. Through a network of volunteers, Operation Lifesaver aims to end death and injury on rail property and highway-rail grade crossings through rail safety education programs. When the organization started in 1972, there were approximately 12,000 train-motor vehicle collisions annually. By 2015, this number had dropped 83 percent to 2,059 collisions.

Metrolink also provides guidelines and resources for passengers on the Rail Safety page of the Metrolink website, including information about how to safely board and ride the train, wait at stations/platforms, and cross tracks. The website also includes tips on being alert for and speaking up about suspicious activities or other safety concerns and provides step-by-step instructions for emergency exits from trains.

Metrolink also regularly performs random inspections on all its tracks. Metrolink trains are brought to the Central Maintenance Facility for service every weekday. Maintenance personnel inspect trains for any damage that has the potential to interrupt service (Metrolink 2017).

### **Pedestrian/Bicycle Safety**

The California Office of Traffic Safety provides annual data on vehicle, pedestrian, and bicycle collisions within cities and counties throughout California. The most recent data available when this evaluation began was provided by the California Office of Traffic Safety for 2016 Collision Rankings. Table 3.11-10 shows the number of pedestrians and bicyclists killed and injured in accidents with vehicles throughout the jurisdictions within the RSA in 2016.

**Table 3.11-10 Pedestrian and Bicyclist Victims Killed or Injured within Resource Study Area Jurisdictions, 2016**

Jurisdiction	Pedestrians	Bicyclists
Los Angeles County	6,086	3,904
City of Burbank	3	0
City of Glendale	74	50
City of Los Angeles	3,487	1,980

Source: California Office of Traffic Safety, 2016

Los Angeles County had the highest death toll of pedestrians in the United States, with 278 killed in 2016 (National Highway Traffic Safety Administration 2016).

In 2015, California has the most pedestrian rail-trespass fatalities in the United States, with 88 fatalities statewide. In 2015, 17 pedestrian rail-trespass injuries and fatalities occurred within Los Angeles County (FRA 2016).

In January 2017, Mayor Eric Garcetti and the Los Angeles Department of Transportation 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 (City of Los Angeles 2017). 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 bicyclist safety (City of Los Angeles 2014).

In 2011, the City of Glendale adopted the *Safe & Healthy Streets Plan*, which provides policies to make the City of Glendale safer and friendlier for pedestrians and bicyclists (City of Glendale 2011). Regionally, the Southern California Association of Governments is working with health departments and transportation commissions from Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties to implement its *Go Human* campaign. The *Go Human*

campaign is an advertising campaign that promotes traffic safety and the development of resources and toolkits for cities and other organizations. It also supports events across the region that encourage walking and biking.

The jurisdictions shown in Table 3.11-11 are within the RSA and have adopted plans that promote bicycle safety.

**Table 3.11-11 Adopted Bicycle Master Plans within Resource Study Area Jurisdictions**

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

Caltrans = California Department of Transportation

There are seven at-grade crossings in the RSA. In the cities of Burbank, Glendale, and Los Angeles, intersections near the at-grade crossings are generally signalized or stop-controlled. Many of these intersections have marked crosswalks for safe pedestrian movement. Generally, sidewalks are available on both sides or on one side of the street and meet the standards of the Americans with Disabilities Act. Bikeway facilities exist on or are proposed for several streets with at-grade crossings throughout the RSA.

### Airports

There is one public-service airport and 19 heliports within the RSA (Table 3.11-12; Figure 3.11-1). None of the airports contain an international terminal. Airport master plans and airport land use compatibility plans from county airport land use commissions regulate land use within designated airport safety zones to minimize airport hazards and risk of accidents.

**Table 3.11-12 Airports and Heliports within the Resource Study Areas**

Facility	City	Address
Hollywood Burbank Airport/Heliport	Burbank	2627 N Hollywood Way Burbank, CA 91505
Providence Saint Joseph Medical Center Heliport	Burbank	501 S Buena Vista Street Burbank, CA 91505
NBC-TV Heliport	Burbank	3000 W Alameda Avenue Burbank, CA 91523
Bank of America Glendale Heliport	Glendale	133 W Doran Street Glendale, CA 91203
Glen Fed Heliport	Glendale	700 N Brand Boulevard Glendale, CA 91203
Dreamworks Helistop Glendale	Glendale	1000 Flower Street Glendale, CA 91201
Glendale Plaza Emergency Heliport	Glendale	655 N Central Avenue Glendale, CA 91203
ABC-TV Heliport	Los Angeles	4151 Prospect Avenue Los Angeles, CA 90027
Bank of America Data Center Heliport	Los Angeles	1000 W Temple Street Los Angeles, CA 90012

Facility	City	Address
Department of Water & Power Los Angeles Heliport	Los Angeles	111 Hope Street Los Angeles, CA 90012
Good Samaritan Hospital Heliport	Los Angeles	1225 Wilshire Boulevard Los Angeles, CA 90017
Jay Stephen Hooper Memorial Heliport	Los Angeles	555 Ramirez Street Los Angeles, CA 90012
Los Angeles City Hall Helipad	Los Angeles	200 N Spring Street Los Angeles, CA 90012
Los Angeles County Men's Detention Center—Main Jail Heliport	Los Angeles	450 Bauchet Street Los Angeles, CA 90012
Metropolitan Water District Heliport	Los Angeles	700 Alameda Street Los Angeles, CA 90012
Pacific Bell Heliport (no helipad visible on February 2017 aerial)	Los Angeles	W 5th Street/S Bixel Street Los Angeles, CA 90017
Sheriff's Headquarters—Temple and Grand Heliport (no helipad visible on February 2017 aerial)	Los Angeles	601 W Temple Street Los Angeles, CA 90012
Sunset-Glendale Airport	Los Angeles	1900 Sunset Boulevard Los Angeles, CA 90026
Terminal Annex	Los Angeles	900 Alameda Street Los Angeles, CA 90012

Source: California High-Speed Rail Authority, 2016b

Airport location is important to the safety and security analysis, with regard to potential accidents near the HSR system. One accident report has been issued by the National Transportation Safety Board for Hollywood Burbank Airport, which is located within the RSA. The accident occurred on March 5, 2000, when Southwest Airlines Flight 1455 (Boeing 737-300, N668SW) overran the runway while landing. The incident caused 44 injuries for people on the flight but zero fatalities.

### Schools

Chapter 3.12, Socioeconomics and Communities, identifies schools within a 0.5-mile radius from the centerline of the HSR Build Alternative. Burbank Unified School District, Glendale Unified School District, and Los Angeles Unified 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, earthquakes, and environmental/chemical threats. These plans also provide information regarding family reunification and communication during potential emergency situations. Schools in the direct RSA include:

- Benjamin Franklin Elementary, 1610 Lake Street, Glendale, CA 91201
- Providencia Elementary School, 1919 N Ontario Street, Burbank, CA 91505
- Alliance Environmental Science and Technology High School, 2930 Fletcher Drive, Los Angeles, CA 90065
- Monterey High School, 1915 W Monterey Avenue, Burbank, CA 91506
- Los Feliz Charter School for the Arts, 2709 Media Center Drive, Los Angeles, CA 90065
- Cathedral High School, 1253 Bishops Road, Los Angeles, CA 90012
- Burbank High School, 902 N 3rd Street, Burbank, CA 91502
- Aragon Avenue Elementary School, 1118 Aragon Avenue, Los Angeles, CA 90065
- Walt Disney Elementary School, 1220 W Orange Grove Avenue, Burbank, CA 91506

- Dorris Place Elementary School, 2225 Dorris Place, Los Angeles, CA 90031
- Glenfeliz Boulevard Elementary School, 3955 Glenfeliz Boulevard, Los Angeles, CA 90039
- Florence Nightingale Middle School, 3311 N Figueroa Street, Los Angeles, CA 90065
- Thomas Edison Elementary School, 435 S Pacific Avenue, Glendale, CA 91204
- Cerritos Elementary School, 120 E Cerritos Avenue, Glendale, CA 91205

The Cities of Burbank, Glendale, and Los Angeles have active Safe Routes to School National Partnerships that aim to empower communities to make walking and bicycling to school a safe and routine activity. All three cities pursue grant funding opportunities to fund bicycle and pedestrian infrastructure improvements to reduce injuries and fatalities to students traveling to and from school. These cities also seek funding and partnerships for complementary educational programs for students and parents to promote safety education and encourage increased walking and bicycling (City of Burbank 2010; City of Glendale 2016b; City of Los Angeles 2016).

### **Valley Fever**

Valley Fever (*coccidioidomycosis* or “cocci”)—a fungal infection caused by inhalation of fungal spores in airborne dust after soil disturbance—is a regional concern in Los Angeles County and, as such, is a concern under the HSR Build Alternative. The fungus that causes Valley Fever resides in the soil and thrives in the dry dirt and desert-like weather conditions. There were 5,372 cases of Valley Fever reported in California in 2016. The previous highest number of cases was in 2011 with 5,213 cases, which was the most since individual cases were made reportable in 1995 (California Department of Public Health 2017).

The Los Angeles County Department of Public Health also reported a similar trend for the county. In 2016, there were 714 cases across Los Angeles County, compared with 521 cases in 2015. Each year since 2009, more cases were reported than the year before, and the total has increased by nearly 400 percent. Overall, the rate of Valley Fever in Los Angeles County each year is about 8 cases per 100,000 people. While cases are reported throughout Los Angeles County, some areas of the county have been affected more than others: people who live in the Antelope Valley are almost nine times as likely to be diagnosed with Valley Fever as persons who live elsewhere in the county (Los Angeles County Department of Public Health 2017).

### **3.11.5.3 Natural Disasters**

#### **Dam Failure/Inundation/Flood Risk**

Chapter 3.8, Hydrology and Water Quality, identifies parts of the safety and security RSA that are subject to flooding and inundation. Within the RSA, there are floodplain zones at the Lockheed Channel (Zones AO and AE), the Burbank Western Channel (Zone A), and the Los Angeles River (Zone AE) that are subject to flooding and inundation. Zones A and AE have a 1 percent annual chance of flooding, and Zone AO has a 1 percent or greater annual chance of shallow flooding. Therefore, these zones in the RSA are considered high-risk flood zones.

#### **Geotechnical Hazards**

Chapter 3.9, Geology, Soils, Seismicity, and Paleontological Resources, discusses the risk of earthquakes, subsidence, fault rupture, and other geotechnical hazards within the safety and security RSA. In general, Southern California is subject to strong periodic seismic ground shaking. Additionally, a number of fault zones are located within the RSA, including the Verdugo Fault Zone and the Hollywood-Raymond Fault Zone.

#### **High Winds**

According to FEMA’s Wind Zones in the United States Map, the RSA is within Zone 1 for maximum wind speeds (130 mph) (FEMA 2016). The RSA is subject to high winds, generally in the autumn when the dry Santa Ana winds flow out of the Great Basin into the Central Valley, the Southeastern Desert Basin, and the South Coast Air Basin. These winds are strong and gusty,

and may exceed 100 mph, but they rarely reach 75 mph. These Santa Ana or “devil” winds can contribute to brush fires and other localized minor damage (City of Los Angeles 1996a).

### Wildfires

Fire hazard models measure the likelihood of an area to burn and how it would burn (e.g., intensity, speed, embers produced), and they allow people to predict a fire’s likely damage. According to the California Department of Forestry and Fire Protection (CAL FIRE), fire hazard measurement includes the speed at which wildfire move, the amount of heat the fire produces, and the burning firebrands (i.e., any burning wood that can start a fire) that the fire sends ahead of the flaming front. This information is identified as part of fire-hazard zoning performed by CAL FIRE (CAL FIRE 2012a). The *Strategic Fire Plan for California* (CAL FIRE 2012b) provides guidance for reducing the risk of wildfire and for dealing with wildfires and their aftermath when they occur. This plan identifies and assesses communities at risk of wildfire damage on a scale of Very High, High, and Moderate. Additionally, CAL FIRE prepares county-specific Unit Strategic Plans for Los Angeles County (CAL FIRE 2014) Fire Departments (Los Angeles County 2014b). The CAL FIRE Local Responsibility Area map published for Los Angeles County in 2012 shows that the RSA includes areas designated as very high fire hazard severity zones. The HSR Build Alternative would include 13.47 acres of very high fire hazard severity zones and 654.54 acres of other, less severe severity zones (CAL FIRE 2012c).

#### 3.11.5.4 Built Environment Hazards

##### Critical Infrastructure

Chapter 3.6, Public Utilities and Energy, discusses the utilities and service providers in the safety and security RSA, as well the critical infrastructure associated with these utilities, including electricity, natural gas, petroleum and fuel pipelines, communications (telephone and cable/internet), water supply, sewer/wastewater, and solid waste collection. These utility service providers and their associated critical infrastructure serve the RSA on a daily operational basis and during emergencies.

##### Government Buildings

Table 3.11-13 and Figure 3.11-1 include facilities that have been identified as important government buildings within the RSA.

**Table 3.11-13 Government Buildings within the Resource Study Area**

Facility	Location
City of Burbank Public Library—Northwest Branch Library	3323 W Victory Boulevard Burbank, CA 91505
City of Burbank Public Library—Burbank Central Library	110 N Glenoaks Boulevard Burbank, CA 91502
Burbank Main Post Office	2140 N Hollywood Way Burbank, CA 91505
Burbank Chamber of Commerce	200 W Magnolia Boulevard Burbank, CA 91502
City of Burbank	275 E Olive Avenue Burbank, CA 91502
Superior Court—North Central District—Burbank/District Attorney’s Field Office	300 E Olive Avenue Burbank, CA 91502
Grand Central Station Glendale Post Office	6444 San Fernando Road Glendale, CA 91201
Glendale Public Library—Pacific Park Branch Library	501 N Pacific Avenue Glendale, CA 91204

Facility	Location
Tropico Station Glendale Post Office	120 E Chevy Chase Drive Glendale, CA 91205
Federal Post Office	300 N Los Angeles Street Los Angeles, CA 90012
Griffith Station Post Office	3370 Glendale Boulevard Los Angeles, CA 90039
Terminal Annex Post Office	900 N Alameda Street Los Angeles, CA 90012
Alameda Carrier Annex U.S. Postal Service Facility	760 N Main Street Los Angeles, CA 90012
Los Angeles County Sheriff's Department—Twin Towers Correctional Facility/ Inmate Reception Center	450 Bauchet Street Los Angeles, CA 90012
Los Angeles County Men's Detention Center—Main Jail	441 Bauchet Street Los Angeles, CA 90012
Los Angeles Public Library—Chinatown Branch	639 N Hill Street Los Angeles, CA 90012
Los Angeles Public Library—Atwater Village Branch	3379 Glendale Boulevard Los Angeles, CA 90039
Los Angeles Public Library—Cypress Park Branch	1150 Cypress Avenue Los Angeles, CA 90065
Metro—Information Center	1 Gateway Plaza Drive Los Angeles, CA 90012
Chinese Chamber of Commerce of Los Angeles	977 N Broadway Los Angeles, CA 90012
Central Arraignment Court	429 Bauchet Street Los Angeles, CA 90012
United States District Court—Central District of California—Western Division	312 N Spring Street Los Angeles, CA 90012
Los Angeles County Superior Court—Central District—Clara Shortridge Foltz Criminal Justice Center	210 W Temple Street Los Angeles, CA 90012
Los Angeles County Superior Court—Central District—Mental Health Courthouse	1150 N San Fernando Road Los Angeles, CA 90012
Los Angeles County Superior Court - Central District - Central Arraignment	429 Bauchet Street Los Angeles, CA 90012
Los Angeles County District Attorney—Administration	210 W Temple Street Los Angeles, CA 90012
Los Angeles Unified School District Central Office—Yale Street Annex	936 Yale Street Los Angeles, CA 90012
Los Angeles Unified School District—Maintenance and Operations District 4 Satellite	3225 Lacy Street Los Angeles, CA 90031
Los Angeles Unified School District—Transportation Branch Office	2710 Media Center Drive Los Angeles, CA 90065

Source: California High-Speed Rail Authority, 2016b

Metro = Los Angeles County Metropolitan Transportation Authority

## High-Risk Facilities and Fall Hazards

High-risk facilities (e.g., refineries, chemical plants, and oil wells/fields) and fall hazards (e.g., industrial facilities with tall structures such as silos, distillation columns) could pose threats to the operation of the HSR Build Alternative in the event of a disaster at those facilities. No fall hazards were identified and the only high-risk facilities included several oil wells predominantly located near the southern portion of the HSR Build Alternative. The majority of these wells are plugged and abandoned (California Department of Conservation, Division of Oil, Gas, and Geothermal Resources 2016).

## Landfills and Waste Disposal Sites

Section 3.10, Hazardous Materials and Wastes, provides a discussion of landfills within the project footprint plus a 0.25-mile buffer of the project footprint that have the potential to release methane gas, which may present an explosion risk, consistent with California Code of Regulations (Cal. Code Regs.) Title 27, Division 2, Chapter 3, Subchapter 4, Gas Monitoring and Control at Active and Closed Disposal Sites. Table 3.11-14 lists the landfills and waste disposal sites identified within the project footprint plus a 0.25-mile buffer of the project footprint. While landfills and waste disposal sites pose a potential explosion risk due to methane gas release, the sites identified in Table 3.11-14 have a low potential for gas release. More detail can be found in Table 5-1 of the *Burbank to Los Angeles Project Section: Hazardous Materials and Wastes Technical Report* (Authority 2016c).

**Table 3.11-14 Landfills and Waste Disposal Sites within 0.25 Mile of the Project Footprint**

Name	Address	Status	Potential for Landfill Gas Release
Kelly Avenue Dump	630 Kellogg Avenue, Glendale	Closed	Low
American Reclamation Chipping and Grinding	4560 Doran Street, Los Angeles	Active	Low
E.L. Flemming Dump	5431 San Fernando Road, Los Angeles	Closed	Low
San Fernando & Brazil Landfill	3950 W Colorado Boulevard, Los Angeles	Closed	Low
Silverlake Street Maintenance District Yard	4610 Colorado Boulevard, Los Angeles	Active	Low
City of Glendale Corporation Yard	541 Chevy Chase Drive, Glendale	Active	Low
City of Glendale Materials Recovery Facility and Transfer Station	540 Chevy Chase Drive, Glendale	Active	Low
Brand Park Landfill	1601 W Mountain Street, Glendale	Closed	Low
San Fernando Maintenance District Yard	11370 San Fernando Road	Active	Low
East Street Maintenance District Yard	452 San Fernando Road, Los Angeles	Active	Low
Avenue 26 and Figueroa Solid Waste Disposal	400 Avenue 26, Los Angeles	Closed	Low

Source: California High-Speed Rail Authority, 2016



### 3.11.6 Environmental Consequences

This section describes the environmental consequences and impacts related to safety and security associated with construction and operation of the HSR Build Alternative. Proposed mitigation measures to address these impacts are discussed in Section 3.11.7, Mitigation Measures.

#### 3.11.6.1 Overview

This section evaluates how the No Project Alternative and the HSR Build Alternative could affect safety and security resources, including those related to transportation; hydrology and water resources; geology, soils, and seismicity; and hazardous materials and waste as they directly contribute to the impacts analysis of safety and security resources. The impacts of the HSR Build Alternative are described and organized as follows:

- **Construction Impacts**
  - Impact S&S #1: Accidents and Health Risks at Construction Sites
  - Impact S&S #2: Accidents Associated with Construction-Related Detours
  - Impact S&S #3: Increased Response Times for Fire, Rescue, and Emergency Services from Temporary Road Closures
  - Impact S&S #4: Crime at Construction Sites
- **Operations Impacts**
  - Impact S&S #5: Train Accidents
  - Impact S&S #6: Motor Vehicle, Pedestrian, and Bicycle Accidents Associated with High-Speed Rail Operations
  - Impact S&S #7: High-Speed Rail Accidents Associated with Seismic Events
  - Impact S&S #8: Risk of Fire and Secondary Effects from Fire
  - Impact S&S #9: Increased Response Times for Fire, Rescue, and Emergency Services from Permanent Road Closures
  - Impact S&S #10: Increased Response Times for Fire, Rescue, and Emergency Services Associated with Access to Elevated Track and Tunnels
  - Impact S&S #11: Need for Expansion of Existing Fire, Rescue, and Emergency Services Facilities
  - Impact S&S #12: Accident Risks to Airports, Private Airstrips, and Heliports
  - Impact S&S #13: Hazards to the High-Speed Rail from Nearby Facilities
  - Impact S&S #14: Hazards to Residences from High-Speed Rail Derailment
  - Impact S&S #15: Safety Impacts on Schools
  - Impact S&S #16: Hazards to High-Speed Rail Passengers and Employees from Extreme Weather Conditions
  - Impact S&S #17: Hazards to High-Speed Rail Passengers and Employees from Winds
  - Impact S&S #18: Criminal Activity and Emergencies Aboard Trains and at Stations, Right-of-Way, and Facilities

### **3.11.6.2 No Project Alternative**

Under the No Project Alternative, recent development trends within the Burbank to Los Angeles Project Section would continue, resulting in no major changes to ongoing safety and security conditions. 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 (Section 3.2, Transportation and Section 3.19, Cumulative Impacts). It is anticipated that under the No Project Alternative, safety and security in the RSA would follow current trends. Increased vehicular traffic volumes over the next 20 years would result in increased traffic accidents and associated injuries and fatalities. However, planned roadway capacity expansions would improve operations. These programmed roadway projects would incorporate design features that would reduce, but would not completely avoid, the potential for automobile and truck accidents. Counties and cities have the financial mechanisms in place to meet service level goals for emergency responders with the population growth planned for the RSA. For these reasons, no major changes to accident prevention or emergency response are anticipated. Crime rates depend in part on economic conditions. Planned development and transportation projects that would occur as part of the No Project Alternative would likely include various forms of mitigation identified in separate environmental impact studies to address impacts on safety and security.

#### **Safety**

Existing and ongoing safety conditions related to motor vehicles, pedestrians, and bicyclists would not change under the No Project Alternative. Emergency responders would continue to experience delays throughout the RSA at seven at-grade crossings when freight and conventional passenger trains block crossings. The demand for law enforcement, fire, and emergency services would change commensurate with anticipated population growth and implementation of the development projects listed in Section 3.19, Cumulative Impacts.

#### **Security**

Under the No Project Alternative, existing emergency response plans and procedures would not be affected. Emergency responders and evacuees would continue to experience delays at numerous at-grade crossings when freight and conventional passenger trains block crossings. Conditions related to airports, critical facilities, and high-risk facilities in the RSA would not change because of planned future projects.

### **3.11.6.3 High-Speed Rail Build Alternative**

Construction and operation of the HSR Build Alternative could result in temporary and permanent impacts on safety and security resources. Impacts could potentially include temporary changes in transportation routes during construction due to detours and temporary road closures, and during operation due to grade separations and permanent road closures.

#### **Construction Impacts**

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

#### **Impact S&S #1: Accidents and Health Risks at Construction Sites**

Construction activities associated with the HSR Build Alternative would require excavation, construction of guideways, and installation of electrical systems. These construction sites would involve heavy equipment on-site, earthwork, and other major construction activities, including the transportation of overweight and oversized materials (construction activities are described in Chapter 2, Alternatives). Throughout construction of the HSR Build Alternative, workers could be exposed to hazards associated with construction sites, including those related to operation of heavy equipment and activities. This potential exposure to worksite hazards would be a

temporary and direct impact on the public and workers during construction. Refer to Section 3.10 for an analysis of the potential health and safety risks to the public and workers from exposure to hazardous materials and wastes generated during construction.

All applicable codes and regulations must be followed by employees engaged in construction activities. These include, but are not limited to, the following:

- Cal. Code Regs. Title 8, Construction Safety Orders
- FRA regulations (49 C.F.R. 214, 49 C.F.R. 219, 49 C.F.R. 225, 49 C.F.R. 228, and 29 C.F.R. 236) related to railroad construction worker safety
- CPUC General Orders
- Other applicable federal and California Occupational Safety and Health Administration (OSHA and Cal-OSHA, respectively) regulations

Cal. Code Regs. Title 8, overseen by Cal-OSHA, regulates workplace and construction work site safety throughout California. Title 8 requires compliance with standard procedures to prevent construction work site accidents and requires a written workplace Injury and Illness Prevention Program to be in place (Cal. Code Regs. Title 8, Section 1502 et seq.; *Pocket Guide for the Construction Industry* [Cal-OSHA 2013a]; *Users' Guide to Cal-OSHA* [Cal-OSHA 2015]). Standard implementation of a construction safety and health plan during construction, in compliance with legal requirements, would reduce risk to human health during construction by establishing protocols for safe construction, including daily safety awareness meetings and training to establish a safety culture among the workforce.

The RSA is in areas that often experience high temperatures, especially during the summer months. Implementation of the Cal-OSHA Heat Illness Prevention Standard (Cal. Code Regs. Title 8, Subchapter 7, Group 2, Article 10, Section 3395, et seq. [Cal-OSHA 2015]) would reduce the likelihood of incidents resulting from heat illness. The Cal-OSHA Heat Illness Prevention Standard requires measures such as providing access to shade, implementing emergency response and high-heat procedures, acclimation, training, and implementation of a Heat Illness Prevention Plan.

As discussed in Section 3.11.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. SS-IAMF#2 would require the contractor to develop an SSMP, a Site-Specific Health and Safety Plan, and a Site-Specific Security Plan that identify the local conditions and requirements unique to the construction site and work to be performed. These documents would include system safety plans, rail safety standards, worker safety standards, crime prevention design guidelines, safety and health plans, fire/life safety programs, security plans, and emergency procedures that would be followed to maintain the safety and security of all construction workers, employees, and the public. Additionally, memoranda would be prepared in accordance with applicable codes and regulations, such as those listed above. Contractors would be responsible for ensuring the compliance of their employees and subcontractors with their SSMP, Site-Specific Health and Safety Plan, and Site-Specific Security Plan.

#### **Valley Fever**

Construction activities associated with the HSR Build Alternative would require temporary disruption of soil that could lead to exposure to airborne transmission of the fungus that causes Valley Fever.

Inhaling airborne dust that contains the fungus would pose a threat to the health of construction workers and the public. People who contract the fungal infection develop flu-like symptoms, including fever, chest pain, muscle or joint aches, and coughing. This would be a temporary direct impact during the construction phase of the HSR Build Alternative. Ground disturbance during construction would occur under the HSR Build Alternative. Because the location of the fungus that causes Valley Fever is not known and any amount of disruption in the soil could release the fungus, there is a potential to spread Valley Fever during construction of the HSR Build Alternative.

To prevent the spread of Valley Fever from construction, the Authority has incorporated measures to control fugitive dust emissions by covering vehicles transported on public roads, washing trucks and equipment, watering exposed surfaces and unpaved roads, limiting vehicle travel speed, suspending dust-generating activities, stabilizing disturbed areas and on- and off-site unpaved roads, watering or presoaking disturbed lands, washing exterior surfaces of buildings during demolition, and removing the accumulation of mud or dirt from public streets. These measures would be included in a fugitive dust control plan prepared by the contractor for each distinct construction segment to describe how each measure is employed and to identify an individual responsible for incorporation of these measures (AQ-IAMF#1). Detailed information on air quality and fugitive dust is included in Section 3.3, Air Quality and Global Climate Change.

The HSR Build Alternative incorporates IAMFs that require the contractor to prepare and apply an action plan. The action plan would include information on causes, preventive measures, symptoms, and treatments for Valley Fever; outreach and coordination with the California Department of Public Health; coordination with county departments to make information on Valley Fever readily available to residents, schools, and businesses; and dedication of a qualified person who would oversee incorporation of the Valley Fever prevention measures (SS-IAMF#2). A Valley Fever health and safety designee would coordinate with the county public health officer to determine what measures would be required as part of the SSMP (SS-IAMF#2) to avoid Valley Fever exposure. The designee would manage implementation of the Valley Fever control measures, which would include, but 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. Therefore, incorporation of IAMFs would be effective in avoiding increasing the exposure risk of the public or construction workers to Valley Fever during construction of the HSR Build Alternative.

#### **Oil and Gas Wells**

As discussed in Section 3.10, Hazardous Materials and Wastes, there are no gas wells within the project footprint plus a 0.25-mile buffer of the project footprint. Several oil wells exist within the project footprint plus a 0.25-mile buffer of the project footprint, with the majority located in the southern area. Most of these wells are plugged and abandoned. The HSR Build Alternative does not propose to construct any oil or gas wells; however, if any unidentified wells are encountered during construction, they would be demolished or abandoned and possibly relocated according to city regulations, county regulations, and California Division of Oil, Gas, and Geothermal Resources (DOGGR) standards.

Cal. Code Regs. Title 14, Chapter 4, Article 2, Section 1720, states that any oil or gas well within 100 feet of a regularly used operating railway is deemed a critical well. Critical wells require more stringent safety measures than noncritical wells; these measures are listed in Cal. Code Regs. Title 14, Section 1724.3.

Active, plugged and abandoned, or unrecorded, oil or gas wells, and ancillary equipment and piping may be encountered during construction. SS-IAMF#4 would require identification and inspection of all active and abandoned oil and gas wells within 200 feet of the HSR tracks, prior to ground-disturbing activities. Any active wells would be abandoned and relocated by the contractor in accordance with the DOGGR standards and in coordination with the well owners.

Additionally, if a plugged and abandoned, or unrecorded, well is encountered during construction of the HSR Build Alternative, the Authority would conduct remedial plugging operations and equipment removal or in-place abandonment in accordance with the standards stated in Cal. Code Regs. Title 14, Section 1723, and in consultation with the owner and the DOGGR.

#### **Landfills**

As discussed in Section 3.10, Hazardous Materials and Wastes, landfills within the project footprint plus a 0.25-mile buffer of the project footprint were identified and analyzed for their potential to release methane gas, which may present an explosion risk during construction and a danger to construction workers. There are six active and five inactive landfills within the project

footprint plus a 0.25-mile buffer of the project footprint. These landfills pose a low potential for landfill gas release (California Department of Conservation, Division of Oil, Gas, and Geothermal Resources 2016). HMW-IAMF#2 would require that before construction (i.e., any ground-disturbing activities), the contractor would need to prove to the Authority through preparation of a technical memorandum that methane protection measures would be implemented for all work within 1,000 feet of a landfill, including the inclusion of gas detection systems into the HSR Build Alternative and personnel training. This would be undertaken pursuant to Cal. Code Regs. Title 27, Environmental Protection – Division 2, Solid Waste, and the Hazardous Materials Best Management Practices Plan.

#### **Wildfire**

In the event of a wildfire in an area near construction, guidance contained within the SSMP, a Site-Specific Health and Safety Plan, and a Site-Specific Security Plan would be adhered to by the construction contractor. Exposure to pollutant concentrations from wildfires or uncontrolled spread of wildfire would be covered in these plans. The project would not substantially impair any adopted emergency response plans or emergency evacuation plans. The project would also not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment related to wildfires. Implementation of IAMFs would prevent the exposure of people or structures to substantial post-wildfire risks, such as downslope or downstream flooding or landslides.

#### **Airport**

A portion of the HSR Build Alternative crosses under Runway 8-26, Taxiway D, the proposed extension of Taxiway C, and critical airport safety zones at the Hollywood Burbank Airport. This section of the HSR alignment would be constructed by utilizing the sequential excavation method (SEM), working under the runway and taxiway systems to avoid any airport operation impacts. The runway and taxiway systems are expected to remain fully operational during construction because the SEM minimizes surface disruption, which would be limited to the tunnel entry and exit points, located outside of the critical airport safety zones. For the portion of the alignment south of Runway 8-26, the proposed method of tunnel construction would be cut-and-cover. This includes portions of the alignment that run through airport property (but not under the runways/taxiways) and would entail surface disruption during the construction process on airport property. Refer to Section 2.9.5.3, Tunnel Construction/Hollywood Burbank Airport Construction for details on tunnel construction at and near the airport. The construction contractor would be required to implement any relevant State and federal regulations and standards regulating the construction of underground tunnels to address the potential for construction workers to be exposed to safety concerns due to the reduced light conditions, potentially difficult or limited access and egress, and the potential for exposure to air contaminants and the hazards associated with underground tunnel construction. OSHA has prepared a number of guidance documents including the underground construction (tunneling) regulations found in Part 1926, Section 800 of Title 29 of the Code of Federal Regulations (29 CFR 1926.800), which outlines training requirements, communication requirements of hazardous conditions, site control procedures, ventilation requirements, illumination requirements, special air monitoring requirements, emergency procedures, and record keeping requirements that would be implemented for the HSR Build Alternative. Additionally SS-IAMF#2, which requires the contractor to develop an SSMP, a Site-Specific Health and Safety Plan, and a Site-Specific Security Plan that identify the local conditions and requirements unique to the construction site and work to be performed, would be implemented.

Tall structures, especially when aggregated, may interfere with terrestrial-based communications, navigation, and surveillance and weather equipment due to frequency interference, scattering of radar beams, or attenuation of radar returns. The HSR Build Alternative would not require the construction of objects taller than 100 feet within 2 miles of the Hollywood Burbank Airport or within the airport land use compatibility plan area for the Hollywood Burbank Airport. Approval of the use of tall construction equipment (e.g., cranes and drill rigs) affecting National Airspace System (NAS) would require flagging and lighting in accordance with FAA regulations.

To address the potential for disruption of airfield and airspace operations at the Hollywood Burbank Airport as a result of construction of the HSR Build Alternative, the HSR Build Alternative incorporates SS-IAMF#5, which requires the Authority and/or the construction contractor(s) to submit construction plans and/or information to the FAA as required by the Code of Federal Regulations, Title 14, Part 77, which may include the location of planned HSR construction and construction staging areas within and adjacent to the boundary of the Hollywood Burbank Airport, the types and height of proposed equipment, and planned time/duration of construction, to ensure construction within and adjacent to the boundary of Hollywood Burbank Airport does not intrude into imaginary surfaces as defined in 14 C.F.R. section 77.9(b). Additionally, SS-IAMF#5 requires the implementation of measures required by the FAA to ensure continued safety of air navigation during HSR construction pursuant to 14 C.F.R. section 77.5(c).

Notice of proposed construction or alteration (FAA form 7460-1) has been filed with the FAA and would be filed again prior to construction at the Hollywood Burbank Airport. 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 refiling a notice for this construction closer to the start of construction.

The Authority would continue coordination with the FAA to ensure all necessary approvals are obtained. Incorporation of SS-IAMF#2 and SS-IAMF#5, adherence to relevant State and federal regulations related to tunnel construction, and continued coordination with the FAA would be effective in avoiding increasing the exposure risk of the public or construction workers to hazards related to SEM tunnel construction under Runway 8-26 and taxiways at the Hollywood Burbank Airport.

#### **CEQA Conclusion**

The impacts of hazards related to Valley Fever, oil wells, landfills, and SEM tunnel construction under Runway 8-26 and taxiways at the Hollywood Burbank Airport that would occur during construction of the HSR Build Alternative would be less than significant because SS-IAMF#2, SS-IAMF#5, AQ-IAMF#1, and HMW-IAMF#2 would require safety measures during construction to prevent effects on these hazards.

Compliance with Cal. Code Regs. Title 8, FRA regulations (49 C.F.R. 214, 49 C.F.R. 219, 49 C.F.R. 225, 49 C.F.R. 228, and 29 C.F.R. 236), CPUC General Orders; OSHA and Cal-OSHA regulations; Cal. Code Regs. Title 14; and Part 1926, section 800 of Title 29 of the Code of Federal Regulations (29 CFR 1926.800) during construction of the HSR Build Alternative would reduce these hazards. SS-IAMF#2 would require the contractor to develop an SSMP, a Valley Fever action plan, a Site-Specific Health and Safety Plan, and a Site-Specific Security Plan that identify the local conditions and requirements unique to the construction site and work to be performed. AQ-IAMF#1 would also require construction work area fugitive emissions control plans to be developed prior to construction. Additionally, HMW-IAMF#2 would require that prior to construction (i.e., any ground-disturbing activities), the contractor would need to prove to the Authority through preparation of a technical memorandum that methane protection measures would be implemented for all work within 1,000 feet of a landfill. The construction of the HSR Build Alternative would create a less than significant hazard to the public and the environment through the routine transport, use, or disposal of hazardous materials. In addition, safety plans developed for the HSR Build Alternative would provide protection in the event of wildfires. Therefore, CEQA does not require mitigation for impacts of hazards related to Valley Fever, oil wells, landfills, wildfires, or SEM tunnel construction under Runway 8-26 and taxiways at the Hollywood Burbank Airport.

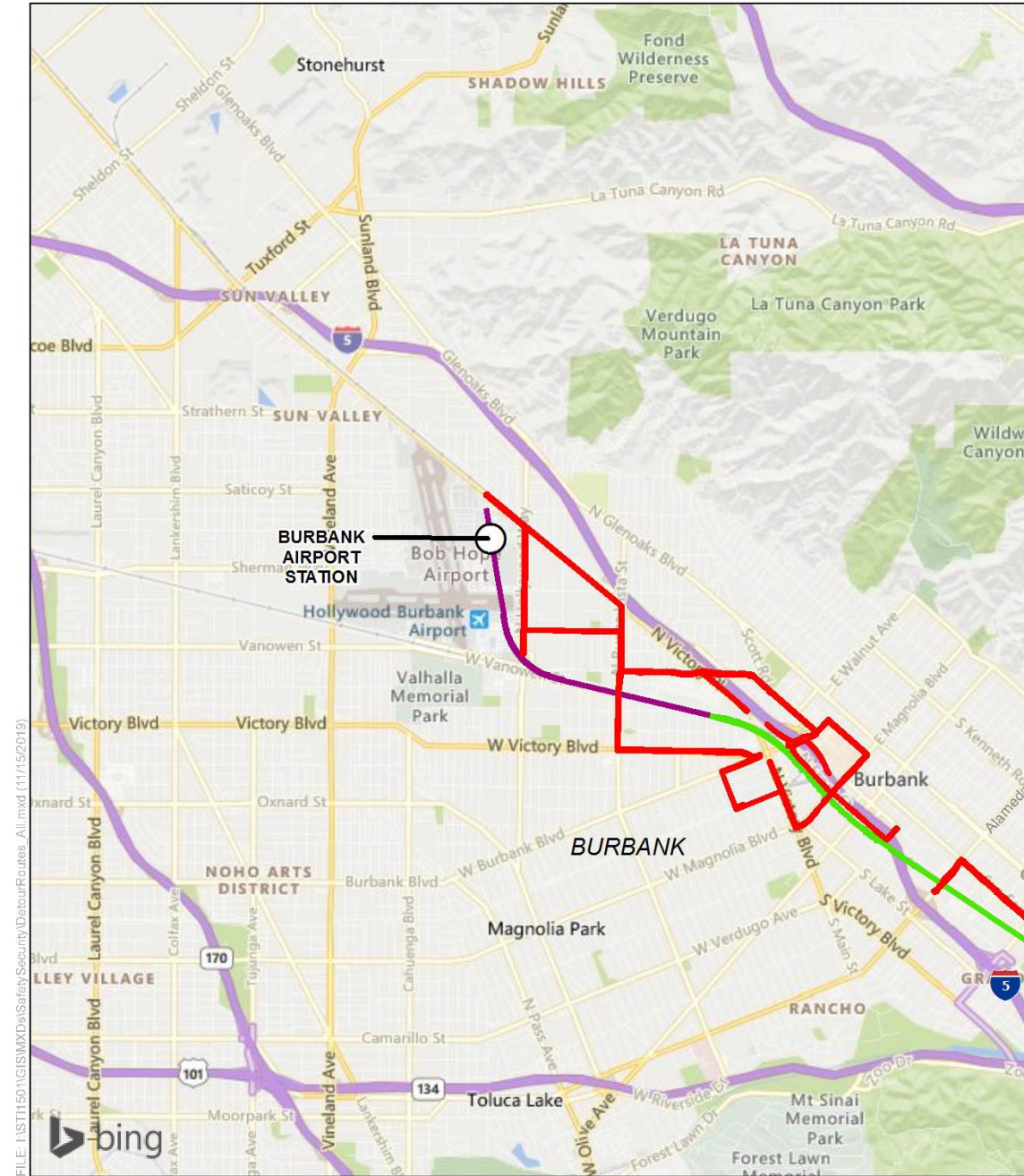
### **Impact S&S #2: Accidents Associated with Construction-Related Detours**

Construction of the HSR Build Alternative would require roadway closures and detours. Temporary construction-related detours are shown on Figure 3.11-3 and described in more detail below. As discussed in Chapter 2, Alternatives, two roads would be closed where they cross the HSR Build Alternative alignment, while all other existing at-grade crossings would be grade-separated, typically as an undercrossing. The road crossings would be built at the same locations as the existing roads. Some of these road modifications could occur as early action projects including the following grade separations: Sonora Avenue, Grandview Avenue, Flower Street, Goodwin Avenue/Chevy Chase Drive, and Main Street. Construction of these grade separations would likely result in the largest roadway impacts. These roads would have to be closed and traffic would have to be detoured onto other roads during construction of the grade separations, and the closures would typically last at least 14 months. At these sites, lane closures and detours related to the HSR Build Alternative could create a distraction to automobile drivers, pedestrians, and cyclists. Distraction and unfamiliarity with detours could lead to accidents. In addition, these road closures, detours, and localized automobile congestion could increase the response time for law enforcement, fire, and emergency services personnel and school buses; these impacts are discussed in further detail under Impact S&S #3. Emergency evacuation times could also increase because of road closures, detours, and congestion. Evacuation routes located in the RSA are provided in Section 3.11.5, Affected Environment (Table 3.11-8). Evacuation routes that could be affected by construction of the HSR Build Alternative include San Fernando Road, Burbank Boulevard, and Victory Boulevard within the city of Burbank and San Fernando Road, Sonora Avenue, Grandview Avenue, and Colorado Street within the city of Glendale.

As discussed in Section 3.11.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts related to construction-related detours, including distractions, pedestrian and vehicle conflicts, and congestion. SS-IAMF#1 would require that the contractor develop a detailed Construction Safety Transportation Management Plan that would require coordination with local jurisdictions on emergency vehicle access. This plan would also include a traffic control plan that establishes procedures for 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. Additionally, TR-IAMF#4 and TR-IAMF#5 would require the contractor to prepare specific construction management plans to address the maintenance of pedestrian and bicycle access during the construction period where feasible (i.e., meeting design, safety, and Americans with Disabilities Act requirements). If sidewalks are maintained along the HSR Build Alternative construction site frontage, there would be covered walkways and fencing.

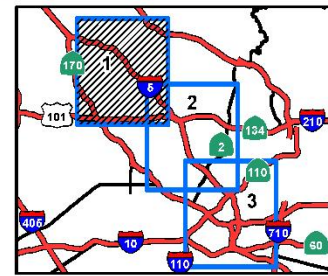
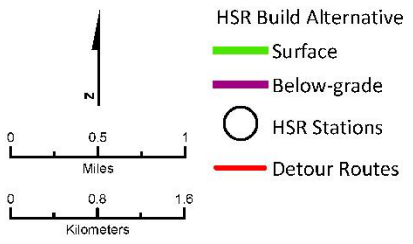
Construction of grade separations would occur in a manner that would allow roads adjacent to the north and south or the east and west of a road temporarily closed for construction to accommodate detoured traffic. This would typically result in 1 to 2 miles of out-of-direction travel during temporary road closures. Temporary construction-related roadway changes and detours would occur at the following 34 locations:

- **City of Burbank**
  - Hollywood Way: One lane would be maintained in each direction.
  - Thornton Avenue: May experience increased traffic due to potential closures at Buena Vista and Hollywood Way.
  - Empire Avenue: May experience increased traffic due to closure at Burbank Boulevard.
  - San Fernando Boulevard: May experience increased traffic due to potential closures at Victory Place and Burbank Boulevard.
  - Victory Boulevard: May experience increased traffic due to closure at Burbank Boulevard.
  - Griffith Park Drive: May experience increased traffic due to closure at Burbank Boulevard.
  - Mariposa Street: May experience increased traffic due to closure at Burbank Boulevard.



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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED  
 SOURCE: Bing (2018); CHSRA (11/2019)



**Figure 3.11-3 Construction Detours**  
 (Sheet 1 of 3)



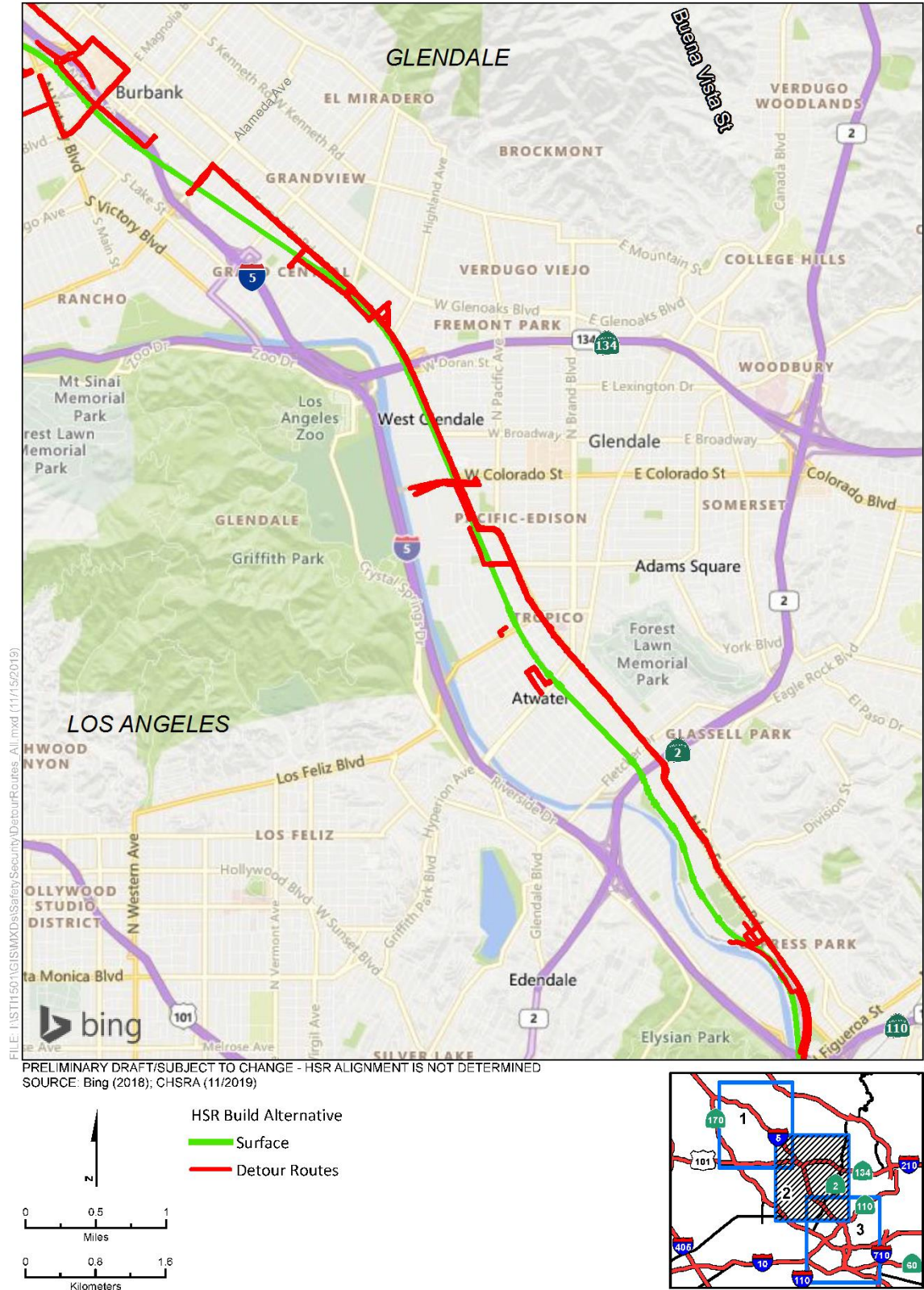
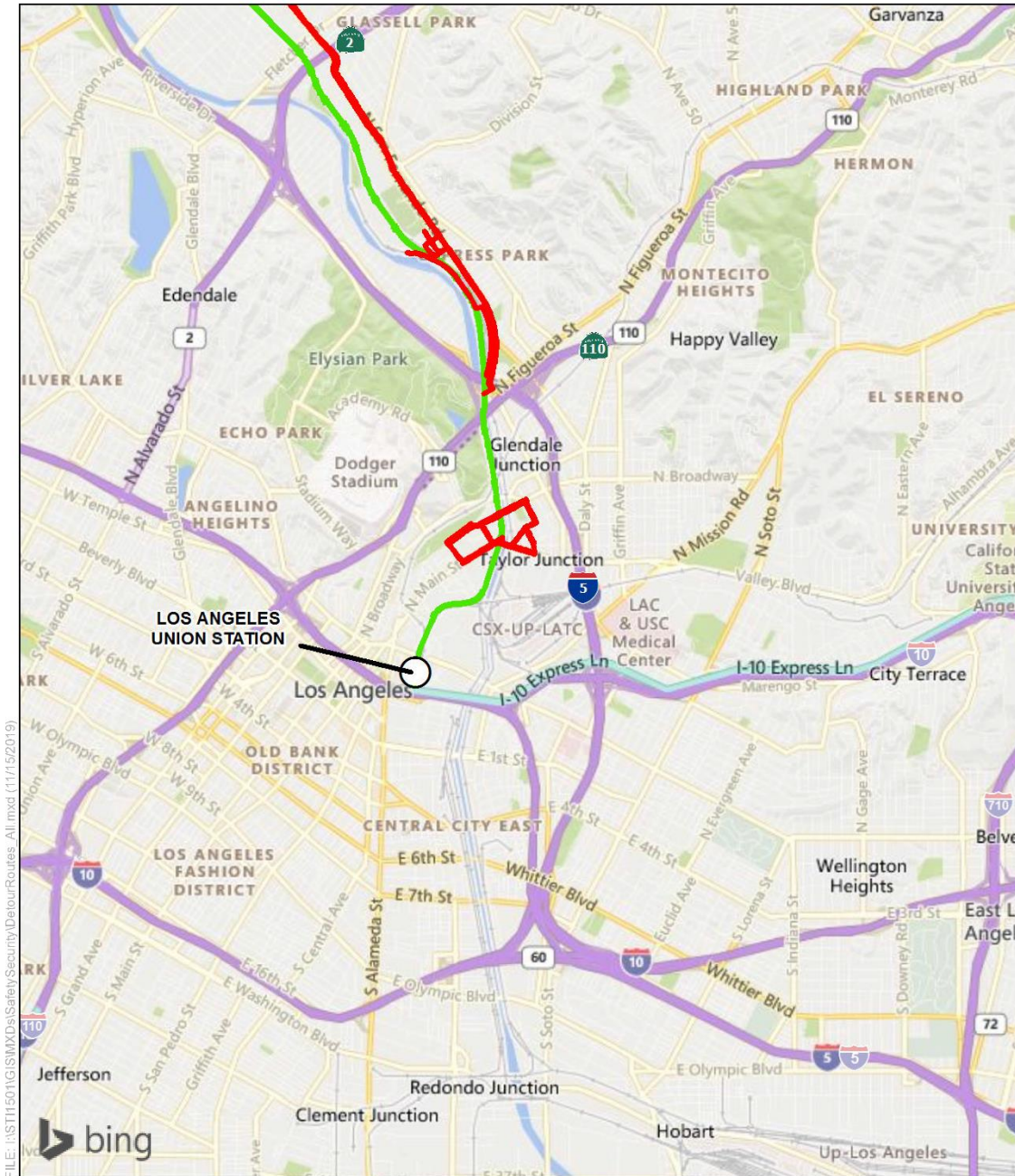
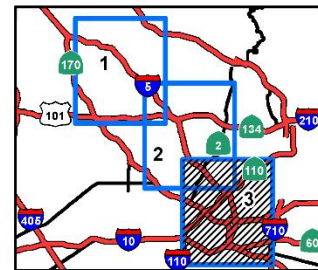
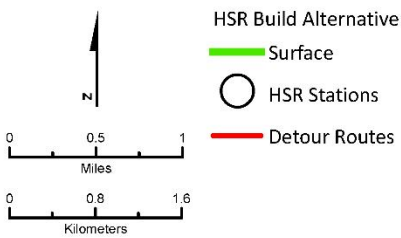


Figure 3.11-3 Construction Detours  
(Sheet 2 of 3)



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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED  
SOURCE: Bing (2018); CHSRA (11/2019)



**Figure 3.11-3 Construction Detours**  
(Sheet 3 of 3)

- Third Street: May experience increased traffic due to closure at Burbank Boulevard.
  - Magnolia Boulevard: May experience increased traffic due to closure at Burbank Boulevard.
  - Front Street: May experience increased traffic due to closure at Burbank Boulevard.
  - Verdugo Avenue: May experience increased traffic due to closure at Burbank Boulevard.
  - Hollywood Boulevard: A northbound/southbound traffic detour may be required for construction of the single-track UPRR bridge and new median/street improvements. One lane would be maintained in each direction.
  - Buena Vista Avenue: A northbound/southbound traffic detour may be required for construction of an at-grade crossing and related safety improvements to support a new double-track shoofly. One lane would be maintained in each direction.
  - Victory Place/Lake Boulevard: A northbound/southbound closure may be required for construction of a double-track HSR bridge and related street improvements. May be able to maintain one lane in each direction.
  - Burbank Boulevard: An eastbound/westbound closure would be required for construction of a new highway bridge overcrossing.
  - Alameda Avenue: An eastbound/westbound traffic detour may be required for construction of two double-track bridges (HSR and SCRRA) and new median/street improvements. May be able to maintain one lane in each direction.
- **City of Glendale**
    - Colorado Street Freeway Extension: One lane would be maintained in each direction.
    - Sonora Avenue: An eastbound/westbound traffic detour may be required for construction of two double-track bridges (HSR and SCRRA), new median/street improvements, and a grade separation. May be able to maintain one lane in each direction.
    - Grandview Avenue: An eastbound/westbound traffic detour may be required for construction of two double-track bridges (HSR and SCRRA), new median/street improvements, and a grade separation. May be able to maintain one lane in each direction.
    - Flower Street/San Fernando Road: A northbound and southbound traffic detour may be required for construction of two double-track bridges (HSR and SCRRA), new median/street improvements, and grade separation. May be able to maintain one lane in each direction.
    - San Fernando Road: A southbound traffic detour would be required for oil and fiber relocation and construction of track bridge (HSR and SCRRA) across Verdugo Wash.
    - Colorado Street: An eastbound/westbound traffic detour may be required for construction of two double-track bridges (HSR and SCRRA) and new median/street improvements. May be able to maintain one lane in each direction.
    - Goodwin Avenue: No current crossing exists at Goodwin Avenue. Traffic impacts would occur adjacent to the industrial roadway network east of the railroad right-of-way. These impacts would be related to construction of a realigned and depressed Goodwin Avenue, which would cross under a new railroad bridge (supporting the HSR and nonelectrified track) connecting to Pacific Avenue Way.
    - Chevy Chase Drive: Would remain open until the Goodwin Avenue grade separation is constructed. Following construction, Chevy Chase Drive would be closed and a pedestrian undercrossing would be provided.

- **City of Los Angeles**

- Revere Avenue: May experience increased traffic due to potential closure at the intersection of Seneca Avenue and Glendale Boulevard. Increased traffic may also result from construction vehicles entering the south side of the temporary construction staging area along the east side of Los Feliz Place between Los Feliz and Glendale Boulevards.
- Parking Lot (between Revere Avenue and Seneca Avenue): May experience increased traffic due to potential closure at the intersection of Seneca Avenue and Glendale Boulevard. Increased traffic may also result from construction vehicles entering the south side of the temporary construction staging area along the east side of Los Feliz Place between Los Feliz and Glendale Boulevards.
- Seneca Avenue: May experience increased traffic due to potential closure at the intersection of Seneca Avenue and Glendale Boulevard. Increased traffic may also result from construction vehicles entering the temporary construction staging area along the east side of Los Feliz Place between Los Feliz and Glendale Boulevards from the south.
- Seneca Court: May experience increased traffic due to potential closure at the intersection of Seneca Avenue and Glendale Boulevard. Increased traffic may also result from construction vehicles entering the temporary construction staging area along the east side of Los Feliz Place between Los Feliz and Glendale Boulevards from the south.
- W San Fernando Road: A northbound/southbound traffic detour would be required for construction of a new railroad bridge at Goodwin Avenue.
- Algers Street: A northbound/southbound traffic detour would be required for construction of a new railroad bridge at Goodwin Avenue.
- Los Feliz Boulevard: An eastbound/westbound traffic detour may be required for construction of two double-track bridges (HSR and SCRRA) and new median/street improvements. May be able to maintain one lane in each direction.
- Glendale Boulevard: An eastbound/westbound traffic detour may be required for construction of two double-track bridges (HSR and SCRRA) and new median/street improvements. May be able to maintain one lane in each direction.
- Central Maintenance Facility Access: An eastbound/westbound traffic detour would be required for construction of two double-track bridges (HSR and SCRRA) and new median/street improvements. May be able to maintain one lane in each direction.
- Main Street: An eastbound/westbound traffic detour may be required for construction of a roadway bridge overcrossing. One lane would be maintained in each direction, including across the existing Main Street bridge.

**CEQA Conclusion**

The impact of hazards created by detour routes would be less than significant because implementation of the SS-IAMF#1, TR-IAMF#4, and TR-IAMF#5 during construction of the HSR Build Alternative would provide specific plans and procedures for dealing with safety hazards during construction. The construction would not substantially increase hazards due to a design feature or incompatible uses because SS-IAMF#1 would require a Construction Safety Transportation Management Plan that would establish a traffic control plan containing procedures for temporary road closures. In addition, TR-IAMF#4 and TR-IAMF#5 would require the contractor to prepare specific construction management plans to address the maintenance of pedestrian and bicycle access during the construction period where feasible to reduce construction impacts on these transportation uses. Therefore, CEQA does not require any mitigation.

***Impact S&S #3: Increased Response Times for Fire, Rescue, and Emergency Services from Temporary Road Closures***

Road closures and modified traffic routing along the HSR Build Alternative during construction could result in increased response times for emergency responders. Section 3.2, Transportation,

provides information regarding the location of temporary road closures that would occur during HSR Build Alternative construction activities.

These road closures would necessitate detours to local streets (see Impact S&S #2, Accidents Associated with Construction-Related Detours), which would create delays for emergency responders and other parties using these routes. As discussed in Section 3.11.4.2 and under Impact S&S #2, SS-IAMF#1 would be incorporated as part of the HSR Build Alternative and require the preparation of a Construction Safety Transportation Management Plan and coordination with the local jurisdictions on emergency vehicle access. In addition, TR-IAMF#2 would also require the creation of a Construction Transportation Plan, which would address how the design-build contractor would carry out each phase of construction to maintain traffic flow during peak travel periods, address pedestrian safety, and promote child safety (via crossing guards near schools, daycare centers, and parks). The plan would ensure that there would be no substantial impairment to any adopted emergency response plans or emergency evacuation routes within the RSA.

#### **CEQA Conclusion**

The impact on traffic hazards created by detours during construction under CEQA would be less than significant because implementation of SS IAMF#1 and TR-IAMF#2 during construction of the HSR Build Alternative would require plans to address safety hazards created by these detours. SS-IAMF#1 and TR-IAMF#2 would minimize the impacts of construction on the response times of emergency vehicles through the development of a Construction Safety Transportation Management Plan and a Construction Transportation Plan to maintain traffic flow during peak hours and to establish detours. TR-IAMF#2 would also require the creation of a Construction Transportation Plan, which would address how the design-build contractor would carry out each phase of construction to maintain traffic flow during peak travel periods, address pedestrian safety, and promote child safety (via crossing guards near schools, daycare centers, and parks). Construction of the Build Alternative would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Therefore, CEQA does not require any mitigation.

#### ***Impact S&S #4: Crime at Construction Sites***

Criminal activity around the HSR Build Alternative construction sites would be typical of the crimes that occur at other heavy construction sites, such as theft of equipment and materials or vandalism after work hours. Construction contractors would implement security measures common to construction sites, including securing equipment and materials in fenced and locked storage areas, as well as the use of security personnel after working hours. Security lighting would be required to be focused on the site to deter theft.

#### **CEQA Conclusion**

The impacts related to crime at construction sites would be less than significant because common construction security measures and security lighting during construction of the HSR Build Alternative would reduce crime incidents and theft. As a result, there would be no safety hazard related to crime at construction sites. Therefore, CEQA does not require any mitigation.

#### **Operations Impacts**

Operation of the HSR Build Alternative would include inspection and maintenance along the track and railroad right-of-way, as well as on the structures, fencing, power system, train control system, electric interconnection facilities, communications facilities, and station facilities. Operations and maintenance are described in Chapter 2, Alternatives.

#### ***Impact S&S #5: Train Accidents***

Travel by automobile is by far the most dangerous transportation mode when compared to other modes of transportation. Over 3,134 fatalities and approximately 188,445 nonfatal injuries occurred on California highways in 2018 alone (CHP 2018). In 2015, when ranked by specific ages, motor vehicle traffic crashes were the leading cause of death among people ages 10, 11, 17, and every age from 17 through 23 (National Highway Traffic Safety Administration 2015). The

potential for automobile accidents increases with the appearance of more and more vehicles on state highways.

By contrast, conventional passenger rail service is extremely safe when compared with other modes of transportation, such as via automobile. Sophisticated train control, communication, and signaling systems, as well as protected grade crossings, for example, have made conventional passenger rail service in the U.S. a safe way to travel. Based on available accident data for HSR systems in 12 countries, 73 accidents have occurred because of HSR systems in total since HSR systems began operation in 1965, resulting in 167 fatalities, with an average fatality of rate of 2.4 persons per accident (Mineta Transportation Institute 2013).

International experience operating HSR systems has surpassed the passenger rail safety record achieved in the U.S. 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, HSR trains (the *Train à Grande Vitesse*, or TGV) have been operating since 1981 and currently carry more than 100 million passengers per year. 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 system, the InterCity Express, does not use an entirely dedicated track system, but shares track with freight and conventional passenger rail (Authority 2012a). An HSR accident in the late 1990s prompted design changes to the heels of German InterCity Express trains to remedy a design flaw (National Aeronautics and Space Administration 2007). German InterCity Express trains carry 74 million passengers per year (Authority 2012a).

HSR service was introduced in China in 2007. China now 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 72. The crash was caused by the failure of signaling equipment. This equipment was determined to have a flawed design that was not properly identified during its development. The official investigation 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 HSR system, *Alta Velocidad Española*, opened its first HSR line in 1992, linking Madrid to Seville. Approximately 23 million passengers travel on the Spanish HSR system (Authority 2012a). On July 24, 2013, a high-speed train operated by Renfe Operadora derailed as it entered the city of Galicia. The derailed train struck an adjacent concrete retaining wall, causing several cars to crumple and break apart. The result was 79 passengers killed and hundreds more injured. The speed at the time of the derailment was approximately 95 mph, 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 (Puente 2014).

On December 18, 2017, Amtrak Passenger Train 501 derailed, killing three people near Dupont, Washington, on its first revenue service on the Point Defiance Bypass reroute. The Point Defiance Bypass Project reroutes passenger trains to an inland rail line along the west side of Interstate 5 through south Tacoma, Lakewood, and DuPont to provide more frequent, more reliable, and faster Amtrak Cascades service. According to the National Transportation Safety Board investigation, the authorized track speed in the area of the accident was 79 mph on approach to the 30 mph curve just before the bridge. PTC was not in service on the line the train was operating on when it derailed. Preliminary indications from the rear locomotive event recorder show the train was traveling at about 80 mph before a sudden reduction in brake pipe, which initiated the emergency train brakes. The investigation also found that the reduction in the brake pipe does not appear to have been engineer-induced (National Transportation Safety Board 2017a, 2017b).

Based on international HSR system operation, the most hazardous HSR accidents are derailments. The 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. The system would enforce all speed restrictions, including slower speeds on curves, to prevent derailments such as the accidents in Galicia, Spain and Dupont, Washington. If the engineer does not voluntarily slow the train, the system would slow or stop the train, as appropriate.

The types of accidents that could be associated with the HSR system can be broken down into two broad categories: (1) accidents attributable to the HSR system itself, and (2) accidents attributable to external factors such as collisions between the HSR trains and objects entering the HSR corridor, such as vehicles or objects from adjacent highways or trains from adjacent freight lines. The first category consists of train-to-train collisions, derailments, movement of trains through an improperly positioned switch, and train incursion into a work zone limit. These types of accidents are discussed below.

#### **High-Speed Rail System Accidents**

Current practice in the U.S. to ensure the safety of passengers in the event of a conventional train-to-train collision is to provide locomotives with sufficient weight and strength to protect the trailing passenger cars. This enables the lead vehicles, or locomotives, to withstand the impact of a collision, thereby strengthening the crashworthiness of the train to protect its occupants. Furthermore, the design of U.S. HSR systems must comply with the requirements of the Rail Safety Improvement Act of 2008, passed by U.S. Congress and mandated by the FRA. This legislation requires that all passenger-carrying railroads adopt PTC systems. PTC systems are designed to help prevent train-to-train collisions, train derailments, train/switch accidents, and work zone incursion accidents. Additionally, the operation of the HSR system must comply with the FRA System Safety Program Rule (49 C.F.R. 270), which includes processes and procedures to identify and mitigate or eliminate hazards and the resulting risks on the railroad's systems.

The approach for protecting the safety of passengers from a train-to-train collision depends on collision avoidance by keeping the trains apart at a safe stopping distance and employing an ATC system. The general approach for the ATC system is to monitor the location and speed of all trains on the HSR network and to coordinate and maintain enough physical separation to allow safe braking. The system design approach using a collision avoidance philosophy has proven to be highly effective in maintaining passenger safety in both Asian and European HSR systems. In more than 40 years of operation in Japan and over 25 years of operation in Europe, there have been no reported passenger fatalities resulting from a train-to-train collision on an HSR network that has applied this type of system design approach. As discussed above, in its haste to build a world-class HSR industry, Chinese management largely ignored quality control procedures in the design of equipment, substantially jeopardizing the safety of its system (Aredy 2011). This has not been the situation in Europe and other parts of Asia. FRA and CPUC regulations, coupled with the oversight described in Section 3.11.2, would provide for safe design of the HSR system. In the accident in Spain, the train did not have a PTC system to protect against over-speed derailment. Additionally, PTC was not yet installed on the rail line in Washington where the recent Amtrak derailment occurred (National Transportation Safety Board 2017a). A PTC system is required by the Railway Safety Improvement Act of 2008 through regulations enforced by the FRA and would be included on the HSR Build Alternative. In late 2015, Congress extended the deadline for implementation of PTC to December 31, 2018, with the possibility of an extension to a date no later than December 31, 2020, if a railroad completes certain statutory requirements necessary to obtain an extension. Operation of the HSR Build Alternative is anticipated to occur several years after the implementation deadline and extension date. Therefore, the HSR Build Alternative would be required to implement PTC.

The California HSR System would enforce all speed restrictions, including slower-speed restrictions for curves and work zones where workers would be present. If the engineer does not voluntarily slow the train, the PTC system would slow or stop the train as appropriate.

#### **Accidents Attributable to External Factors**

Safety considerations are also included in the design of the HSR Build Alternative related to the proximity of the HSR to other transportation facilities, including other railroads or highways (Authority 2013a; 2013b). The primary safety concern is that a derailed train or errant vehicle

would obstruct the HSR. Construction of grade separations would help to prevent train and automobile/bicycle/pedestrian conflict; these impacts are discussed in further detail under Impact S&S #6. Additionally, intrusion protection railings would be placed on roadway overcrossings to prevent vehicles from falling onto the track. For the HSR Build Alternative, Metro owns the railroad right-of-way, SCRRA owns the track and operates the Metrolink commuter rail service, Amtrak provides intercity passenger service, and UPRR holds track access rights and operates freight trains. Because parts of the HSR Build Alternative would operate within the same existing corridor as these rail services, there is a risk of a conventional passenger or freight train derailing, and obstructing or impacting a train.

Historically, train derailments in the U.S. have generally occurred where there is special trackwork, such as turnouts and crossovers, or where a rail network may not have been adequately maintained to the authorized speed. The 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. In addition to PTC, the HSR system would travel at speeds like other existing trains in the Burbank to Los Angeles Project Section corridor. While hazards related to derailment or errant vehicle obstruction already occur within the RSA, due to the increase in train activity associated with the HSR Build Alternative, the likelihood of an accident would be higher than in the existing condition.

There is a potential for objects other than vehicles or trains, such as trash, tree limbs, and other debris, to enter the HSR corridor. According to *TM 2.8.2, Access Control for High-Speed Rail Right-of-Way and Facilities* (Authority 2010b), barriers (such as access-restricted fencing) would be constructed around the corridor to prevent intrusion by objects.

In addition to the safe operation of most HSR systems around the world, international rail operators also have given high priority to security issues, including the protection of people from intentional acts that could injure or harm them, and to the protection of property from deliberate acts. Each of the 12 HSR systems now in operation around the world has implemented measures to reduce or minimize criminal and terrorist activities (Taylor et al. 2005). Maintaining a safe and secure traveling environment is important to passenger confidence. As discussed in Section 3.11.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. SS-IAMF#2 would require the Authority to implement safety and security plans related to HSR operation. Additionally, SS-IAMF#3 would include the identification of hazards, assessment of associated risk, and application of control measures to reduce the risk to an acceptable level; the assessment includes a preliminary hazard analysis and threat and vulnerability assessment.

#### **Train Derailment**

A basic design feature of an HSR system is to contain trainsets within the operational corridor (Authority 2013a). Strategies to ensure containment include operational and maintenance plan elements that would ensure high-quality tracks and vehicle maintenance to reduce the risk of derailment. In addition, physical elements, such as containment parapets, check rails, and guard rails, would be used in specific areas with a potential high risk of or high impact from derailment. These areas include elevated guideways and approaches to conventional rail and roadway crossings.

#### **CEQA Conclusion**

The impacts related to train accidents would be less than significant because implementation of the SS-IAMF#2, SS-IAMF#3, the Railway Safety Improvement Act of 2008 (PTC), FRA System Safety Program Rule (49 C.F.R. Part 270), ATC, standard design practices, FRA and CPUC regulations, coupled with the oversight described in Section 3.11.2, would reduce hazards created by train derailment and other train accidents. SS-IAMF#2 would require the Authority to implement all safety and security plans related to HSR operation. Additionally, SS-IAMF#3 would include the identification of hazards, assessment of associated risk, and application of control measures to reduce the risk to an acceptable level. Therefore, CEQA does not require any mitigation.



**Impact S&S #6: Motor Vehicle, Pedestrian, and Bicycle Accidents Associated with High-Speed Rail Operations**

The HSR alignment would share right-of-way with other trains (UPRR, SCRRA, and Amtrak), as well as sharing the new electrified tracks with Metrolink as part of the HSR Build Alternative. The HSR Build Alternative would implement PTC and travel at speeds similar to other existing trains in the Burbank to Los Angeles Project Section vicinity.

As described in Section 3.11.5, barriers to entering the right-of-way exist at all of the current at-grade crossings except at Main Street and the private LADWP road. Incidents have occurred at Sonora Avenue, Main Street, Grandview Street, and Buena Vista Street. As shown on Figure 3.11-2, implementation of the HSR Build Alternative and early action projects would modify crossings to improve the existing environment for motorist, pedestrian, and bicyclist safety in several ways, including by removing train and automobile/bicycle/pedestrian conflict at the identified at-grade intersections (indicated as “modified crossings” on the figure with colored circle markings). The HSR Build Alternative would result in the closure of Chevy Chase Drive and the private LADWP road where there are existing at-grade crossings. Additionally, the at-grade intersections of Sonora Avenue, Grandview Avenue, Flower Street, and Main Street would become grade-separated. Buena Vista Street is also an at-grade intersection that would be modified by the HSR Build Alternative but would remain at-grade for use by SCRRA. Although no current crossing exists at Goodwin Avenue, the HSR Build Alternative would modify the street, making it an undercrossing.

The HSR alignment would be entirely grade-separated at crossings. Therefore, implementation of the HSR Build Alternative would include street reconfigurations at multiple intersections to be grade-separated, which would improve safety by eliminating train and automobile/bicycle/pedestrian conflict. The alignment would also be fenced to prohibit public or unauthorized vehicle access. Overall, implementation of the HSR Build Alternative would generally improve motorist, pedestrian, and bicyclist safety by eliminating existing at-grade crossings through roadway improvements near the stations and along the HSR alignment.

As discussed in Section 3.11.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. TR-IAMF#12 would require the contractor to provide a technical memorandum before construction that describes how pedestrian and bicycle accessibility would be provided and supported across the HSR corridor, to and from stations, and on station property.

**CEQA Conclusion**

The impacts associated with pedestrians and bicyclist accidents with trains would be less than significant because TR-IAMF#12 and construction of grade-separated crossings would reduce operational interactions with trains. TR-IAMF#12 would require the contractor to provide a technical memorandum before construction that describes how pedestrian and bicycle accessibility would be provided and supported across the HSR corridor. Operations and maintenance of the HSR Build Alternative would result in impacts that would be less than significant under CEQA because there would be no bicycle, pedestrian, or safety policy, plan, or program conflicts and because safety would not be negatively affected. Furthermore, the project's compatibility with adopted bicycle safety plans is discussed in detail in Appendix 3.1-B. Therefore, CEQA does not require any mitigation.

**Impact S&S #7: High-Speed Rail Accidents Associated with Seismic Events**

Sections of the HSR alignment and infrastructure would be in seismically sensitive areas and may cross fault zones (i.e., the Verdugo Fault Zone and Hollywood-Raymond Fault Zone), as discussed in Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources. Therefore, these portions of the alignment would be constructed to specifications capable of withstanding defined levels of seismic activity without incurring structural failure. As discussed in Section 3.11.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. GEO-IAMF#10 would require the contractor to provide a technical memorandum before construction documenting how guidelines and standards from the following

organizations have been incorporated into facility design and construction: American Association of State Highway and Transportation Officials, Federal Highway Administration, American Railway Engineering and Maintenance-of-Way Association, California Building Code, International Building Code and American Society of Civil Engineers, Caltrans Design Standards, Caltrans Construction Manuals, and American Society for Testing and Materials.

High-speed trains operate in highly seismic areas of Japan and Taiwan. Since HSR systems have been built in those countries, substantial efforts have gone into the design and implementation of dynamic rolling stock and structures to prevent catastrophic accidents during seismic events (Kumagai 2008; Cheng et al. 2011). The Taiwan derailment during an earthquake is one example of how a severe accident was prevented through structural elements that kept the train upright and within the right-of-way.

In 2016, California Senate Bill 438 established the California Earthquake Early Warning Program and the California Earthquake Early Warning Advisory Board. The Earthquake Early Warning System would alert people and devices before the anticipated strongest shaking arrives in affected regions. This would allow for the safeguarding of utility infrastructure to prevent combustions, flooding, and loss of water distribution systems; the prevention of fatal collisions by slowing and stopping trains and clearing bridges; and quicker first-responder mobilization (Governor's Office of Emergency Services 2018).

In accordance with GEO-IAMF#8, high-speed train service would be suspended when an earthquake is detected by the HSR system. Following the seismic event, inspections of the track, structures, bridges, and other system elements would be a priority, and the necessary repairs and operational precautions, such as service suspension or speed restrictions, would be implemented as necessary and prudent.

#### **CEQA Conclusion**

The impacts associated with hazards created by seismic events that affect trains would be less than significant because GEO IAMF#10 would establish guidelines and standards for reducing seismic hazards and would require the contractor to provide a technical memorandum before construction documenting how guidelines and standards from the following organizations have been incorporated into facility design and construction: American Association of State Highway and Transportation Officials, Federal Highway Administration, American Railway Engineering and Maintenance-of-Way Association, California Building Code, International Building Code and American Society of Civil Engineers, Caltrans Design Standards, Caltrans Construction Manuals, and American Society for Testing and Materials. Therefore, CEQA does not require any mitigation.

#### **Impact S&S #8: Risk of Fire**

The HSR Build Alternative would include project elements that have a potential risk of fire and related hazards, including passenger vehicles, traction power stations, and paralleling stations. These elements have electrical equipment or combustible materials and represent a fire and explosion risk.

As discussed in Section 3.11.5, Affected Environment, existing railroads within the RSA are designed to meet the requirements of the NFPA. In addition, the Authority has developed an emergency access plan for operation of the HSR system in the RSA pursuant to NFPA Standard 130: Standard for Fixed Guideway Transit and Passenger Rail Systems. The plan includes emergency access provisions regarding fire and safety for stations, ventilation systems, procedures, control systems, communication, and vehicles. NFPA Standard 130 also provides design standards for flammable materials and fire hazards. The purpose of NFPA Standard 130 is to limit the likelihood of a fire and to control a fire to limit its severity (Society of Fire Protection Engineers 2014). According to the *TM 2.8.1, Safety and Security Design Requirements for Infrastructure Elements* (Authority 2013a), 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.

As discussed in Section 3.11.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. SS-IAMF#2 would implement fire/life safety and security programs that would be implemented in system design, construction, and operation. The fire and life safety program would be 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. Additionally, the design standards and guidelines would require emergency walkways for elevated, at-grade, and tunnel sections, as well as appropriate space as defined by fire and safety codes along the HSR alignment to allow emergency response access. GEO-IAMF#10 would also require the contractor to provide a technical memorandum before construction documenting how the California Building Code general building design and construction requirements relating to fire and life safety, structural safety, and access compliance have been incorporated into facility design.

The HSR Build Alternative's design includes fire warning systems, as well as emergency exits and notification systems, consistent with the requirements of the NFPA Safety Code and Standard 130, the California Building Standards Code, and the International Building Code. Space would be available for fire suppression systems within the HSR Build Alternative tunnel.

The HSR Build Alternative would pass through very high wildland fire hazard severity zones. Derailment of a train during a seismic event or other natural disaster could ignite a fire in areas designated as fire hazard severity zones adjacent to the HSR corridor. Because the HSR would carry passengers and would be electric-powered, there would be no safety hazard associated with HSR cargo or fuel. All HSR right-of-way and facility vegetation control programs would conform to CAL FIRE guidelines for defensible space to reduce fire hazards. However, a basic design feature of an HSR system is containment of trainsets within the operational corridor. Thus, if a derailment were to occur in a fire hazard zone, the train would remain within the HSR right-of-way. Because the train would be contained in the HSR right-of-way and would not contain cargo or fuel that could result in a fire or explosion, the HSR Build Alternative would not substantially increase hazards because of wildfire.

Additionally, if a wildfire is approaching the HSR system, the HSR Build Alternative includes a fire warning system that will cause the HSR system to stop operating before the trainset enters any area engulfed by a wildfire. Once a wildfire has passed through an area where the HSR system is located, there is potential for secondary wildfire effects that could impact the operation of the HSR system. These secondary effects could range from landslides to mudflows that could overrun the HSR system. However, the HSR system is designed so that if outside obstructions were to enter the track system, the HSR system would provide a warning to the operators and the trainset would be shut down to avoid potential accident or derailment due to the secondary effects of wildfires.

#### **CEQA Conclusion**

The impact of fire hazards on people or structures (including where wildlands are adjacent to urbanized areas) would be less than significant because SS-IAMF#2, GEO-IAMF#10, NFPA Standard 130, the California Building Code, and the International Building Code would reduce possibility and risk of fire during operation of the HSR Build Alternative. SS-IAMF#2 would implement fire/life safety and security programs that promote fire and life safety and security in system design and implementation. The fire and life safety program would be 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. GEO-IAMF#10 would require the contractor to provide a technical memorandum before construction documenting how the California Building Code general building design and construction requirements relating to fire and life safety, structural safety, and access compliance have been incorporated into facility design. Operation of the HSR Build Alternative would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. Further, implementation of design features and standard operating provisions listed in Section 2.4.2.2,

Overview and Summary of Design Features, would prevent adverse effects to project occupants from pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire caused by slopes, prevailing winds, and other factors. These design features and standard operating provisions would also protect project occupants from impacts associated with downslope or downstream flooding or landslides resulting from post-fire slope instability or drainage changes. Therefore, CEQA does not require any mitigation.

**Impact S&S #9: Increased Response Times for Fire, Rescue, and Emergency Services from Permanent Road Closures**

As discussed under Impact S&S #6 and shown on Figure 3.11-2, at-grade railroad crossings exist within the RSA. At-grade railroad crossings can delay emergency response times when trains block crossings. Emergency response teams would use other routes to bypass the train and respond to emergencies. The HSR Build Alternative would not have any at-grade crossings, and there would be emergency access points every 2.5 miles along the right-of-way to facilitate emergency response access.

As discussed in Chapter 2, Alternatives, the HSR Build Alternative would result in the closure or modification of at-grade crossings into overcrossings or undercrossings. Some modifications could result in decreased emergency response times because of the elimination of at-grade crossings. Road closures and modified traffic routing along the HSR alignment could result in increased response times for emergency responders; however, the response times would not substantially impair any adopted emergency response plans or emergency evacuation routes. Table 3.11-15 lists the road closures that would occur because of the HSR Build Alternative. As discussed in Section 3.11.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. SS-IAMF#2 would include coordination with emergency responders to incorporate roadway modifications that maintain existing traffic patterns and fulfill response route needs during HSR operations.

**Table 3.11-15 Road Closures**

Roadway	Current Crossing Configuration	Proposed Crossing Configuration <sup>1</sup>
Chevy Chase Drive <sup>2</sup>	At-grade	Closed
Private LADWP road	At-grade	Closed

Source: California High-Speed Rail Authority, 2016b

<sup>1</sup> All proposed grade crossing configurations are pending California Public Utilities Commission approval.

<sup>2</sup> This roadway would be closed, but it would be replaced with the new Goodwin Avenue undercrossing.

LADWP = Los Angeles Department of Water and Power

**CEQA Conclusion**

The impact of increased emergency response times due to permanent road closures would be less than significant because implementation of SS IAMF#2 during operation of the HSR Build Alternative would include coordination with emergency responders to incorporate roadway modifications that maintain existing traffic patterns. The response times of emergency vehicles would not be significantly increased during the operation of the HSR Build Alternative. The HSR Build Alternative would not substantially impair any adopted emergency response plans or emergency evacuation routes. Therefore, CEQA does not require any mitigation.

**Impact S&S #10: Increased Response Times for Fire, Rescue, and Emergency Services Associated with Access to Elevated Track and Tunnels**

HSR system design would include retained-fill tracks as high as 34 feet between Western Avenue and State Route 134. This elevated section could be difficult to evacuate and difficult for emergency responders to reach in case of emergencies during which a train is stopped. The elevated-track portion includes a walking surface and a lateral safety railing in accordance with standard engineering design requirements (NFPA International 2014). The design would also include ground access for the elevated tracks at regular intervals, allowing emergency passenger evacuation if needed, as well as for routine track maintenance.

The HSR Build Alternative would include tunnels through parts of the city of Burbank. These below-ground sections could be difficult to evacuate and difficult for emergency responders to reach in case of emergencies during which a train is stopped. The tunnel portion would include walkways along the tunnel walls on the same side as the access/egress points or cross-passageways. Walkways would be illuminated to provide safe passage in the event of an evacuation, in accordance with the requirements of NFPA Standard 130. As discussed in Section 3.11.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. SS-IAMF#2 would be implemented to avoid or minimize impacts related to increased response times associated with access to elevated track and tunnels. This IAMF would implement the fire and life safety program, including coordination with local emergency response organizations to provide them with an understanding of the HSR system, facilities, and operations, and to obtain their input for modification of emergency response operations and facilities, such as evacuation routes. With implementation of SS-IAMF#2, adopted emergency response plans and emergency evacuation routes would not be substantially impaired.

#### **CEQA Conclusion**

The impact of increased emergency response times due to permanent road closures would be less than significant because SS IAMF#2 and NFPA Standard 130 would be implemented during operation and would require coordination with emergency responders to maintain response times. SS-IAMF#2 would also include coordination with emergency responders to incorporate roadway modifications that maintain existing traffic patterns. The response times of emergency vehicles to areas with elevated track sections and tunnels would not significantly increase during operation of the HSR Build Alternative. Additionally, the HSR Build Alternative would not substantially impair any adopted emergency response plans or emergency evacuation routes. Therefore, CEQA does not require any mitigation.

#### ***Impact S&S #11: Need for Expansion of Existing Fire, Rescue, and Emergency Services Facilities***

The associated development and economic activity that would indirectly result from the presence of the HSR Build Alternative could increase demand for local emergency responders. Additionally, operation of the HSR Build Alternative would increase traffic at intersections around the HSR stations. As discussed in Section 3.11.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. SS-IAMF#2 would implement the fire and life safety program, which would include coordination with local emergency response organizations to provide them with an understanding of the HSR system, facilities, and operations, and to obtain their input for modifications to emergency response operations and facilities.

Although SS-IAMF#2 would reduce impacts, it would not avoid impacts entirely. As discussed in Section 3.2, Transportation, the HSR Build Alternative would incorporate TRAN-MM#1 and TRAN-MM#2, which would limit the impacts of the HSR Build Alternative on affected intersections by reducing the amount of traffic on streets near the stations and by constructing intersection improvements, respectively. 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, would also be implemented. S&S-MM#1 would require the Authority to monitor the response of the local fire rescue and emergency service providers to incidents at the HSR stations and provide a fair share of the cost of service to address the impacts due to the increased demand for local emergency responders. S&S-MM#1 is described in more detail in Section 3.11.7, Mitigation Measures.

#### **CEQA Conclusion**

The impact of the project on the existing need for fire, rescue, and emergency service facilities under CEQA would be potentially significant. SS-IAMF#2 would implement the fire and life safety program, which would include coordination with local emergency response organizations to provide them with an understanding of the HSR system, facilities, and operations, and to obtain their input for modifications to emergency response operations and facilities. However, this IAMF would not avoid significant impacts entirely. Therefore, CEQA does require mitigation. The authority would implement TRAN-MM#1 and TRAN-MM#2 to limit the impacts of the HSR Build Alternative on affected intersections by reducing the amount of traffic on streets near the stations

and by constructing intersection improvements. S&S-MM#1 would also reduce the impacts on existing fire, rescue, and emergency services facilities by monitoring the response of providers to incidents at stations and providing compensation for the expansion of services necessary to serve the HSR Build Alternative. The procedure associated with S&S-MM#1 is described in more detail in Section 3.11.7. With the implementation of TRAN-MM#1, TRAN-MM#2, and S&S-MM#1 during operation of the HSR Build Alternative, the impact on the existing need for fire, rescue, and emergency service facilities under CEQA would be less than significant.

### ***Impact S&S #12: Accident Risks to Airports, Private Airstrips, and Heliports***

As indicated on Figure 3.11-1 and in Table 3.11-10, there are a public service airport and 19 heliports within 2 miles of the HSR Build Alternative. The HSR Build Alternative is not within any other Airport Land Use Compatibility Plans. Tall structures, especially when aggregated, may interfere with terrestrial-based communications, navigation, and surveillance and weather equipment due to frequency interference, scattering of radar beams, or attenuation of radar returns. Therefore, in addition to the traditional obstruction height analysis performed by the Federal Aviation Administration, local communities may wish to require proponents to demonstrate that proposed structures would not compromise the utility of an airfield. The HSR Build Alternative would not construct objects taller than 100 feet within 2 miles of an airport or within an airport land use compatibility plan area. To address the potential for disruption of airfield and airspace operations at the Hollywood Burbank Airport as a result of operation of the HSR Build Alternative, the HSR Build Alternative incorporates SS-IAMF#5, which requires the Authority to submit designs and/or information to the FAA as required by the Code of Federal Regulations, Title 14, Part 77, to ensure design of 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) and if necessary, coordination with the Hollywood Burbank Airport to amend the current Airport Layout Plan (ALP) for any permanent construction-related facilities required for the HSR project, to be submitted to the FAA for approval. As described above under Impact S&S#1: Accidents and Health Risks at Construction Sites, coordination with the FAA is ongoing and all necessary approvals to evaluate the effect of proposed construction or alteration of navigable airspace would be obtained prior to commencement of construction activities. Therefore, the HSR Build Alternative would not substantially increase hazards because of being located within an airport or airport land use compatibility plan area, and it would not expose people residing or working in the RSA to a safety hazard in the vicinity of an airport or private airstrip.

#### **CEQA Conclusion**

The impact related to accident risks to operations of airports, private airstrips, and heliports would be less than significant under CEQA with the incorporation of SS-IAMF#5 because, although the HSR Build Alternative would be within an airport land use compatibility plan area and within 2 miles of a public airport or public use airport, it would not result in a significant safety hazard for people residing or working in the RSA. Therefore, CEQA does not require any mitigation.

### ***Impact S&S #13: Hazards to the High-Speed Rail from Nearby Facilities***

As discussed in Section 3.11.5., Affected Environment, there are no fall hazards (such as industrial facilities with tall structures such as silos, distillation columns, and wind turbines) in the RSA that would pose a threat to the HSR Build Alternative. Additionally, intrusion protection (access-restricted fencing) along the railroad right-of-way would be installed

As discussed in Section 3.11.5, while landfills and waste disposal sites pose a potential explosion risk to HSR facilities, passengers, and employees due to methane gas release, all facilities within the project footprint plus a 0.25-mile buffer of the project footprint were found to have a low potential for gas release (California Department of Conservation 2016). More detail can be found in Table 5-1 of the *Burbank to Los Angeles Project Section: Hazardous Materials and Wastes Technical Report* (Authority 2016c). However, should an incident occur adjacent to the HSR alignment, the HSR system's design would minimize risk to passengers and employees. As described under Impact

S&S #8: Risk of Fire, the Authority has developed an emergency access plan for operation of the HSR system in the RSA pursuant to NFPA Standard 130: Standard for Fixed Guideway Transit and Passenger Rail Systems. Additionally, as described in TM 2.8.1, *Safety and Security Design Requirements for Infrastructure Elements*, facilities would be designed to have the capacity for safe emergency evacuation, including access and egress points, support infrastructure such as walkways, stairways, and access roads, and support systems such as lighting and communications (Authority 2013a).

#### **CEQA Conclusion**

The impact of hazards created by nearby facilities under CEQA would be less than significant because adherence with TM 2.8.1 (Authority 2013a), NFPA Standard 130 and ATC during operation of the HSR Build Alternative would require safety measures preventing nearby facilities from creating intrusions, explosion risk, and fall hazards within HSR right-of-way. Therefore, CEQA does not require any mitigation.

#### ***Impact S&S #14: Hazards to Residences from High-Speed Rail Derailment***

Derailment of a train during operation could be a safety hazard to any residences adjacent to the HSR guideway if the train were to leave the HSR right-of-way and collide with structures or people on adjacent residential properties. The project footprint would be primarily located within an existing railroad right-of-way. Therefore, similar train operations already occur near residences and there would not be substantial change from existing conditions. Additionally, because the HSR 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 structures or people on adjacent properties. The HSR system would travel at speeds similar to or lower than other existing trains in the Burbank to Los Angeles Project Section corridor; design speeds for the at-grade portion of the alignment would vary from 25 to 55 mph, depending on the design constraints. However, the HSR Build Alternative also includes the construction and operation of a paralleling and switching station and if the other project sections of the HSR system are not constructed, a standalone traction power substation would be required within the Burbank to Los Angeles Project Section. If a train derailment were to happen and hit one of these facilities, an electrical fire could occur. However, as discussed under Impact S&S #5, a basic design feature of an HSR system is containment of trainsets within the operational corridor. Additionally, the HSR Build Alternative would implement PTC, which would help to avoid collisions with other trains that could otherwise lead to derailment. If a derailment were to occur in a residential area, the train would remain within the HSR right-of-way. Because the train would be contained in the HSR right-of-way and would not contain cargo or fuel that would result in a fire or explosion, the HSR Build Alternative would not substantially increase hazards to nearby residents. Overall, the HSR Build Alternative would not result in a substantial change from existing conditions with regard to safety impacts on residences.

#### **CEQA Conclusion**

The impact of hazards created by derailment would be less than significant under CEQA because the implementation of basic design features and operation speeds of the HSR Build Alternative would prevent collisions and high-speed derailments in residential areas. Therefore, CEQA does not require any mitigation.

#### ***Impact S&S #15: Safety Impacts on Schools***

In the event of a train accident during operation of the HSR Build Alternative, a safety hazard to schools could occur if the train were to leave the HSR right-of-way and collide with adjacent structures, including schools, or people on adjacent properties. Potential causes for these accidents include derailment of a train during a seismic event or natural disaster. Hazards to schools or people in occupied areas of school property could only occur if train components leave the

guideway because of a derailment accident and enter the surrounding properties. Transportation safety for schoolchildren and accessibility to schools are discussed in Section 3.2, Transportation.<sup>9</sup>

As presented in Chapter 3.12, Socioeconomics and Communities, there are 14 schools within a 0.5-mile radius from the centerline of the HSR Build Alternative. The HSR Build Alternative would be primarily within the existing railroad right-of-way. Therefore, similar train operations already occur near these schools and there would not be substantial change from existing conditions. Additionally, because the HSR 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 an adjacent structure or people. The HSR system would travel at speeds similar to other existing trains in the Burbank to Los Angeles Project Section. However, the HSR Build Alternative also includes the construction and operation of a paralleling and switching station. If the other project sections of the HSR system are not constructed, a standalone traction power substation would also be required within the Burbank to Los Angeles Project Section. If a train derailment were to happen and hit one of these facilities, an electrical fire could occur. As discussed under Impact S&S #5, a basic design feature of an HSR system is containment of trainsets within the operational corridor. Additionally, the HSR Build Alternative would implement PTC, which would help to avoid collisions with other trains that could otherwise lead to derailment. Therefore, if an HSR derailment were to occur next to a school, the train would remain within the operational corridor. Because it would operate within an existing railroad corridor, the HSR Build Alternative would not result in a substantial change from existing conditions related to safety impacts on schools.

During the final design of the HSR Build Alternative, the contractor would perform preliminary hazards assessment and threat and vulnerability assessments that would be used to identify potential derailment hazards and establish safety hazard minimization provisions involving HSR facilities and systems operations. Specific provisions would include right-of-way fencing, security lighting, and security procedures. The Authority would apply measures to minimize the potential incidents and consequences of derailments, including application of design features (e.g., barriers) to minimize the potential for a derailed train to leave the guideway and affect school structures or individuals outside of the right-of-way. The incorporation of basic design features would minimize the potential for train accidents, including derailment, which would result in a safety hazard to nearby schools or structures on adjacent properties.

#### **CEQA Conclusion**

The impact of hazards created by derailment near schools would be less than significant under CEQA because the implementation of basic design features during operation of the HSR Build Alternative would prevent collisions and high-speed derailments adjacent to schools. Therefore, CEQA does not require any mitigation.

#### ***Impact S&S #16: Hazards to High-Speed Rail Passengers and Employees from Extreme Weather Conditions***

As discussed above and in Section 3.8, Hydrology and Water Quality, there are flood zones (Zones A, AE, and AO) within the safety and security RSA that could be subject to flooding and

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<sup>9</sup> Cal. Code Regs. Title 5, Section 14010, provides siting standards for new schools. These standards are not for the location of facilities other than schools; however, they provide an indication of when safety impacts may occur to school employees and students.

Cal. Code Regs. Title 5, Section 14010c, calls for a separation between schools and power transmission lines of 100 feet for 50- to 133-kilovolt lines. The HSR Build Alternative would be approximately 105 feet from the closest school and would be powered by a 25-kilovolt system; therefore, the electrification of the trains themselves would not be a safety hazard to schools.

Cal. Code Regs. Title 5, Section 14010d, requires a safety study for school sites within 1,500 feet of a railroad track easement. Chapter 3.12, Socioeconomics and Communities, identifies schools located within a 0.5-mile radius from the centerline of the HSR Build Alternative. The closest school to the HSR Build Alternative would be Los Feliz Charter School for the Arts, located adjacent to the track (165 feet from the centerline). Sonia Sotomayor Learning Academies (382 feet from the centerline) and Shepherd University (457 feet from the centerline) are also adjacent to the HSR Build Alternative.



inundation. The HSR Build Alternative would be primarily located within existing railroad right-of-way. Therefore, similar train operations already occur in potential flood zones. However, the HSR Build Alternative would also result in the realignment of the Lockheed Channel and would place additional structures within the channel associated with the Victory Place railroad bridge. The HSR Build Alternative would also place a structure in the Los Angeles River associated with the new Main Street bridge. Therefore, the HSR Build Alternative would result in an increase in water surface elevation. However, HYD-IAMF#2 would ensure that increases in water surface elevation follow the requirements set forth in U.S. Executive Order 11988 and the FEMA regulations, which prevent projects from increasing the base flood elevation by greater than 1 foot or substantially changing the floodplain limits.

The California Water Code entrusts the regulation of large dams to the Department of Water Resources. The Department of Water Resources created the Division of Safety of Dams to administer the dam safety program. The Division of Safety of Dams' mission is "[T]o protect people against loss of life and property from dam failure." The Division of Safety of Dams imposes dam safety guidelines on all large dams in California. Division of Safety of Dams engineers inspect over 1,200 dams each year to ensure they are performing and are being maintained in a safe manner. These inspections include thorough review of operational records, as well as site inspections of the dams and abutments, outlet works, spillways, and other critical structures. If deficiencies or potential problems are identified, interim remedial measures are typically prescribed, such as lowering the reservoir level until any necessary permanent repairs can be designed and implemented. Dam owners must submit any proposed structural or operational changes to the Division of Safety of Dams for review and approval before they can be implemented. Because of this dam safety program, the potential risk of inundation of the HSR due to dam failure is small.

High water/flood detectors would be installed as part of the HSR Build Alternative where necessary, considering drainage, culverts, bridges, overcrossings, undercrossings, and floodplains. The system would notify the ATC system and the OCC of any location where an accumulation of water exists in the right-of-way that may be a risk to the right-of-way, in-service equipment, or passenger equipment.

Thunderstorms are relatively uncommon within California but may occur at any time of year. The state experiences, on average, approximately 5 to 10 days of thunderstorms per year. Many thunderstorms produce little precipitation, and fires may result from lightning strikes. The design criteria establish criteria, guidelines, and requirements for the design of infrastructure and system elements of the HSR system, including those related to grounding, bonding, and lightning protection (Authority 2014). Each facility and exposed structure would be provided with appropriate lightning protection measures, based on the incidence of strikes in the area of each facility, which shall be grounded in accordance with the recommendations of the equipment manufacturer, California Electric Code, National Electric Code, National Electrical Safety Code, General Order 95, and NFPA 780, Standard for the Installation of Lightning Protection Systems, as applicable.

#### **CEQA Conclusion**

The impact under CEQA would be less than significant because the implementation of the HYD-IAMF#2, state and national regulations, and ATC during operation of the HSR Build Alternative would require adequate safety measures for extreme weather events. These measures would protect passengers and employees from possible safety hazards resulting from extreme weather and floods. HYD-IAMF#2 would ensure that water surface elevation increases follow the requirements set forth in U.S. Executive Order 11988 and the FEMA regulations. Therefore, CEQA does not require any mitigation.

#### ***Impact S&S #17: Hazards to High-Speed Rail Passengers and Employees from Winds***

As discussed in Section 3.11.5, high winds are common throughout the RSA. The HSR Build Alternative would be primarily located within the existing railroad right-of-way. Therefore, similar train operations already occur in areas where high winds are common, and there would not be substantial change from existing conditions. The operational wind speed for the HSR system is

60 mph; however, it would be designed to withstand a wind speed of 85 mph (Authority 2014). In order to avoid safety hazards to HSR passengers and employees from winds, HSR systems would be designed to remain within the operational corridor (Authority 2013a). Also, physical elements such as containment parapets, check rails, and guard rails would be used in areas with a high risk of or high impact from derailment. Additionally, crosswind detectors would be installed where necessary based on area wind and weather patterns. Wind speed data would be transmitted continuously to the OCC. Unsafe conditions would be conveyed through communications systems so that appropriate action may be taken.

#### **CEQA Conclusion**

The impact of high wind hazards under CEQA would be less than significant because implementation of standard design practices during operation of the HSR Build Alternative would prevent winds from substantially affecting train travel and the safety of passengers and employees on trains. Therefore, CEQA does not require any mitigation.

#### ***Impact S&S #18: Criminal Activity and Emergencies aboard Trains and at Stations, Right-of-Way, and Facilities***

During HSR operations, there is a potential for criminal activity, such as theft or violence, to occur on the trains. In addition, terrorists could target the HSR tracks or trains with the intent to inflict mass casualties and disrupt the transportation infrastructure.

During final design of the HSR Build Alternative, as required by SS-IAMF#3, the construction contractor would perform threat and vulnerability assessments that would be used to establish guidelines for the deterrence and detection of, as well as the response to, criminal or terrorist acts on HSR facilities and system operations. Specific requirements would include right-of-way fencing, security lighting, security procedures and training, and closed-circuit television.

The Authority would oversee implementation of the recommendations from the threat and vulnerability assessments during design and operation to minimize identified threats. As outlined in the *California High-Speed Train Project: Safety and Security Management Plan* (Authority 2014) and required by SS-IAMF#2, the HSR system would have a dedicated police unit that would address ongoing security needs of the system and minimize security threats. In addition to minimizing the threat of criminal and terrorist acts, these measures would also help to deter and prevent suicide attempts. The security provisions implemented as part of the threat and vulnerability assessments and police presence on HSR facilities would minimize the potential for theft, violence, and terrorism during operations and limit the exposure of passengers or employees to these threats.

#### **CEQA Conclusion**

The impact under CEQA would be less than significant because SS-IAMF#2 and SS-IAMF#3 would include law enforcement authorities and safety assessments. Additionally, the design of the HSR Build Alternative would include measures to minimize the potential for theft, violence, and terrorism during operations, and there would not be a safety hazard during operations. Therefore, CEQA does not require any mitigation.

### **3.11.7 Mitigation Measures**

The Authority has identified the following mitigation measure for impacts under NEPA and significant impacts under CEQA that cannot be avoided or minimized adequately by IAMFs. In addition, TRAN-MM#1 and TRAN-MM#2 (Section 3.2) would also avoid or minimize impacts related to safety and security.

#### ***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 operation of the HSR system, the Authority would monitor the response of the local fire rescue and emergency service providers to incidents at the HSR stations and provide a fair share of cost of service.

During the first 3 years of operation and maintenance, the Authority shall begin monitoring response of local fire, rescue, and emergency service providers to incidents at stations and provide a fair share of cost of service. Monitoring should 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 district-funded emergency medical technician/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 service areas (as established during the monitoring period). The fair share would be based on projected passenger use for the first year of operations, with a growth factor for the first 5 years of operation. This cost-sharing agreement would include provisions for ongoing monitoring and future negotiated amendments as the stations are expanded or passenger use increases. Such amendments would be made on a regular basis for the first 5 years of station operation, as would be provided in the agreement. To make sure that services are made available, impact fees would not constitute the sole funding mechanism, although impact fees may be used to fund capital improvements or fixtures (e.g., police substation, additional fire vehicle, on-site defibrillators) necessary to service delivery. After the first 5 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 take into account the volume of ridership, past record and trends in service demand at the stations, new local revenues derived from station area development, and any services that the Authority may be providing at the station.

#### ***Impacts from Implementing Mitigation Measure S&S-MM#1***

If the only need for mitigation is the provision of additional emergency response equipment or personnel, this mitigation measure would result in no impacts. If the project requires funding of additional public-service facilities, such as a police substation, mitigation may result in impacts on the physical environment. Those impacts would include emissions and fugitive dust from construction equipment, construction-related noise, visual impacts associated with new structures, and impacts on biological and cultural resources that may be present on the site of new structures. Any new or expanded government facilities would be designed and constructed to be consistent with local land use plans and would be subject to separate site-specific environmental impact analysis.

#### **CEQA Conclusion**

Any new or expanded government facilities would be designed and constructed to be consistent with local land use plans and would be subject to separate site-specific analysis under CEQA, including measures to mitigate impacts to a less than significant level. For this reason, it is expected that the impacts of mitigation would be less than significant under CEQA.

#### **3.11.7.1 Early Action Projects**

As described in Chapter 2, Section 2.5.2.9, early action projects would be completed in collaboration with local and regional agencies. They include grade separations and improvements at regional passenger rail stations. These early action projects are analyzed in further detail to allow the agencies to adopt the findings and mitigation measures as needed to construct the projects. No safety and security mitigation measures are applicable to the early action projects.

#### **3.11.8 NEPA Impact Summary**

This section summarizes the impacts of the HSR Build Alternative and compares them to the anticipated impacts of the No Project Alternative.

Under the No Project Alternative, recent development trends within the Burbank to Los Angeles Project Section are anticipated to continue, leading to residential and commercial growth throughout the county, which is anticipated to affect safety and security resources. It is anticipated that increased vehicular traffic volumes would correspond with an increase in traffic accidents in which injuries and fatalities could occur. Currently planned roadway capacity expansions would improve operations, but they would not completely alleviate congestion that

would result from anticipated growth. These programmed roadway projects would incorporate design features that would reduce, but not completely avoid, the potential for traffic accidents. For these reasons, existing vehicle accident rates would continue at current rates into the future for the No Project Alternative.

Under the No Project Alternative, the demand for law enforcement, fire, and emergency services would change and coincide with the anticipated population and employment growth and law enforcement, fire, and emergency services needs for planned industrial, residential, and commercial development. Demand for services would increase with the expansion of development and of the transportation system. Expansion of development and the transportation network under the No Project Alternative could result in increased crime. However, crime rates would also depend on future economic conditions and on a variety of other factors. Planned development and transportation projects would likely include mitigation to address the impacts of development and transportation projects on demand for services that would reduce potential impacts on safety and security.

Under the HSR Build Alternative, implementation of PTC, grade separations, and fencing would provide a safe means of intercity and regional travel and would therefore have a beneficial impact with regard to motor vehicle, pedestrian, and bicycle accidents associated with train operations. Under NEPA, construction of the HSR Build Alternative would have no impacts related to accidents and health risks at construction sites, accidents associated with construction-related detours, increased response times for fire rescue, and emergency services from temporary road closures and crime at construction sites. Under NEPA, operation of the HSR Build Alternative would have no impacts related to:

- Train accidents
- HSR accidents associated with seismic events
- Risk of fire
- Increased response times for fire, rescue, and emergency services due to permanent road closures
- Increased response times for fire, rescue, and emergency services associated with elevated track and tunnels
- The need for expansion of existing fire, rescue, and emergency services facilities (with applicable mitigation measures S&S-MM #1, TRAN-MM#1, and TRAN-MM#2)
- Accident risks to airports, private airstrips, and heliports
- Hazards to the HSR system from nearby facilities
- Hazards to residences from high-speed train derailment
- Safety at schools
- Hazards to HSR passengers and employees from extreme weather conditions and from winds
- Criminal activity
- Emergencies aboard trains and at stations, right-of-way, and facilities

### 3.11.9 CEQA Significance Conclusions

Table 3.11-16 provides a summary of the CEQA determination of significance for all construction and operations impacts discussed in Section 3.11.6.3, High-Speed Rail Build Alternative.

**Table 3.11-16 Summary of CEQA Significance Conclusions and Mitigation Measures for Safety and Security**

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
<b>Construction</b>			
Impact S&S #1: Accidents and Health Risks at Construction Sites	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#2: Accidents Associated with Construction-Related Detours	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#3: Increased Response Times for Fire, Rescue, and Emergency Services from Temporary Road Closures	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#4: Crime at Construction Sites	Less than Significant	No mitigation measures are required	Not Applicable
<b>Operations</b>			
Impact S&S#5: Train Accidents	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#6: Motor Vehicle, Pedestrian, and Bicycle Accidents Associated with High-Speed Rail Operations	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#7: High-Speed Rail Accidents Associated with Seismic Events	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#8: Risk of Fire	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#9: Increased Response Times for Fire, Rescue, and Emergency Services from Permanent Road Closures	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#10: Increased Response Times for Fire, Rescue, and Emergency Services Associated with Access to Elevated Track and Tunnels	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#11: Need for Expansion of Existing Fire, Rescue, and Emergency Services Facilities	Significant	S&S-MM#1 TRAN-MM#1 TRAN-MM#2	Less than Significant
Impact S&S#12: Accident Risks to Airports, Private Airstrips, and Heliports	Less than Significant	No mitigation measures are required	Not Applicable

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact S&S#13: Hazards to the High-Speed Rail from Nearby Facilities	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#14: Hazards to Residences from High-Speed Rail Derailment	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#15: Safety Impacts on Schools	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S#16: Hazards to High-Speed Rail Passengers and Employees from Extreme Weather Conditions	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S #17: Hazards to High-Speed Rail Passengers and Employees from Winds	Less than Significant	No mitigation measures are required	Not Applicable
Impact S&S #18: Criminal Activity and Emergencies Aboard Trains and at Stations, Right-of-Way, and Facilities	Less than Significant	No mitigation measures are required	Not Applicable

HSR = high-speed rail