

3.10 Hazardous Materials and Wastes

3.10.1 Introduction

This section describes the regulatory setting and affected environment related to hazardous materials and wastes; identifies impacts that could arise due to implementation of each of the six Build Alternatives considered; and presents mitigation measures to avoid, minimize, or reduce impacts on human health and the environment.

The history of land use and urban development is key to understanding the potential to encounter contamination related to hazardous materials and wastes because particular types of current or previous land uses (such as industrial and industrial/aerospace) tend to pose specific contamination concerns. Regional geology, hydrology, and development history are also crucial factors regarding the potential to encounter hazardous materials and wastes from nearby sources.

The following resource sections in this Palmdale to Burbank Project Section Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) provide additional information related to hazardous materials and wastes:

- Section 3.6, Public Utilities and Energy, discusses oil and natural gas pipelines that traverse all six Build Alternatives
- Section 3.8, Hydrology and Water Resources, contains additional information about physical setting of contamination from nearby sources
- Section 3.9, Geology, Soils, Seismicity, and Paleontology, contains additional information about the physical setting of contamination from nearby sources
- Section 3.11, Safety and Security, discusses emergency response
- Section 3.13, Station Planning, Land Use, and Development, discusses current land use
- Section 3.17, Cultural Resources, discusses historical land use

In addition, the following appendices and technical reports provide more detailed information:

- *Palmdale to Burbank Project Section Hazardous Materials and Wastes Technical Report* (California High-Speed Rail Authority [Authority] 2019) provides more detailed information.
- Appendix 2-H, Regional and Local Policy Consistency Analysis, provides a table that lists the hazardous materials and waste goals and policies applicable to the Palmdale to Burbank Project Section and notes the Build Alternatives' consistency or inconsistency with each.
- Appendix 2-E, Impact Avoidance and Minimization Features (IAMF), lists IAMFs included as applicable in each of the Build Alternatives for purposes of the environmental impact analysis.
- Appendix 3.1-B, United States Forest Service (USFS) Policy Consistency Analysis, assesses the consistency of the Palmdale to Burbank Project Section with applicable laws, regulations, plans, and policies governing proposed uses and activities within the Angeles National Forest (ANF) and the San Gabriel Mountains National Monument (SGMNM).
- Appendix 3.10-A, Hazardous Materials and Wastes Figures, includes all figures referenced herein.

Hazardous Materials and Wastes

Exposure to hazardous materials on construction sites can adversely affect worker, resident, and ecosystem health. Therefore, regulations require evaluation of the potential for rail projects to affect or be affected by hazardous materials sites. Encountering hazardous materials during construction is costly and can affect a project's overall cost-effectiveness.

During stakeholder outreach efforts, commenters expressed concern about the following issues pertaining to hazardous materials and wastes:

- Project impacts on oil fields and wells, and plans for cleanup in case of oil release due to project construction (addressed in Section 3.10.5.4 and Section 3.10.6.3)
- The public potential exposure to regular pesticide use for track right-of-way maintenance (addressed in Section 3.10.5.4 and Section 3.10.6.3)

3.10.2 Laws, Regulations, and Orders

3.10.2.1 Federal

Procedures for Considering Environmental Impacts (64 Federal Register 28545)

These Federal Railroad Administration procedures state that an EIS should consider possible impacts on public safety, including impacts related to hazardous materials.

Resource Conservation and Recovery Act (42 United States Code [U.S.C.] 6901 et seq.)

The Resource Conservation and Recovery Act (RCRA) regulates the identification, generation, transportation, storage, treatment, and disposal of solid and hazardous materials and hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 et seq.)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulates former and newly discovered uncontrolled waste disposal and spill sites. CERCLA established the National Priorities List of contaminated sites and the “Superfund” cleanup program.

Clean Air Act (42 U.S.C. 7401 et seq.)

The Clean Air Act protects the public from exposure to airborne contaminants known to be hazardous to human health. Under the Clean Air Act, the United States Environmental Protection Agency (USEPA) established National Emission Standards for Hazardous Air Pollutants, including asbestos.

Clean Water Act, Section 402(p) (33 U.S.C. 1342(p))

The Clean Water Act regulates discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater.

Safe Drinking Water Act (42 U.S.C. 300(f) et seq.)

The Safe Drinking Water Act regulates discharges of pollutants to underground aquifers and establishes standards for drinking water quality. Section 1424(e) of the Safe Drinking Water Act also authorizes the Sole Source Aquifer Protection Program. The Sole Source Aquifer designation is a tool to protect drinking water supplies in areas where there are few or no alternative sources to the groundwater resource and where, if contamination occurred, using an alternative source would be extremely expensive. Proposed projects receiving federal funds are subject to USEPA review to ensure that they do not endanger the water source.

Surface Mining Control and Reclamation Act (30 U.S.C. 1201–1328; 91 Stat. 445)

The Surface Mining Control and Reclamation Act establishes a program for the regulation for surface mining activities and the reclamation of coal-mined lands, under the administration of the Office of Surface Mining, Reclamation and Enforcement, in the Department of the Interior.

Toxic Substances Control Act (15 U.S.C. 2601 et seq.)

The Toxic Substances Control Act regulates manufacturing, inventory, and disposition of industrial chemicals including hazardous materials.

Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. 136 and 40 Code of Federal Regulations [C.F.R.] Parts 152 to 171)

The Federal Insecticide, Fungicide, and Rodenticide Act regulates the manufacturing, distribution, sale, and use of pesticides (USEPA 2020).

Hazardous Materials Transportation Act (49 U.S.C. Section 5100 et seq. and 49 C.F.R. Parts 101, 106, 107, and 171–180)

The Hazardous Materials Transportation Act regulates the transport of hazardous materials by motor vehicles, marine vessels, trains, and aircraft. It establishes procedures and policies on the proper handling of hazardous materials, requires material designations and labeling during transport, establishes packaging requirements, and establishes operational rules that govern the transportation process from pick up to delivery.

Hazardous Materials Transportation Uniform Safety Act of 1990 (Public Law 101-615)

The Hazardous Materials Transportation Uniform Safety Act regulates the safe transport of hazardous material in intrastate, interstate, and foreign commerce. The statute includes provisions to encourage uniformity between different state and local highway routing regulations, to develop criteria for the issuance of federal permits to motor carriers of hazardous materials, and to regulate the transport of radioactive materials.

Emergency Planning and Community Right to Know Act (42 U.S.C. 11001 et seq. and 40 C.F.R. Part 350.1 et seq. and Appendix A to Part 355)

The Emergency Planning and Community Right to Know Act regulates facilities that use hazardous materials in quantities that require reporting to emergency response officials. Appendix A, List of Extremely Hazardous Substances and Their Threshold Planning Quantities, to Part 355 includes lists extremely hazardous materials and establishes thresholds for their use.

Federal Compliance with Pollution Control (Executive Order 12088)

U.S. Presidential Executive Order 12088 requires federal agencies to take necessary actions to prevent, control, and abate environmental pollution from federal facilities and activities controlled by federal agencies.

Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions (40 C.F.R. Part 761)

This regulation outlines testing, spill-containment procedure, transportation, and disposal requirements for equipment containing polychlorinated biphenyls (PCB).

Angeles National Forest Land Management Plan

The *Angeles National Forest Land Management Plan* (USFS 2006) is designed to protect existing resources within the ANF. This plan includes Strategy WAT 3 – Hazardous Materials, which requires coordination with federal, tribal, state, city, and county agencies as well as local landowners to develop emergency response guidelines for hazardous spills on National Forest System land or on adjacent land that could affect sensitive fish and amphibian habitat.

United States Forest Service Authorities

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

3.10.2.2 State

Well Safety Devices for Critical Wells (California Code of Regulations, tit. 14, Section 1724.3)

This regulation governs safety devices required on “critical wells” within 100 feet of an operating railway.

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

The regulations within Article 6 set forth the performance standards and the minimum substantive requirements for landfill gas monitoring and control as it relates to active solid waste disposal sites, and to proper closure, post-closure maintenance, and ultimate reuse of solid waste disposal sites to ensure that public health and safety and the environment are protected from pollution resulting from the disposal of solid waste.

Closure and Post-Closure Maintenance of Landfills (California Code of Regulations, tit. 27, Subchapter 5)

This regulation provides post-closure maintenance guidelines, including requirements for an emergency response plan and site security. It regulates post-closure land use, requiring protection of public health and safety and the built environment as well as prevention of gas explosions. Construction on the site must maintain the integrity of the final cover, drainage and erosion control systems, and gas monitoring and control systems. Post-closure land use within 1,000 feet of a landfill site must be approved by the local enforcement agency.

California Public Resources Code Section 21151.4

This code requires the lead state agency for the environmental review process to consult with any school district with jurisdiction over a school within 0.25 mile of a proposed project. The consultation should address impacts on the school if the project might reasonably be anticipated to emit hazardous air pollutants or handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.

Porter-Cologne Water Quality Act (California Water Code Section 13000 et seq.)

The Porter-Cologne Water Quality Control Act regulates water quality through the State Water Resources Control Board and Regional Water Quality Control Boards, including oversight of water monitoring and contamination cleanup and abatement.

Hazardous Materials Release Response Plans and Inventory Law (California Health and Safety Code Section 25500 et seq.)

This section of the California Health and Safety Code requires facilities using hazardous materials to prepare Hazardous Materials Business Plans.

Safe Drinking Water and Toxic Enforcement Act (Proposition 65, California Health and Safety Code, Section 25249.5 et seq.)

The Safe Drinking Water and Toxic Enforcement Act, similar to the Safe Drinking Water Act and Clean Water Act on the federal level, regulates the discharge of contaminants to groundwater.

Cortese List Statute (California Government Code, Section 65962.5)

This regulation requires the Department of Toxic Substances Control to compile and maintain lists of potentially contaminated sites located throughout the state (including the Hazardous Waste and Substances Sites List).

Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.)

The Hazardous Waste Control Act, similar to the federal RCRA, regulates the identification, generation, transportation, storage, and disposal of materials deemed hazardous by the State of California.

Certified Unified Program Agencies

Senate Bill 1082, passed in 1993, created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six state environmental and emergency response programs. The California Environmental Protection Agency and other state agencies set the standards for their programs, and local governments implement the standards. These local implementing agencies are called Certified Unified Program Agencies (CUPA). The CUPA regulates and oversees the following at the county level:

- Hazardous materials business plans
- California accidental release prevention plans or federal risk management plans
- The operation of underground and aboveground storage tanks
- Universal waste and hazardous waste generators/handlers
- On-site hazardous waste treatment
- Inspections, permitting, and enforcement
- Proposition 65 reporting
- Emergency response

3.10.2.3 Regional and Local

Los Angeles County Fire Department

The Health Hazardous Materials Division of the Los Angeles County Fire Department administers the Los Angeles County CUPA, which has jurisdiction in incorporated and unincorporated areas within the county unless a city is a participating agency or a separate CUPA. In addition, the Emergency Operations Section of the Los Angeles County Fire Department is responsible for providing emergency services to the public relating to hazardous material releases. The Emergency Operations Section provides materials categorization, advising, entry team participation, and evacuation and re-occupancy determinations.

Los Angeles County Department of Public Works

The Los Angeles County Department of Public Works is a Unified Program Agency and a participating agency in the Los Angeles County CUPA. The agency requires permits for the installation of underground storage tanks. Sites with existing underground storage tanks must have a current Unified Program Facility Permit.

Los Angeles County Department of Public Health, Division of Environmental Health

The Los Angeles County Department of Public Health, Division of Environmental Health, is responsible for protecting the public and the environment from food-related hazards, water pollution, soil and groundwater contamination, vector-borne diseases, and hazardous chemicals. The Division of Environmental Health carries out this responsibility by educating the public, providing consultation services, collaborating with other public agencies, issuing permits, conducting investigations and inspections, and deploying the Emergency Response Team to hazardous materials spills, accidents, and emergencies during nonbusiness hours.

Los Angeles County Local Enforcement Agency for Solid Waste

The Los Angeles County Local Enforcement Agency has three roles in solid-waste management:

- Protect the health, safety, and well-being of the public
- Preserve and improve the quality of the environment by ensuring proper storage and disposal of solid waste, minimizing the presence of disease-transmitting organisms related to solid-waste handling and disposal methods
- Respond to public complaints relating to the accumulation, storage, collection, processing, and disposal of solid waste in Los Angeles County

Beyond the statewide regulations that the CUPAs administer, policies and regulations found in numerous local and regional plans also address hazardous materials and wastes. Policies and regulations are intended as guides for the appropriate use of potentially hazardous materials, the cleanup of contaminated sites, and the preparation of emergency response plans.

Local General Plans

Table 3.10-1 provides an overview of the regional and local planning documents that include goals and objectives related to hazardous materials and wastes.

Table 3.10-1 Local Plans and Policies

Jurisdiction	Relevant Policy Document
Los Angeles County	Santa Clarita Valley Area Plan (Los Angeles County 2012)
City of Palmdale	City of Palmdale General Plan (City of Palmdale 1993)
City of Burbank	Burbank 2035 General Plan (City of Burbank 2013)

Source: Los Angeles County 2012, City of Palmdale 1993, City of Burbank 2013

3.10.3 Consistency with Plans and Laws

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

The Authority, as the lead state and federal agency proposing to construct and operate the California High-Speed Rail (HSR) System, is required to comply with all federal and state laws and regulations and to secure all applicable federal and state permits prior to initiating construction on the selected Build Alternative. Therefore, there would be no inconsistencies between the six Build Alternatives and these federal and state laws and regulations.

The Authority is a state agency and therefore is not required to comply with local land use and zoning regulations; however, it has endeavored to design and construct the HSR project so that it is consistent with land use and zoning regulations. For example, the proposed Build Alternatives would incorporate IAMFs that require the contractor to prepare a construction management plan (CMP) to demonstrate how construction impacts will be maintained below applicable standards.

Appendix 2-H provides a Regional and Local Policy Consistency table, which lists the hazardous materials and wastes goals and policies applicable to the Palmdale to Burbank Project Section and notes the Build Alternatives' consistency or inconsistency with each. The Authority reviewed three plans. Each of the six Build Alternatives are consistent with all eight policies related to hazardous materials and wastes.

3.10.4 Methods for Evaluating Impacts

The evaluation of impacts related to hazardous materials and waste is a requirement of the National Environmental Policy Act (NEPA) and CEQA. The following sections summarize the resource study areas (RSA) and the methods used to analyze hazardous materials and waste impacts. For this assessment, hazardous materials are defined as any materials that, if released, pose a substantial, present, or potential hazard to human health and safety or to the environment because of quantity, concentration, or physical and chemical characteristics. Hazardous materials include but are not limited to hazardous substances, hazardous wastes, and any material that a handler or the administering regulatory agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment (California Health and Safety Code, Section 25501[o]). Although

often treated separately from hazardous materials, petroleum products (including crude oil and refined products such as fuels and lubricants) and natural gas are considered in this analysis because they might also pose a potential hazard to human health and safety if released into the environment (further discussed in Section 3.11, Safety and Security, of this Draft EIR/EIS).

Hazardous wastes include residues, discards, byproducts, contaminated products, or similar substances that exceed regulatory thresholds for toxicity, ignitability, corrosivity, or reactivity. Federal and state regulations identify specific wastes by name that the USEPA has determined are hazardous and has designated them as “listed wastes.”

This analysis does not provide parcel-level (Phase I/Phase II) field assessments. However, prior to construction, a Phase I assessment will be conducted for all parcels that would require temporary or permanent acquisition. A Phase I evaluation would entail review of hazard records, visual inspections, and interviews of responsible parties to gather information on current and past site conditions and determine the likelihood of parcel-level contamination.

Areas requiring excavation, trenching, or other subsurface work would require further, parcel-by-parcel assessment of potential hazardous materials contamination after selection of the Preferred Alternative. A Phase II evaluation is a detailed hazardous materials assessment that would entail site sampling and laboratory testing to determine if there were environmental hazards currently on the site. The Authority would conduct a Phase II evaluation of individual parcels, potentially subject to HSR property transfer or acquisition after completion of the NEPA/CEQA environmental review process, during final design and implementation of the selected Preferred Alternative. Phase II evaluations would only be performed for parcels identified by Phase I evaluations as having recognized environmental conditions.

3.10.4.1 Definition of Resource Study Areas

As defined in Section 3.1, Introduction, RSAs are the geographic boundaries in which the environmental investigations specific to each resource were conducted. The RSA consists of the entire Build Alternative footprint, including trackway, stations, and ancillary facilities, with buffer distances to identify nearby hazardous material concerns. Table 3.10-2 outlines the specific RSAs for the various types of hazard and hazardous materials considered in this section. The RSAs established in Table 3.10-2 are based on distances at which each of the six Build Alternatives could affect resources or at which listed hazards could pose risks to each of the six Build Alternatives, either through migration of hazardous materials into the Build Alternative footprint, landfill gas hazards, or other means.

Table 3.10-2 Hazards and Hazardous Materials Resource Study Areas

Hazard/Hazardous Material or Sensitive Site	Resource Study Area Boundaries
PEC sites ¹	1-mile buffer from alignment centerline on both sides of alignment
Potentially Hazardous Building Materials	150-foot buffer from alignment footprint
Aerially Deposited Lead	150-foot buffer from alignment footprint
Railway Corridors	150-foot buffer from alignment footprint
Naturally Occurring Asbestos	150-foot buffer from alignment footprint
Pesticides	150-foot buffer from alignment footprint
Landfills	0.25-mile buffer from alignment footprint
Oil and Natural Gas Wells/Fields	150-foot buffer from alignment footprint
Existing Educational Facilities ²	0.25-mile buffer from alignment footprint

¹ The PEC designation applies to specific sites where there is a possibility of an existing, past, or potential hazardous materials release into soil, groundwater, or surface water.

² Existing educational facilities serve individuals who are particularly sensitive to hazardous materials.

PEC = potential environmental concern

Potential Environmental Concern Site Identification

Potential environmental concern (PEC) sites are where the possibility of a past or current release or the threat of a release of hazardous materials or waste exists. PEC sites are defined using the definitions for hazardous waste, material, and substances provided in the California Department of Transportation (Caltrans) initial site assessment guidance document (Caltrans 2006a) and the California Office of State, *Project Development Procedures and Quality Improvement in Division of Design, Project Development Procedures Manual*, Chapter 18 (Caltrans 2006b).

Environmental Data Resources (EDR) maintains an extensive database of known and potentially hazardous waste sites, properties, and facilities currently under investigation for potential environmental violations, and sites storing or using hazardous materials. Please refer to Appendices A, B, and C of the *Palmdale to Burbank Project Section Hazardous Materials and Wastes Technical Report* (Authority 2019) for a complete list of databases reviewed by EDR for the six Build Alternatives.

Sites listed in the EDR database report that were not identified as release sites (for example, a site listed as occupied by a hazardous waste hauler but not as having been the site of a hazardous materials release) were not considered to be potentially affected, based on reasonably available information. Orphan sites are those for which there is inadequate or inaccurate information to allow for the sites to be geocoded and mapped at their appropriate location, and include potentially contaminated sites. Orphan sites were evaluated to the extent practicable; however, they were not included in the EDR analysis due to the lack of address information.

This analysis categorizes PEC sites as low, medium, or high priority, based on factors including affected media, contaminants of concern, cleanup status, and proximity to a Build Alternative (Authority 2019).¹ Table 3.10-3 outlines the ranking criteria used to determine PEC site priority.

¹ For the purposes of this analysis, low-priority PEC sites pose a negligible threat to the Build Alternatives and are not discussed. Appendix G of the *Palmdale to Burbank Project Section Hazardous Materials and Wastes Technical Report* (Authority 2019) summarizes low-priority PEC sites within the PEC site RSAs.

Table 3.10-3 Potential Environmental Concern Ranking Criteria

PEC Rank	Ranking Criteria
High	<ul style="list-style-type: none"> ▪ Open cases involving a hazardous materials or waste release within 0.1 mile of the alignment centerline ▪ Open or closed cases that have affected groundwater below the alignment centerline ▪ Landfills and mines within 0.25 mile of the alignment centerline ▪ Sites within 0.1 mile of the alignment centerline listed on the following databases: Formerly Used Defense Sites, California Bond Expenditure Plan, Calsites, Cortese List, and California Response
Medium	<ul style="list-style-type: none"> ▪ Closed cases involving a hazardous materials or waste release within 0.1 mile of the alignment centerline ▪ Closed cases between 0.1 mile and 0.25 mile of the alignment centerline where groundwater has been affected ▪ Open cases between 0.1 mile and 0.5 mile of the alignment centerline ▪ Landfills and mines between 0.25 and 0.5 mile of the alignment centerline ▪ Transfer facilities and waste haulers within 0.1 mile of the alignment centerline ▪ Reported hazardous material releases within 0.1 mile of the alignment centerline that might have residual on-site contamination ▪ Sites between 0.1 mile and 1.0 mile of the alignment centerline listed on the following databases: Formerly Used Defense Sites, California Bond Expenditure Plan, Calsites, Cortese List, California Response, State Active Underground Storage Tank Facilities, California Facility Inventory Database of Historical Active and Inactive Underground Storage Tank Locations, State Hazardous Substance Storage Container Database of Historic Underground Storage Tank Sites, California Drycleaners, EDR Historical Automotive Repair Facilities, EDR Historical Drycleaner Facilities
Low	<ul style="list-style-type: none"> ▪ Closed cases involving a hazardous materials or waste release more than 0.1 mile from the alignment centerline ▪ Landfills and mines more than 0.5 mile from the alignment centerline ▪ Transfer facilities and waste haulers more than 0.1 mile from the alignment centerline ▪ Sites investigated as part of Los Angeles Regional Water Quality Control Board Aquifer Investigation that were not determined to contribute to regional groundwater contamination ▪ Reported hazardous material releases at any distance that do not appear to have the potential for residual contamination at the site

Source: Authority, 2019

EDR = Environmental Data Resources

PEC = potential environmental concern

General Environmental Concerns

General environmental concerns include lead-based paint (LBP), lead-containing materials (LCM), asbestos-containing materials (ACM), PCBs, aeryally deposited lead (ADL), naturally occurring asbestos, oil/natural gas wells, agricultural use (pesticides/herbicides), and railroads. Sources of information regarding general environmental concerns include the following:

- **Historical Aerial Photos**—Aerial photographs depict general land uses, including agricultural areas where pesticides/herbicides were likely used, and trends over time. Specific elements of operations at a site cannot normally be determined from the photographs. With this limitation in mind, interpretation of historical aerial photographs from 1928 to 2012 delineate land uses within the hazardous materials and wastes RSAs.
- **Historical Topographic Maps**—Topographic maps document the general land uses and trends over time within the RSAs and can help determine the approximate age of structures

and highways. Interpretation of topographic maps from 1898 to 2012 assess land uses within the RSAs. Like aerial photographs, topographic maps do not accurately depict specific elements of site operation.

- **Sanborn Insurance Company Maps**—These maps include detailed information about structures and land uses in urban areas. Interpretation of Sanborn maps from 1910 to 1969 assess the built environment in the Burbank area. Sanborn maps were typically not prepared for remote areas or areas that were undeveloped in the 1960s and earlier.
- **California Department of Conservation**—Published resources from the California Department of Conservation provide information on naturally occurring asbestos and oil/natural gas facilities.

3.10.4.2 Impact Avoidance and Minimization Features

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

The following is a list of IAMFs were incorporated into the hazardous materials and waste analysis:

- **HMW-IAMF#1: Property Acquisition Phase I and Phase II Environmental Site Assessments**—This IAMF describes the Authority’s commitment to conducting Phase I environmental site assessments (ESA) during the right-of-way acquisition phase. The ESA shall be conducted in accordance with standard American Society for Testing and Materials methodologies to characterize each parcel.
- **HMW-IAMF#2: Landfill**—This IAMF describes the Authority’s commitment to ensure that methane protection measures will be implemented. Prior to construction (any ground-disturbing activities), the contractor shall verify to the Authority through preparation of a technical memorandum that methane protection measures will be implemented for all work within 1,000 feet of a landfill, including gas detection systems and personnel training.
- **HMW-IAMF#3: Work Barriers**—This IAMF describes the Authority’s commitment to verify the use of work barriers with the contractor prior to construction through requiring the contractor to prepare a technical memorandum. Nominal design variances, such as the addition of a plastic barrier beneath the ballast material to limit the potential release of volatile subsurface contaminants, may be implemented in conjunction with site investigation and remediation.
- **HMW-IAMF#4: Undocumented Contamination**—This IAMF describes the Authority’s commitment to address provisions related to the disturbance of undocumented contamination through coordinating with the contractor to prepare a construction management plan (CMP) prior to construction.
- **HMW-IAMF#5: Demolition**—This IAMF describes the Authority’s commitment to ensure the safe dismantling and removal of building components and debris through requiring the contractor to prepare demolition plans, including a plan for lead and asbestos abatement, prior to construction that involves demolition.
- **HMW-IAMF#6: Spill Prevention**—This IAMF describes the Authority’s commitment to address spill prevention through requiring the contractor to prepare a CMP prior to construction (any ground-disturbing activities).
- **HMW-IAMF#7: Transport of Materials**—This IAMF describes the Authority’s commitment to comply with applicable federal and state regulations, such as RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act, during construction.
- **HMW-IAMF#8: Permit Conditions**—This IAMF describes the Authority’s commitment to comply with the State Water Resources Control Board Construction Clean Water Act Section

- 402 General Permit conditions and requirements for transport, labeling, containment, cover, and other best management practices (BMP) for storage of hazardous materials during construction.
- **HMW-IAMF#9:** Environmental Management System—This IAMF describes the Authority’s commitment, to the extent feasible, to identifying, avoiding, and minimizing hazardous substances in the material selection process for construction, operations, and maintenance of the California HSR System.
 - **HMW-IAMF#10:** Hazardous Materials Plans—This IAMF describes the Authority’s commitment to prepare hazardous materials monitoring plans prior to operations and maintenance activities.

In addition to the IAMFs described above, the following IAMFs are applicable to hazardous materials and wastes. Please refer to Volume 2, Appendix 2-E, Project Impact Avoidance and Minimization Features, for full descriptions of each IAMF listed below:

- **GEO-IAMF#3:** Gas Monitoring
- **HYD-IAMF#1:** Stormwater Management
- **HYD-IAMF#4:** Prepare and Implement a Construction Stormwater Pollution Prevention Plan
- **SS-IAMF#4:** Oil and Gas Wells

3.10.4.3 Methods for NEPA and CEQA Impact Analysis

Overview of Impact Analysis

This section describes the sources and methods the Authority used to analyze impacts of each of the six Build Alternatives for hazardous materials and wastes. These methods apply to both NEPA and CEQA analyses unless otherwise indicated. Refer to Section 3.1.4.4, Methods for Evaluating Impacts, for a description of the general framework for evaluating impacts under NEPA and CEQA.

Methods for Gathering Hazardous Materials and Wastes Data

This analysis considers impacts based on the distance of all six Build Alternatives from known hazardous materials and waste sites, which were identified by searching environmental database records, analyzing historical topographic maps and aerial photographs, and reviewing regulatory agency files. These materials provide ample historical and locational context for planning and environmental review. Prior to construction, parcel-level sampling and analysis would further inform necessary reclamation and cleanup procedures. Refer to the *Palmdale to Burbank Project Section Hazardous Materials and Wastes Technical Report* (Authority 2019) for more information regarding the methods, evaluation criteria, and data sources used in this analysis.

Hazardous Material

Hazardous material refers to a substance that, because of its quantity, concentration, or characteristics, would pose a significant hazard to human or environmental safety, if released.

Hazardous Waste

Hazardous waste refers to a substance that qualifies as a “waste” (i.e., is no longer of use and will be disposed) and has a hazardous characteristic (e.g., toxicity, ignitability, reactivity, and/or corrosivity), or that has been specifically listed as hazardous in federal or state law or regulation.

3.10.4.4 Method for Evaluating Impacts under NEPA

Council for Environmental Quality NEPA regulations (40 C.F.R. Parts 1500–1508) provide the basis for evaluating project effects (Section 3.1.5.4). As stated in Section 1508.27 of these regulations, the criteria of context and intensity are considered together when determining the severity of the change introduced by the Palmdale to Burbank Project Section. “Context” is defined as the affected environment in which a proposed project develops. “Intensity” refers to the severity of the effect, which is examined in terms of the type, quality, and sensitivity of the resource involved; location and extent of the effect; duration of the effect (short- or long-term);

and other considerations of context. Beneficial effects are also considered. When no measurable effect exists, no impact is found to occur. For the purposes of NEPA compliance, the same methods used to identify and evaluate impacts under CEQA are applied here.

3.10.4.5 Method for Determining Significance under CEQA

The Authority is using the following thresholds to determine if a significant impact on hazardous materials and wastes would occur as a result of each of the six Build Alternatives. A significant impact is one that would:

- Create a significant hazard to the public or the environment resulting from the routine transport, use, or disposal of hazardous materials
- Create a significant hazard to the public or the environment resulting from reasonably foreseeable upset and accident conditions that involve the release of hazardous materials into the environment
- Be located on a site that is on the Cortese List (or another list that indicates known contamination) if project activities that take place on that site have the potential to create a significant hazard to the public or the environment because of release of hazardous materials or wastes associated with the listed site
- Emit hazardous air pollutants or handle extremely hazardous substances or mixtures containing extremely hazardous substances within 0.25 mile of a school, posing a health and safety hazard to students or employees

Hazards associated with the proximity to airports, interruptions to emergency response, and wildfire are addressed in Section 3.11, Safety and Security.

3.10.5 Affected Environment

This section discusses the affected environment related to hazardous materials and wastes in the RSAs for all six Build Alternatives.

3.10.5.1 Physiography and Regional Setting

All six Build Alternative alignments would cross an area with diverse geologic, hydrologic, and urban histories. Understanding land use and development is crucial to determining the potential for hazardous materials and waste contamination because particular types of land uses tend to pose specific contamination concerns. Additional information related to the regional environmental setting is included in Section 3.8, Hydrology and Water Resources; Section 3.9, Geology, Soils, Seismicity, and Paleontology; and Section 3.13, Station Planning, Land Use, and Development.

The northern terminus of the Palmdale to Burbank Project Section is in the southern portion of the Antelope Valley, which is a broad, closed basin bordered on the north by the Garlock Fault and on the south by the San Andreas Fault. The topography of the Antelope Valley is generally level, with isolated hills rising abruptly from the desert floor. Regionally, the desert floor slopes toward the center of the valley. Continuing south, elevations gradually rise to about 2,620 feet above mean sea level south of the city of Palmdale. Rainfall is very limited in this area and drains into stormwater conveyance areas. Allowable uses of Antelope Valley Groundwater Basin groundwater include municipal, agricultural, industrial, and freshwater replenishment.

South of the Antelope Valley, the hazardous materials and wastes RSAs enter the San Gabriel Mountains, a region that is rising rapidly (in geological terms) because of intense fault activity. Topography throughout the San Gabriel Mountains varies widely but reaches elevations higher than 10,000 feet above mean sea level east of the RSAs. These mountains create a rain shadow effect where the desert climate observed in the northern portion of the RSAs near the city of Palmdale contrasts with the moist coastal climate observed in the southern portion of the RSAs near the city of Burbank. South of the San Gabriel Mountains, the RSAs enter a lowland plain in the San Fernando Valley. The San Gabriel Mountains and San Fernando Valley both contain

multiple fault systems and overlie groundwater basins rated for municipal, industrial, industrial process supply, and agricultural beneficial uses.

3.10.5.2 Development History

The northern portions of the hazardous materials and wastes RSAs include the southern portion of the Antelope Valley. Installation of major rail and road corridors beginning in the late 19th century urbanized the Antelope Valley. Small manufacturing, warehousing, and industrial uses arose adjacent to the railroad, which resulted in nearby commercial and residential uses. Agriculture dominated the economy until the introduction of aerospace businesses to the Antelope Valley in the early 1950s (City of Lancaster 2009). The growth of aerospace businesses into this region can be attributed to the instalment of Edwards Air Force Base, which was established in the early 1930s and is still used today (Global Security, 2016). Historical hazardous material releases in the area are primarily associated with industrial aviation activities, automotive fluid spills, and petrochemical leaks from storage tanks at gasoline stations. Commercial, industrial, and agricultural land uses also contribute to localized contamination.

The relatively rural region between the Antelope Valley and the San Fernando Valley contains a variety of current and historical sources of hazardous materials, including military facilities, landfills, mines, industrial operations, aerospace manufacturing, and automotive businesses. South of the California Aqueduct (Figure 3.10-A-1), the RSAs encompass suburban and rural communities, rail and roadway transportation corridors, and active and historical agricultural production sites throughout the San Gabriel Mountains. This region also contains many oil production operations, mineral resource extraction zones, and military installations.

The southern portion of the RSAs encompass the relatively flat, heavily populated San Fernando Valley. South of the San Gabriel Mountain foothills, historical and ongoing industrial and manufacturing operations have resulted in a variety of contaminant releases in numerous locations in the cities of Los Angeles and Burbank. Most notably, this area encompasses a portion of the San Fernando Valley Superfund Site, where substantial volatile organic compound contamination has been detected in groundwater. Some contaminants can be traced to industries operating in the area as long ago as the 1940s. Many facilities associated with these uses could pose hazardous materials or hazardous waste risks.

3.10.5.3 Specific Potential Environmental Concern Sites

Overview of Potential Environmental Concern Sites

This section identifies and briefly describes PEC sites within the PEC site RSA. Table 3.10-4 summarizes the PEC sites for all six Build Alternatives; these sites are depicted on Figure 3.10-A-1 through Figure 3.10-A-18.² Overall, PEC sites are concentrated in the urbanized city of Palmdale and the San Fernando Valley, where historic commercial and industrial development resulted in widespread contamination. There are few PEC sites within the Build Alternative PEC site RSA in the suburban and undeveloped areas between Palmdale and the San Fernando Valley. The Refined SR14, E1, and E2 Build Alternative PEC site RSAs encompass identical PEC sites in the city of Palmdale. However, between the California Aqueduct and the San Fernando Valley, each Build Alternative PEC site RSA encompasses separate PEC sites with different levels of priorities and of different sizes. Many PEC sites near the proposed Burbank Airport Station are within the PEC site RSA for multiple Build Alternatives. Although they would encounter several additional sites, the SR14A, E1A, and E2A Build

Determining PEC Risks

Factors considered when designating high- and medium-priority PEC sites include:

- affected media (e.g., soil, groundwater, soil vapor)
- contaminants of concern
- cleanup status
- proximity to the HSR footprint

² Appendix 3.10-A in Volume 2 of this EIR/EIS includes all the figures identified in this resource section. In addition, refer to the *Palmdale to Burbank Hazardous Materials and Wastes Technical Report* (Authority 2019) for a detailed description of PEC sites within the PEC site RSA.

Alternatives would encounter PEC sites in similar areas and quantities compared to the Refined SR14, E1, and E2 Build Alternatives, respectively. The SR14A, E1A, and E2A Build Alternatives would not encounter substantially greater quantities compared to the Refined SR14, E1, and E2 Build Alternatives, respectively. Discussion of PEC sites within the ANF can be found in Section 3.10.10.

Table 3.10-4 Potential Environmental Concern Sites within the PEC Study Area

Build Alternative	High-Priority PEC Sites	Medium-Priority PEC Sites
Refined SR14	26	76
SR14A	26	82
E1	24	74
E1A	24	77
E2	21	38
E2A	20	42

Source: Authority, 2019

Historical development in Los Angeles County has resulted in numerous reported contaminant releases into soil, soil vapor, groundwater, and sewer/stormwater infrastructure. Most PEC sites throughout the PEC site RSAs fall into one of the following categories:

- Sites with evidence of hazardous releases resulting from spills, unauthorized releases, leaking storage tanks, or previous uses
- Solid waste landfill, transfer, processing, disposal, or assessment sites
- Sites associated with historical or ongoing investigations related to previous uses where further evaluation is required to determine potential contaminants and risks

PEC sites within the city of Palmdale are generally associated with industrial aviation activities, automotive fluid spills, and petrochemical leaks from storage tanks at gasoline stations. Mine sites and former military installations account for most of the PEC sites in the rural areas between Palmdale and the urbanized San Fernando Valley. South of the San Gabriel Mountain foothills, historical and ongoing industrial and manufacturing operations have resulted in a variety of contaminant releases throughout the cities of Los Angeles and Burbank within the PEC site RSAs. Most notably, this area encompasses a portion of the San Fernando Valley Superfund Site, described below. The *Palmdale to Burbank Project Section Hazardous Materials and Wastes Technical Report* (Authority 2019) provides additional detail on PEC sites within the PEC site RSAs, including site addresses, former site uses, distance from each of the six Build Alternatives, suspected contamination, and cleanup status. Reported contaminants within the PEC sites consist of:

- Petrochemicals (e.g., diesel, gasoline, automotive fluids, aviation fuel, benzene, toluene, ethylbenzene, xylene)
- Volatile/semi-volatile organic compounds, including solvents
- Heavy metals (e.g., chromium, nickel, copper, arsenic, lead, vanadium)
- Building materials (e.g., asphalt, paint thinner, PCBs, ACM)
- Polycyclic aromatic hydrocarbons
- Propellants, explosives, and pyrotechnics
- Acidic or corrosive substances
- Cyanide

- Chlorofluorocarbons
- Landfill gases (e.g., methane)
- Unreported or unspecified contaminants

San Fernando Valley Superfund Site

As shown on Figure 3.10-A-19, the San Fernando Valley contains four Superfund areas, known collectively as the San Fernando Valley Superfund Site. Past and present industrial activities in the San Fernando Valley released volatile organic compounds into the San Fernando Valley Groundwater Basin, which now serves as an important water source for the cities of Burbank, Glendale, and San Fernando after treatment to remove contaminants.

The primary contaminants of concern are trichloroethylene and tetrachloroethylene. These compounds have been and/or are being used in many San Fernando Valley industries, such as aeronautical, automotive, dry cleaning, and metal plating. Long-term improper use, storage, and disposal practices have resulted in widespread groundwater contamination.

In 1986, the USEPA designated four subregions of the San Fernando Valley Superfund Site as areas of regional groundwater contamination. These sites are listed below from north to south:

- **Area #1:** The North Hollywood Site covers 9,336 acres in the eastern part of the San Fernando Valley. The site has been divided into the North Hollywood Operable Unit and the Burbank Operable Unit.
- **Area #2:** The Crystal Springs Site covers 3,975 acres southeast of the North Hollywood National Priorities List site, within the cities of Glendale and Los Angeles.
- **Area #3:** The Verdugo Site covers 2,673 acres in the eastern part of the San Fernando Valley, located within and adjacent to La Crescenta in the Verdugo Mountains.
- **Area #4:** The Pollock Site covers 1,635 acres in the southeastern part of the San Fernando Valley, located within and adjacent to the cities of Los Angeles and Glendale.

Three of the four areas (#1, #2, and #4) include water well fields that supply water to the cities of Los Angeles, Burbank, and Glendale. There is a large, continuous plume of groundwater contamination that runs through these three sites. The remaining area (#3) lies in a geographically separate area of the eastern San Fernando Valley.

Federal, state, and local agencies have been conducting investigations and cleanup of contaminated groundwater in the San Fernando Valley since contamination was discovered in 1979. These activities involve measuring the extent of contamination, developing and implementing cleanup remedies, and identifying responsible parties.

The PEC site RSA for each of the six Build Alternatives encompasses portions of Area #1 (Figure 3.10-A-18)) but does not encompass Area #2 through Area #4. Several of the PEC sites overlie this Superfund Site and may be associated with historic or current industrial facilities that contributed to this contamination.³

³ The EDR database identified PEC sites within the Build Alternative PEC site RSA as potential contributors to the San Fernando Valley Superfund site. HMW-IAMF#1 would require PEC site investigation and remediation throughout the property acquisition and construction phases of each of the six Build Alternatives. During the right-of-way acquisition phase, a Phase I ESA would be conducted to identify parcels that require a Phase II ESA (e.g., soil, groundwater, soil vapor subsurface investigations). If the Phase II ESA concluded the site was affected, remediation or corrective action would be conducted in compliance with applicable federal and state regulations.

3.10.5.4 General Environmental Concerns

General environmental concerns consist of hazards that could be detrimental to both sensitive receptors and to the environment. The hazards discussed include both hazardous materials and hazardous places that the Build Alternatives would encounter along the HSR alignment.

- **Lead Based Paint/Lead Containing Materials**—Lead was a common construction material until 1978, when it was banned to minimize cases of lead poisoning. Demolition of structures built prior to 1978 could entail the handling and removal of LBP and LCM.
- **Aerially Deposited Lead**—Until California phased out the use of leaded fuel in the 1990s, exhaust fumes from vehicles using leaded gasoline fuel would settle and accumulate in soils within roadway corridors. Disturbance to these soils could increase lead poisoning risks. All six Build Alternative ADL RSAs contain roadways constructed during the early and mid-1900s where shallow soils may contain ADL.
- **Asbestos Containing Material**—Asbestos is a mineral fiber used in manufactured goods and building construction materials until the 1980s. Exposure to asbestos fibers is primarily through inhalation resulting from disturbance of ACM during demolition of structures built prior to 1980.
- **Naturally Occurring Asbestos**—Asbestos occurs naturally within certain rock formations in California. If disturbed, naturally occurring asbestos can become airborne and pose a health risk. The six Build Alternatives would not be within 10 miles of ultramafic rocks, which contain asbestos. Because this type of rock does not occur in the naturally occurring asbestos RSA, this section does not discuss this potential hazard further.
- **Polychlorinated Biphenyls**—Transformers, capacitors, and other electrical equipment used PCBs as coolants and lubricants from 1929 to 1977. In 1979, the USEPA banned PCB manufacture; however, older PCB containing products and equipment (such as electrical transformers, coatings, and pigments) could be present in the PEC site RSA.
- **Railway Corridors**—Historical aerial photographs indicate that all six Build Alternatives would be near historical railroad corridors near Lake Palmdale where shallow soils may contain residual contaminants, including petroleum hydrocarbons (oil, diesel, gasoline) from leaks or spills, herbicides associated with weed suppression, and metals (arsenic and lead).
- **Pesticides**—Agricultural uses of pesticides prevent, destroy, repel, or mitigate pests. Pesticides can persist in soil and/or groundwater over time. Exposure to pesticides represents a health concern. According to land use data and historical aerial photographs, portions of all six Build Alternative alignments would pass through lands actively or historically used for agricultural purposes near the Antelope Valley and the San Fernando Valley. Therefore, residual pesticides could be present within the pesticide RSA.
- **Landfills**—There are two primary hazards associated with landfills: explosion and asphyxiation, which occur when gases emanating from landfilled materials accumulate in enclosed spaces (Agency for Toxic Substances and Disease Registry 2001). Landfills within 0.25 mile of each of the six Build Alternative alignment centerlines are concentrated primarily in the urban areas of Palmdale and the San Fernando Valley. Depending on the adit options, the Refined SR14 Build Alternative landfill RSA encompasses 21 to 25 existing or historic

Lead

Lead is a toxicant that affects multiple body systems (including the brain) and is particularly harmful to children.

Asbestos

Asbestos is a known carcinogen that can accumulate in the body and cause respiratory disorders.

PCBs

Polychlorinated biphenyls cause cancer and other serious non-cancer health effects.

Landfill Hazards

Methane and carbon dioxide are the majority constituent substances in landfill gases. Although landfill gas includes several other substances, they typically do not occur at concentrations high enough to pose a health or safety risk.

Oil/Gas Hazards

Hazards associated with oil and gas facilities include ignition of flammable vapors or liquids (e.g., petroleum) and release of petroleum product into the environment.

landfill sites, similar to the E1 Build Alternative landfill RSA, which would encounter an identical number of landfill sites, but more than the E2 Build Alternative landfill RSA (21 landfill sites) (Figure 3.10-A-1 through Figure 3.10-A-19 and Table 3.10-5).⁴ The SR14A, E1A, and E2A Build Alternatives would also be constructed within 0.25 mile of landfills. Such impacts would be identical to those resulting from the implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively.

- Oil and Gas Wells**—The Refined SR14, E1, and E2 Build Alternative alignments would pass through an active oil-producing region. As shown on Figure 3.10-A-1 through Figure 3.10-A-18, the Refined SR14 and E1 Build Alternative oil and natural gas wells/field RSAs each encompass one plugged oil/gas dry hole north of the neighborhood of Pacoima in the city of Los Angeles, and the E2 Build Alternative oil and natural gas wells/field RSA contains two oil and gas production wells: one plugged and one buried near Little Tujunga Canyon Road within the ANF. The Refined SR14, E1, and E2 oil and natural gas wells/field RSAs avoid known oil/natural gas fields. The SR14A, E1A, and E2A Build Alternative alignments would also pass through an active oil-producing region and within 150 feet of plugged oil/gas wells. Such impacts would be identical to those resulting from the implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively.

Table 3.10-5 Landfills within the Resource Study Areas

Build Alternative	Landfills within 0.25 Mile of the Alignment Centerline
Refined SR14	21 – 25
SR14A	25 – 26
E1	21 – 25
E1A	25 – 26
E2	16
E2A	16

Source: Authority, 2019

3.10.5.5 Educational Facilities

Colleges, high schools, elementary schools, preschools, and nursery schools are used by individuals particularly sensitive to hazardous materials. For this reason, additional protective regulations apply to projects that could use or disturb potentially hazardous materials at or near educational facilities. Schools within the educational facility RSA for each of the six Build Alternatives are primarily concentrated within the Palmdale and San Fernando Valley. Depending on the selected adit and intermediate window options,⁵ the Refined SR14 Build Alternative educational facility RSA encompasses 16 to 23 educational facilities, the E1 Build Alternative educational facility RSA encompasses 9 educational facilities, and the E2 Build Alternative educational facility RSA encompasses 6 educational facilities (mapped in Figure 3.10-A-1 through Figure 3.10-A-18 and summarized in Table 3.10-6).⁶ The SR14A, E1A, and E2A Build Alternatives would also be constructed within 0.25 mile of educational facilities. The SR14A Build Alternative would be constructed within 0.25 mile of three additional schools in the Acton area (18 to 26 total) compared to the Refined SR14 Build Alternative. However, the SR14A Build Alternative alignment would be underground in a tunnel in the vicinity of these additional schools. Except for these schools, such impacts would be the same as those resulting from the implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively.

⁴The EDR database indicates that many landfill facilities in the RSA are designated as high or medium PEC sites.

⁵ Refer to Chapter 2, Alternatives, for a discussion of adit and intermediate window facilities.

⁶ Some educational facilities are listed as separate or combined institutions in the resource reference databases. As such, specific quantities of educational facilities may vary slightly throughout this analysis.

Table 3.10-6 Educational Facilities within the Resource Study Areas

School	Build Alternative Educational Facility RSA					
	Refined SR14	SR14A	E1	E1A	E2	E2A
Antelope Valley Regional Occupational Program/South Antelope Valley Adult School	X	X	X	X	X	X
Inspire Charter Academy	N/A	X	N/A	N/A	N/A	N/A
High Desert Middle School	N/A	X	N/A	X	N/A	X
Acton-Agua Dulce Unified School District	X	X	X	X	X	X
Community Collaborative Charter/SCALE Leadership Academy	X	X	X	X	X	X
Vasquez High School	X	X	N/A	N/A	N/A	N/A
Agua Dulce Elementary School	X	X	N/A	N/A	N/A	N/A
Los Angeles Mission College	X	X	N/A	N/A	N/A	N/A
Hubbard Street Elementary School	X	X	N/A	N/A	N/A	N/A
Hillery T. Broadous Elementary School	X	X	X	X	N/A	N/A
Discovery Charter Preparatory #2	X	X	X	X	N/A	N/A
Volunteers of America Head Start - Van Nuys - Pierce Park Apartments	X	X	X	X	N/A	N/A
Northeast Valley Health Corporation - Pacoima Health Center and Women, Infants, and Children Nutrition Program Site	X	X	X	X	N/A	N/A
Charles Maclay Middle School	X	X	X	X	N/A	N/A
Youth Policy Institute Valley Public Charter High School	X	X	X	X	N/A	N/A
Stonehurst Avenue Elementary School	N/A	N/A	N/A	N/A	X	X
Alliance College-Ready Middle Academy #21	N/A	N/A	N/A	N/A	X	X

School	Build Alternative Educational Facility RSA					
	Refined SR14	SR14A	E1	E1A	E2	E2A
Fenton Academy for Social and Emotional Learning/Fenton STEM Academy – Elementary School	N/A	N/A	N/A	N/A	X	X
Roscoe Elementary School	X	X	X	X	N/A	N/A
Glenwood Elementary School	X	X	X	X	X	X
Total¹	16 – 23	18 – 26	9	9	6	6

Source: Authority, 2019

¹ Some educational facilities are listed as separate or combined institutions in the resource reference databases. As such, specific quantities of educational facilities will not sum precisely to the total values.

RSA = resource study area

X = facility is present in the Build Alternative educational facility RSA

N/A = Not applicable; facility is not present in the RSA

3.10.6 Environmental Consequences

3.10.6.1 Overview

This section evaluates hazardous materials and waste impacts for the No Project and the six Build Alternatives. In many instances, all six Build Alternatives would generally experience similar types of impacts, with differences in the quantity, severity, or location of hazardous sites throughout the hazardous materials and wastes RSA. As such, the following sections address construction-period and operations impacts together for all six Build Alternatives, while acknowledging the differences in hazard quantity, severity, or location, where appropriate. Impacts evaluated for all six Build Alternatives are listed below and discussed in detail in subsequent subsections.

- **Construction Impacts**

- Impact HMW#1: Hazards Due to the Routine Transport, Use, or Disposal of Hazardous Materials during Construction.
- Impact HMW#2: Potential to Encounter PEC Sites with Known and/or Suspected Contamination during Construction.
- Impact HMW#3: Potential for Handling Hazardous Materials or Waste Within 0.25 mile of an Educational Facility during Construction.
- Impact HMW#4: Potential for Facilities Associated with all six Build Alternatives to be Located Adjacent to Landfills.
- Impact HMW#5: The Construction Footprint Would be in the Vicinity of Oil and Natural Gas Resources or Facilities.

- **Operations Impacts**

- Impact HMW#6: Hazards Due to the Routine Transport, Use, or Disposal of Hazardous Materials during Operation.
- Impact HMW#7: Hazards Due to Operation Within Areas of Historical Contamination.
- Impact HMW#8: Potential for Handling Hazardous Materials or Waste Within 0.25 mile of an Educational Facility during Operations.

3.10.6.2 No Project Alternative

No Project Alternative conditions would result in new urban/suburban development and transportation infrastructure throughout the hazardous materials and wastes RSAs to accommodate population growth. Because development activities would continue within the RSAs, there would be increases in the regional generation of hazardous materials commonly used for construction and operation of urban development, such as fuel, welding materials, petroleum products, lubricants, paints and solvents, and cement products containing strong acidic or basic chemicals. These increases under the No Project Alternative would incrementally contribute to the regional transportation, use, storage, and disposal of hazardous materials during construction and operations. However, compliance with federal, state, and local regulations would help to ensure safe transportation, use, storage, and disposal of hazardous materials.

Projects anticipated to proceed or continue under the No Project Alternative would encounter similar types of extant hazardous materials and wastes as those expected to be encountered by all six Build Alternatives, including PEC sites, hazardous building materials, residual pesticides, landfill sites, educational facilities, oil/gas infrastructure, and roadway/railway contamination. For a complete list of planned land development projects, see Appendix 3.19-A, Cumulative Projects List. Development under No Project Alternative conditions would primarily take place within existing urban/suburban communities within the hazardous materials and wastes RSAs, including Palmdale and the San Fernando Valley, and would generally avoid portions of the San Gabriel

Mountains that preclude development due to topographical constraints or protected land designations (such as the ANF, including SGMNM).

New development within urban/suburban portions of the RSAs would require demolition, ground-disturbing, and construction activities, which could disturb hazardous media—such as contaminated soil, soil vapor, or groundwater—and require removal and off-site disposal. Projects proposed under the no Project Alternative would be subject to federal and state oversight regulating the investigation and remediation of hazardous waste during the development process. Spills or releases of hazardous materials and wastes could result from continued operation of commercial and industrial facilities or during transportation of their products. Such releases might result in new PEC sites that could affect future No Project Alternative improvements. Incorporation of BMPs, avoidance measures, and coordination with regulatory agencies would reduce risks associated with hazardous materials and wastes throughout the No Project Alternative timeline.

3.10.6.3 Build Alternatives

Construction Impacts

Impact HMW#1: Hazards Due to the Routine Transport, Use, or Disposal of Hazardous Materials during Construction.

Construction of any of the six Build Alternatives would involve the use, storage, transport, and disposal of the following types of hazardous materials and wastes:

- Substances commonly used at construction sites, such as diesel fuel, welding materials, lubricants, paints, solvents, and cement products
- Waste materials generated during tunneling, such as ACMs, LBP, mercury, heavy metals, and/or groundwater contaminated by petroleum hydrocarbons or other substances
- Waste materials generated through the demolition of structures, such as ACM, LBP/LCM, and PCBs
- Existing soil or groundwater contaminated by petroleum hydrocarbons, ADL, pesticides, herbicides, asbestos, heavy metals, or other hazardous materials or wastes

Exposure to such materials through accident conditions, spills, or mishandling could affect the health of construction workers and potentially people near the construction zone.

In general, the Refined SR14, E1, and E2 Build Alternatives would entail the use, storage, transport, or disposal of hazardous materials and wastes during construction. The Refined SR14, E1, and E2 Build Alternatives would use substances commonly used at construction sites and would encounter existing contamination that would require excavation and removal of spoils offsite. However, due to the geographic locations of each Build Alternative, the Refined SR14 Build Alternative would require hazardous material use, storage, and transport north of State Route 14 near Acton, Agua Dulce, and Santa Clarita. By comparison, the E1 and E2 Build Alternatives could require additional hazardous material use, storage, and transport within and immediately outside the ANF boundary to facilitate construction of tunnels beneath the San Gabriel Mountains. The SR14A, E1A, and E2A Build Alternatives would also require the use, storage, transport, or disposal of hazardous materials. The locations of such impacts would be identical to those resulting from the Refined SR14, E1, and E2 Build Alternatives, with several exceptions. In contrast to the Refined SR14 Build Alternative, the SR14A Build Alternative would not require aboveground hazardous material use, storage, and transport near Acton, while it would require additional use, storage, and transport where the SR14A Build Alternative alignment would enter a tunnel southwest of the interchange of Sierra Highway and Pearblossom Highway. The E1A and E2A Build Alternatives would require additional hazardous material use, storage, and transport to facilitate tunneling southeast of the interchange of Sierra Highway and Pearblossom Highway and north of the Vincent Substation.

Furthermore, excavation and tunneling associated with the six Build Alternatives in the San Fernando Valley would generate different quantities of potentially hazardous spoil materials associated with PEC sites and previous industrial uses that would require extraction, transport, and safe disposal. The quantities for each of the six Build Alternatives are listed below:

- Refined SR14 and SR14A Build Alternatives—9.2 million cubic yards (mcy) of hazardous spoils
- E1 and E1A Build Alternatives—3.0 mcy of hazardous spoils
- E2 and E2A Build Alternatives—3.8 mcy of hazardous spoils

Cubic Yards

For the purposes of the spoils analysis, a typical dump truck has an 18-cubic-yards capacity. Thus, 1 mcy would fill over 55,000 dump trucks.

Although the SR14A, E1A, and E2A Build Alternatives would require greater lengths of tunneled alignment, each would require identical tunnel lengths through areas that would result in the generation of hazardous spoils relative to the Refined SR14, E1, and E2 Build Alternatives, respectively. A conservative analysis was conducted regarding the amount of potential hazardous spoils for each of the Build Alternatives; it is likely that each of the Build Alternatives would produce a smaller quantity of hazardous spoils than estimated. Hazardous materials would be handled in accordance with the CUPA regulations and disposed of off-site at a properly licensed/maintained facility located within the state of California. Many of the sites containing hazardous spoils and/or hazardous materials are associated with the PEC sites listed in Section 3.10.5.3. Contaminated materials would be removed from the tunnel construction areas and could be temporarily stockpiled onsite before being hauled to a suitable hazardous waste treatment site. IAMFs will require the contractor to implement a series of plans and procedures to minimize hazards associated with use, storage, transportation, and disposal of hazardous material and waste.

HWM-IAMF#4 through HMW-IAMF#6 will establish plans for the safe handling of hazardous materials during construction, including those materials associated with contaminated soils or groundwater, construction chemicals, and demolition of structures to ensure hazardous materials are properly handled and there are no adverse environmental or safety impacts. HMW-IAMF#4 requires that the contractor prepare a CMP addressing provisions for the disturbance of undocumented contamination for review and approval by the Authority. HMW-IAMF#5 requires the contractor to prepare demolition plans for the safe dismantling and removal of building components and debris, while HMW-IAMF#6 requires that the contractor prepare a CMP addressing spill prevention. The CMP would include procedures that avoid or reduce the potential for releases and foreseeable upset conditions that would expose persons or the environment to substantial hazards. With Authority approval of the above plans, the contractor would implement these plans, cooperating with local agencies to safely identify, handle, and dispose of contamination encountered during construction of each of the six Build Alternatives.

HMW-IAMF#7 and HMW-IAMF#8 will require the contractor to comply with federal and state regulations to further reduce risks from handling and disposing hazardous materials during construction activities, while HYD-IAMF#3 will avoid release of hazardous materials due to stormwater flow. HMW-IAMF#7 will apply regulations, such as RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act. Lastly, HMW-IAMF#8 requires that the contractor comply with the State Water Resources Control Board Construction Clean Water Act Section 402 General Permit conditions and requirements for transport, labeling, containment, cover, and other BMPs for storage of hazardous materials during construction. HYD-IAMF#3 will require that the contractor prepare and implement a construction stormwater pollution prevention plan to avoid release from contaminated materials into runoff.

CEQA Conclusion

HYD-IAMF#3 will require that the contractor prepare and implement a construction stormwater pollution prevention plan. Federal and state regulations, implemented by HMW-IAMF#4 through HMW-IAMF#8, manage and minimize threats associated with the usage, storage, transport, and disposal of hazardous materials and wastes. The IAMFs require the contractor to transport, use,

and dispose of hazardous materials following procedures that avoid or reduce the potential for releases and foreseeable upset conditions that would expose persons or the environment to substantial hazards. With HMW-IAMF#3 through HMW-IAMF#8, the impact would be less than significant under CEQA for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Impact HMW#2: Potential to Encounter PEC Sites with Known and/or Suspected Contamination during Construction.

Each of the six Build Alternatives would encompass known or suspected PEC sites, including sites on the Cortese list. Such sites could contain hazardous soil, soil vapor, or groundwater contamination. Construction activities could encounter contaminants or interfere with ongoing remediation efforts. Exposure to hazardous wastes would generally be limited to immediate excavation, handling, and storage areas. For this reason, the individuals most at risk would be those in the immediate vicinity (i.e., construction workers) during excavation, transportation, or storage of hazardous wastes during construction.

As discussed in Section 3.10.5.2, PEC sites have been designated low, medium, and high priority (e.g., risk) based on the following factors:

- Affected media (e.g., soil, groundwater, soil vapor)
- Contaminants of concern
- Cleanup status
- Proximity to the Build Alternatives' footprint

As summarized in Section 3.10.5.3, and shown in Table 3.10-3, all six Build Alternative PEC site RSAs encompass numerous high- and medium-priority PEC sites that could be sources of hazardous materials with the potential to migrate into each of the six Build Alternative footprints. The six Build Alternative PEC site RSAs encompass identical PEC sites in the city of Palmdale. However, between the California Aqueduct and the San Fernando Valley, each of the six Build Alternatives would encompass separate PEC sites. Many PEC sites near the proposed Burbank Airport Station are within the PEC site RSA for multiple Build Alternatives. Overall, PEC sites are concentrated in the urbanized city of Palmdale and the San Fernando Valley, where historic commercial and industrial development resulted in widespread contamination (refer to Figure 3.10-A-1 through Figure 3.10-A-18). There are two PEC sites within the PEC site RSA in the suburban and undeveloped areas between Palmdale and the San Fernando Valley: the Lubrication Company of America site (Figure 3.10-A-1), and the SOS-Placerita Canyon site (Figure 3.10-A-2).

HSR construction will be coordinated with site remediation activities to avoid damaging or interfering with remediation site controls such as soil containment areas or groundwater remediation facilities. Each of the six Build Alternatives would require tunneling through areas underlying remediation sites. Surface infrastructure, such as stations, ancillary facilities, and track construction, could require grading, trenching, and other earth-disturbing activities in remediation sites. Interference with ongoing remediation activities could increase the risk of a release of contaminants or interrupt cleanup; thus, coordination with regulatory agencies would be required before construction could advance at known potentially hazardous sites.

HMW-IAMF#1 will require PEC site investigation and remediation throughout the property acquisition and construction phases of each of the six Build Alternatives. During the right-of-way acquisition phase, Phase I ESAs will be conducted to identify parcels that would require a Phase II ESA (e.g., soil, groundwater, soil vapor subsurface investigations). If the Phase II ESA concluded the site was affected, remediation or corrective action will be conducted in compliance with applicable federal and state regulations.

HMW-IAMF#6, HMW-IAMF#7, and HMW-IAMF#8 (discussed in Impact HMW#1) would reduce risks associated with excavation, storage, transportation, and release of contaminants or contaminated media during construction.

CEQA Conclusion

HMW-IAMF#1 would require a Phase I ESA and, if required, a Phase II ESA to identify and characterize hazards from PEC sites. HMW-IAMF#6 through HMW-IAMF#8 require a variety of hazardous waste plans to address spill prevention and establish procedures for the handling of hazardous wastes generated during remediation activities. With implementation of HMW-IAMF#1 and HMW-IAMF#6 through HMW-IAMF#8, the impact under CEQA would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives because environmental site assessments would be required to determine a site's potential for contamination and whether further testing or remediation would be required to avoid exposing persons or the environment to hazardous materials. In addition, specific procedures would be in place to safely address risks posed by hazardous materials encountered during construction (including releases from Cortese List sites). Therefore, CEQA does not require any mitigation.

Impact HMW#3: Potential for Handling Hazardous Materials or Waste Within 0.25 mile of an Educational Facility during Construction.

The educational facility RSA encompasses school facilities that serve individuals who may be particularly sensitive to hazardous materials or wastes. Potentially hazardous materials and wastes generated during demolition, site preparation, and construction could pose a risk to individuals at school sites within 0.25 mile of the construction area, including school sites within 0.25 mile of a haul route. Construction of each of the six Build Alternatives would increase the quantity of hazardous materials moving along major transportation corridors (i.e., State Route 14 and Interstate 5) during construction. If unaddressed, the presence of hazardous waste near educational facilities would represent a direct hazard throughout the construction period.

As summarized in Table 3.10-6 and mapped in Figure 3.10-A-1 through Figure 3.10-A-18, schools within 0.25 mile of the construction area are concentrated in the urbanized Palmdale and San Fernando Valley areas. However, the Refined SR14 Build Alternative educational facility RSA includes several schools in the rural communities of Acton and Agua Dulce (Figure 3.10-A-1 and Figure 3.10-A-2), and the E1 and E2 Build Alternative educational facility RSAs include two schools in the rural community of Acton (Figure 3.10-A-7 and Figure 3.10-A-10). The SR14A, E1A, and E2A Build Alternatives would also be constructed within 0.25 mile of educational facilities. The SR14A Build Alternative would be constructed within 0.25 mile of three additional schools in the Acton area compared to the Refined SR14 Build Alternative. However, the SR14A Build Alternative alignment would be underground in a tunnel in the vicinity of these additional schools. With the exception of these schools, such impacts on schools would be identical to those resulting from the implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively.

As outlined in Table 3.10-6, several educational facilities are within the educational facility RSA for multiple Build Alternatives. Between the California Aqueduct and the proposed Burbank Airport Station, each of the six Build Alternatives' educational facility RSAs encompasses different educational facilities.

The Palmdale to Burbank Project Section would comply with applicable state regulations, including Public Resources Code section 21151.4, to reduce the potential for the release of large quantities of hazardous materials and wastes into the environment by consulting school districts within 0.25 mile of schools. However, these standard procedures would

Environmental Site Assessments

Phase I Environmental Site Assessments involve a parcel-level records review, site inspection, and interviews.

Phase II Environmental Site Assessments include sampling and laboratory analysis to confirm the presence of hazardous contaminants.

Cal. Public Res. Code Section 21151.4

This regulation requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of a project that could emit hazardous air pollutants or handle hazardous substances.

not eliminate the potential for a hazardous material release within 0.25 mile of a school.

CEQA Conclusion

Construction of the each of the six Build Alternatives could entail the handling of hazardous substances within 0.25 mile of educational facilities, thereby posing a potential health and safety hazard to students or employees. This represents a significant impact. HMW-MM#1, described in Section 3.10.7, will require the Authority to prepare a memorandum confirming that the construction contractor will not handle or store an extremely hazardous substance within 0.25 mile of a school. Signage will be installed prior to construction to delimit work areas within 0.25 mile of a school, informing contractors not to bring extremely hazardous substances into the area. With implementation of HMW-MM#1, the contractor will be prohibited from handling or storing extremely hazardous substances in a quantity equal to or greater than the state threshold within 0.25 mile of a school, and the contractor will be required to monitor all use of extremely hazardous substances. Thus, construction of each of the six Build Alternatives would not result in a potential health and safety hazard to students or employees. Thus, this impact would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives after mitigation.

Impact HMW#4: Potential for Facilities Associated with all six Build Alternatives to be Located Adjacent to Landfills.

Landfills pose an environmental concern because of the potential for landfill gases (primarily methane and carbon dioxide). If unaddressed, landfill gas accumulation represents a direct hazard to HSR facilities, construction workers, the public, and the environment throughout construction and operation of all six Build Alternatives.

As discussed in Section 3.10.5.4, the landfill RSA encompasses landfill facilities that are generally concentrated near urbanized communities surrounding the city of Palmdale and in the San Fernando Valley. All six Build Alternatives' landfill RSAs encompass identical landfill sites in the city of Palmdale and near the Burbank Airport Station. Between Palmdale and the San Fernando Valley, each of the six Build Alternatives' landfill RSAs encompass different landfill facilities, mapped in Figure 3.10-A-1 through Figure 3.10-A-18.

As discussed in Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources, GEO-IAMF#3 (Gas Monitoring) will require the contractor to prepare a CMP incorporating gas monitoring into the construction BMPs. Hazards related to potential migration of hazardous gases due to active or historic landfills can be reduced or eliminated by following strict federal and State Occupational Safety and Health Administration regulatory requirements for excavations, and by consulting with other agencies as appropriate, such as the California Environmental Protection Agency or Department of Toxic Substances Control, regarding known areas of concern. Practices required by GEO-IAMF#3 will include using safe and explosion-proof equipment during construction and testing for gases regularly. Installation of passive or active gas venting systems, gas collection systems, and active monitoring systems and alarms will be required in underground construction areas and facilities where subsurface gases are present. Once installed, active monitoring systems will detect if unsafe levels of gas accumulate in construction areas and establish the effectiveness of gas venting systems.

HMW-IAMF#2 will require the contractor to prepare a technical memorandum outlining methane protection measures for ground-disturbing work within 1,000 feet of a landfill, including gas detection systems and personnel training. This will be undertaken pursuant to State of California Title 27, Environmental Protection – Division 2, Solid Waste. HMW-IAMF#3 will require the installation of protective barriers to limit potential subsurface contaminants from encroaching into

Landfill Gas Hazards

If accumulated in enclosed spaces, methane gas could explode, and carbon dioxide could pose asphyxiation risks.

Landfills within the RSA:

- Refined SR14 Build Alternative—21 to 25 landfills
- SR14A Build Alternative—25 to 26 landfills
- E1 Build Alternative—21 to 25 landfills
- E1A Build Alternative—25 to 26 landfills
- E2 Build Alternative—16 landfills
- E2A Build Alternative—16 landfills

the HSR right-of-way. Finally, hazardous materials plans (HMW-IAMF#10) will specify procedures for landfill hazard assessments throughout the lifetime of the HSR facilities.

CEQA Conclusion

HMW-IAMF#2 and GEO-IAMF#3 will establish measures to protect against methane-related hazards associated with construction activities near landfill sites. HMW-IAMF#3 and HMW-IAMF#10 will require hazardous materials monitoring plans and a technical memorandum establishing landfill gas prevention measures prior to operations. With implementation of these IAMFs, the impact under CEQA would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives because each of the six Build Alternatives would not create a significant hazard to the construction workers, the public or the environment resulting from conditions that involve the release of hazardous materials at landfills. Therefore, CEQA does not require any mitigation.

Impact HMW#5: The Construction Footprint Would be in the Vicinity of Oil and Natural Gas Resources or Facilities.

The area between Palmdale and Burbank is an active oil-producing region. The presence of active and inactive oil and natural gas facilities suggests the presence of naturally occurring petroleum, which could increase spill and explosion hazards from liquid oil or gaseous methane during construction. If unaddressed, petroleum extraction facilities would represent a direct hazard to HSR facilities, construction workers, and the public.

As mapped in Figure 3.10-A-1 through Figure 3.10-A-18, there is one plugged oil/gas dry hole within the Refined SR14 and E1 Build Alternative RSAs in the San Fernando Valley. The E2 Build Alternative oil and natural gas wells/field RSA encompasses two separate facilities within the ANF, both of which are plugged and dry hole oil/gas production wells. There are no known oil/natural gas fields within the Refined SR14, E1, or E2 Build Alternative oil and natural gas wells/field RSAs. The SR14A, E1A, and E2A Build Alternatives would also traverse an active oil producing region and would be in the vicinity of plugged oil/gas wells. Such impacts would be identical to those resulting from implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively.

Potential explosion and spill hazards during construction would be minimal for plugged, buried, and dry oil/gas wells. However, residual deposits of petroleum could still be present near inactive facilities. Construction personnel would regularly test for gases and use explosion-proof construction equipment in areas where there are potential explosion hazards. The following IAMFs will require the contractor to implement procedures that minimize hazards associated with the presence of petroleum substances within each of the six Build Alternative oil and natural gas wells/field RSAs.

HMW-IAMF#4, HMW-IAMF#7, and HMW-IAMF#8 will address risks from oil and natural gas resource facilities through regulatory compliance and the establishment of safety standards to address risks associated with these facilities. HMW-IAMF#4 requires that the contractor prepare and implement a CMP with provisions for identification, treatment, and disposal for potential hazardous materials associated with oil and natural gas facilities that could exist within the construction area. HMW-IAMF#7 requires the contractor to comply with applicable federal and state regulations pertaining to hazardous materials sites, such as RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act. Lastly, HMW-IAMF#8 requires the contractor to comply with the State Water Resources Control Board Construction Clean Water Act Section 402 General Permit conditions and requirements for transport, labeling, containment, cover, and other BMPs for storage of hazardous materials during construction.

SS-IAMF#4 will require the inspection of abandoned and active oil wells within 200 feet of the HSR tracks to identify any such risks posed by such wells, as described in Section 3.11, Safety and Security. Also, discussed in Section 3.9, Geology, Soils, and Seismicity, and Paleontological Resources, GEO-IAMF#3 (Gas Monitoring) will require the contractor to prepare a CMP incorporating gas monitoring into construction BMPs. Hazards related to potential migration of

hazardous gases due to the presence of known oil and gas fields can be reduced or eliminated by following strict federal and State Occupational Safety and Health Administration regulatory requirements for excavations, and by consulting with other agencies as appropriate, including the California Division of Oil, Gas, and Geothermal Resources, regarding known areas of concern to assess known hazardous gases in the presence of oil and gas fields. Practices will include using safe and explosion-proof equipment during construction and testing for gases regularly. Installation of passive or active gas venting systems, gas collection systems, and active monitoring systems and alarms will be required in underground construction areas and facilities where subsurface gases are present. Installing gas-detection systems can monitor the effectiveness of these systems.

CEQA Conclusion

SS-IAMF#4 will require the inspection of abandoned and active oil wells that could pose risks to the six Build Alternatives. GEO-IAMF#3 and HMW-IAMF#4 will require that the CMP set forth procedures to be followed by construction personnel regarding the potential disturbance of undocumented contamination associated with oil and natural gas resources or facilities. Adherence to these procedures would reduce the potential for spills, explosions, or other hazards. HMW-IAMF#6 and HMW-IAMF#8 will regulate the storage, transportation, and disposal of petroleum contamination. With implementation of these IAMFs, construction of each of the six Build Alternatives would not create a significant hazard to the construction workers, the public, or the environment resulting from conditions that involve the release of hazardous materials at oil and natural gas facilities. In conclusion, there would not be a significant hazard to the public or the environment for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. Therefore, CEQA does not require any mitigation.

Operations Impacts

Impact HMW#6: Hazards Due to the Routine Transport, Use, or Disposal of Hazardous Materials during Operation.

Operations of the six Build Alternatives would require the use of hazardous materials and would generate hazardous wastes associated with routine maintenance. The hazardous materials would include wastes such as herbicides, lubricants, and janitorial supplies, which would be used at the station areas, ancillary facilities, and along the trackway. Improper transport, use, or disposal of these materials could harm maintenance workers, passengers, or the environment throughout the lifetime of the Palmdale to Burbank Project Section.

Improper storage, improper handling, negligence, seismic activity, or inclement weather could cause accidents that would result in exposure to these hazardous materials. In addition, valve leakage along rail corridors could release hazardous liquids or gases. The degree of impact from a release or spill of hazardous materials depends on the proximity of the spill to densely populated and environmentally sensitive areas. If unaddressed, the use, storage, transport, or disposal of hazardous materials and waste would represent a direct, permanent hazard throughout the operational period.

Impacts would be similar for all six Build Alternatives and would differ only in the length of the alignment and duration of construction when such hazardous materials would be in use or transit. The SR14A Build Alternative would operate along the longest linear alignment and would thus have the potential to experience the most operational hazards associated with the use, storage, transport, and disposal of hazardous materials.

Operations of the California HSR System would have a low risk of creating potential accident conditions that could result in a large hazardous materials release. HSR trains would not transport hazardous materials and would not risk collision with other vehicles handling hazardous materials. As described in Chapter 2, Alternatives, relocation of transportation facilities (including roadways and railways) intersecting with the proposed HSR trackway would prevent potential

HSR Propulsion

Electric HSR passenger trains would not require onboard fuel sources and would not transport freight, including hazardous substances.

collisions with automotive or freight vehicles that may contain hazardous materials. The California HSR System would operate on tracks separated from slow-speed passenger and freight rail; separation would be attained either by distance or physical barriers. These separations, along with design standards to keep potential HSR derailment within the track guideway (see Section 3.11, Safety and Security), would eliminate the potential for collisions with hazardous materials transporters.

Federal and state regulations summarized in Section 3.10.2 (including RCRA, the Hazardous Materials Transportation Act, the Hazardous Materials Uniform Safety Act, and the Hazardous Waste Control Act) regulate the proper use, transportation, storage, and disposal of hazardous materials. For example, RCRA and the Hazardous Waste Control Act regulate hazardous materials and wastes, ensuring safe handling from identification to disposal. The Transportation and Uniform Safety Acts specifically and uniformly (across state lines) regulate air, sea, and land transportation of hazardous materials. These acts address potential hazards associated with operations and maintenance by uniformly regulating how the materials are handled, which lowers the potential for mishandling and accidental contamination. HMW-IAMF#9 will implement an Environmental Management System to annually inventory hazardous substances to evaluate for replacement with nonhazardous materials. HMW-IAMF#10 will implement hazardous materials monitoring plans to ensure safe handling of hazardous materials during operations.

Although operating trains would not transport or require handling of hazardous materials, they would generate brake dust. Brake dust consists of particulate metals (primarily iron) but may also include copper, silicon, calcium, manganese, chromium, and barium. Although brake dust consists primarily of particulate metals, some of these metals could become dissolved in rainwater. Electric trains would use regenerative braking technology, resulting in reduced physical braking and associated wear compared to conventional petroleum-fueled trains. Brake dust would not be generated in equal amounts throughout each of the six Build Alternative alignments. The primary locations where brake dust would be generated are areas where the trains must reduce their travel speed, such as approaches to stations, turns, and elevation changes (primarily descents). Long stretches of flat terrain with a straight rail alignment would generate less brake dust than other areas. In addition, brake dust is generally anticipated to be retained in track ballast. As discussed in Section 3.8, Hydrology and Water Resources, HYD-IAMF#1 will require the use of low-impact development techniques to control stormwater runoff from track ballast. Therefore, brake dust metals will be kept on site and will not leave the project footprint.

CEQA Conclusion

Adherence to federal and state regulations summarized in Section 3.10.2 would regulate the proper use, transportation, storage, and disposal of hazardous materials. HMW-IAMF#9 and HMW-IAMF#10 will minimize the use of hazardous materials for each of the six Build Alternatives and would require preparation of hazardous materials monitoring plans during operations. HYD-IAMF#1 will minimize impacts from the release of brake dust from operating trains. With adherence to applicable federal and state regulations, combined with HMW-IAMF#9, HMW-IAMF#10, and HYD-IAMF#1, the impact under CEQA would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives because operations of each of the six Build Alternatives would not create a significant hazard to the public or the environment resulting from the routine transport, use, or disposal of hazardous materials, or reasonably foreseeable upset and conditions that involve the release of hazardous materials. Therefore, CEQA does not require any mitigation.

Impact HMW#7: Hazards Due to Operation Within Areas of Historical Contamination.

All six Build Alternative footprints include parcels to be acquired that may contain contamination associated with prior site uses (i.e., PEC sites), hazardous building materials, roadway/railway contamination (such as ADL), and pesticides. Phase I and potentially Phase II ESAs (required by HMW-IAMF#1) will characterize site contamination and the Authority will conduct remedial activities (e.g., removal of contamination, *in situ* treatment, or soil capping) in compliance with applicable federal and state regulations.

Preconstruction investigation and remedial treatment during the construction period would minimize risk associated with PEC sites prior to the operational period. However, residual contamination could cause an impact throughout the lifetime of the Palmdale to Burbank Project Section. This impact would be identical for all six Build Alternatives, although the potential for residual contamination would likely differ by Build Alternative based on the specific location of each of the six Build Alternative corridors. HMW-IAMF#10 will require the contractor to prepare a hazardous materials business plan consistent with California law, which will establish procedures for the handling of contamination during operations of the six Build Alternatives. A hazardous materials business plan consistent with California law includes detailed information on the inventory of these materials, emergency response plans, employee training, and a site map showing roads, drains, emergency shutoffs, storage, and evacuation areas. This hazardous materials business plan would avoid contamination risks posed to maintenance workers in areas of historical contamination.

Hazardous Materials Business Plan

This plan (defined by California Health and Safety Code, Division 20, Chapter 6.95, Section 25500–25519) protects human and environmental health from adverse effects as a result of the storage or possible release of hazardous materials.

CEQA Conclusion

Per HMW-IAMF#10, a hazardous materials business plan will set forth binding procedures for appropriate handling and disposal of residual hazardous materials detected during operations and maintenance activities. With implementation of HMW-IAMF#10, the impact under CEQA would be less than significant for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives because operations of each of the six Build Alternatives would not create a significant hazard to the public or the environment due to the release of hazardous materials or wastes associated with contaminated sites (including Cortese list sites). Therefore, CEQA does not require any mitigation.

Impact HMW#8: Potential for Handling Hazardous Materials or Waste Within 0.25 mile of an Educational Facility during Operations.

Operations of all six Build Alternatives would entail storage or use of hazardous materials within 0.25 mile of educational facilities, which serve individuals who are particularly sensitive to hazardous materials or wastes. As described under Impact HMW#6, operating trains would generate brake dust. However, dust would be primarily limited to track ballast areas. Additionally, HYD-IAMF#1 will apply to minimize the release of hazardous brake dust. Thus, the use of hazardous materials and generation of hazardous waste will be limited mostly to the maintenance and repair of trains. Routine maintenance activities such as weed control required for operation of the Palmdale to Burbank Project Section could generate or involve the handling or transport of small quantities of hazardous materials, such as paints, oils, lubricants, absorbents, cleaners, and herbicides.

As summarized in Table 3.10-6 and mapped in Figure 3.10-A-1 through Figure 3.10-A-18, the Refined SR14, E1, and E2 Build Alternative 0.25-mile buffer encompasses school facilities concentrated in the San Fernando Valley. The Refined SR14, E1, and E2 Build Alternative educational facility RSAs encompass identical school facilities in the city of Palmdale. Between the California Aqueduct and the proposed Burbank Airport Station, each Build Alternative educational facility RSA encompasses different educational facilities. As outlined in Table 3.10-6, many of these educational facilities would be within the educational facility RSAs for multiple Build Alternatives. This impact would be the same for the Refined SR14, E1, and E2 Build Alternatives, although each Build Alternative varies in the number of school facilities in the educational facility RSA (summarized in Impact HMW#3 and Table 3.10-6). The SR14A, E1A, and E2A Build Alternatives would also require operations within 0.25 mile of educational facilities. The SR14A Build Alternative would be constructed within 0.25 mile of three schools in the Acton area, similar to the Refined SR14 Build Alternative; however, the SR14A Build Alternative alignment would be underground in a tunnel in the vicinity of these schools. With the exception of these schools, such impacts would be identical to those resulting from the implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively.

The Palmdale to Burbank Project Section would comply with federal and state regulations to reduce the potential for the release of large quantities of hazardous materials and wastes into the environment. However, these standard procedures would not eliminate the potential for a release of an extremely hazardous substance within 0.25 mile of a school. As described in Section 3.10.7, the Authority would prepare a memorandum confirming that no extremely hazardous substances (as defined in California Public Resources Code [Cal. Public Res. Code] Section 21151.4 and listed in 40 C.F.R. Appendix A to Part 355 – List of Extremely Hazardous Substances and their Threshold Planning Quantities) would be used within 0.25 mile of a school during operation of the Build Alternatives. An operations plan would be created by the Authority and coordinated with the educational facilities to document compliance with this requirement.

CEQA Conclusion

Operations of each of the six Build Alternatives could entail the handling or transportation of hazardous substances within 0.25 mile of educational facilities, thereby posing a health and safety hazard to students or employees. This represents a significant impact. As stated above, HMW-MM#1, will require the Authority to prepare a memorandum confirming that no extremely hazardous substances will be used within 0.25 mile of a school during operation of the Build Alternatives. An operations plan will be created by the Authority and coordinated with the educational facilities to document compliance with this requirement. With implementation of HMW-MM#1, the impact under CEQA would be less than significant because the Authority would be prohibited from handling or storing extremely hazardous substances in a quantity equal to or greater than the state threshold within 0.25 mile of a school. Thus, this impact would be less than significant for the Refined SR14, SR14A, E1, E1A, and E2A Build Alternatives after mitigation.

3.10.7 Mitigation Measures

HMW-MM#1: Limit handling of extremely hazardous materials near educational facilities.

Prior to construction, the contractor shall prepare a memorandum regarding construction BMPs for hazardous materials for the Authority's approval. The memorandum shall confirm that the contractor will not, within 0.25 mile of a school, use, handle or store any extremely hazardous substance (as defined in Cal. Public Res. Code Section 21151.4) or a mixture containing extremely hazardous substances in a quantity equal to or greater than the State threshold specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code. Prior to construction, signage shall be installed to delimit work areas within 0.25 mile of a school, informing contractors not to bring extremely hazardous substances into the area. The contractor shall be required to monitor use of extremely hazardous substances. The memorandum required by this measure shall be submitted to the Authority prior to construction involving an extremely hazardous substance.

During operations, no extremely hazardous substances or a mixture of extremely hazardous substances would be used in a quantity equal to or greater than the state threshold quantity (Health and Safety Code Section 25532) within 0.25 mile of a school. An operations plan shall be created by the Authority and coordinated with the educational facilities to document compliance. Additionally, ongoing monitoring during construction shall take place in compliance with Cal. Public Res. Code Section 21151.4.

3.10.7.1 Impacts from Mitigation Measures

HMW-MM#1 would limit the handling of hazardous materials near educational facilities and is consistent with Cal. Public Res. Code Section 21151.4. The Authority will create an operations plan to document compliance with this requirement. Additionally, the contractor will be required to monitor all use of both extremely hazardous substances and hazardous substances within 0.25 mile of educational facilities, which will reduce the impact on education facilities within 0.25 mile of educational facilities to a less than significant level during construction and operations of any of the six Build Alternatives.

This mitigation measure will include installation of signage to alert contractors to the presence of nearby educational facilities, which would cause a minor change to the visual environment.

However, the installation of such signs would result in negligible visual impacts because they would be similar to other traffic signs in school areas. No other secondary impacts would occur in other areas. For this reason, HMW-MM#1 would have no secondary environmental effects.

3.10.8 NEPA Impacts Summary

This section summarizes impacts associated with the six Build Alternatives and compares them to the anticipated No Project Alternative impacts. Table 3.10-7 compares the impacts of each Build Alternative, summarizing the more detailed information provided in Section 3.10.6.3. A comparison and discussion of the construction and operations impacts associated with the six Build Alternatives follows Table 3.10-7.

Table 3.10-7 Comparison of High-Speed Rail Build Alternative Impacts for Hazardous Materials and Wastes

Impacts	Build Alternative						NEPA Conclusion before Mitigation (All Build Alternatives)	Mitigation	NEPA Conclusion post Mitigation (All Build Alternatives)
	Refined SR14	SR14A	E1	E1A	E2	E2A			
Construction Impacts									
Impact HMW#1: Hazards Due to the Routine Transport, Use, or Disposal of Hazardous Materials during Construction.							No Adverse Effect	No mitigation needed	N/A See Section 3.10.8.1
Estimated hazardous spoils quantities (mcy)	9.2	9.2	3.0	3.0	3.8	3.8			
Impact HMW#2: Potential to Encounter PEC Sites with Known and/or Suspected Contamination during Construction.							No Adverse Effect	No mitigation needed	N/A See Section 3.10.8.2 and Section 3.10.8.3
Number of high-priority PEC sites within the PEC site RSA	26	26	24	24	21	20			
Number of medium-priority PEC within the PEC site RSA	76	82	74	77	38	42			
Impact HMW#3: Potential for Handling Hazardous Materials or Waste Within 0.25 mile of an Educational Facility during Construction.							Adverse Effect	HMW-MM#1	No Adverse Effect See Section 3.10.8.4
Number of educational facilities within 0.25 mile of the construction footprint	18 – 23	21 – 26	10	10	6	6			
Impact HMW#4: Potential for Facilities Associated with all six Build Alternatives to be Located Adjacent to Landfills.							No Adverse Effect	No mitigation needed	N/A See Section 3.10.8.5
Number of landfills within 0.25 mile of alignment centerline	21 – 25	25 – 26	21 – 25	25 – 26	16	16			

Impacts	Build Alternative						NEPA Conclusion before Mitigation (All Build Alternatives)	Mitigation	NEPA Conclusion post Mitigation (All Build Alternatives)
	Refined SR14	SR14A	E1	E1A	E2	E2A			
Impact HMW#5: The Construction Footprint Would be in the Vicinity of Oil and Natural Gas Resources or Facilities.							No Adverse Effect	No mitigation needed	N/A See Section 3.10.8.6
Number of oil and gas wells within the oil and natural gas wells/field RSA	1	1	1	1	1-2	1-2			
Operations Impacts									
Impact HMW#6: Hazards Due to the Routine Transport, Use, or Disposal of Hazardous Materials during Operation.							No Adverse Effect	No mitigation needed	N/A See Section 3.10.8.1
Operations of all six Build Alternatives would have similar likelihood to transport, use, or dispose of hazardous materials and wastes. Procedures would be used to avoid or reduce the potential for spills and releases that would expose persons or the environment to substantial hazards.									
Impact HMW#7: Hazards Due to Operation Within Areas of Historical Contamination.							No Adverse Effect	No mitigation needed	N/A See Section 3.10.8.2
Operations of all six Build Alternatives would have similar likelihood to encounter historical contamination.									
Impact HMW#8: Potential for Handling Hazardous Materials or Waste Within 0.25 mile of an Educational Facility during Operations.							Adverse Effect	HMW-MM#1	No Adverse Effect See Section 3.10.8.4
Number of educational facilities within 0.25 mile of footprint	18-23	21-26	10	10	6	6			

mcy = million cubic yards
 PEC = potential environmental concern
 RSA = resource study area

The population throughout the Palmdale to Burbank region is projected to grow through 2040 (see Section 3.19, Regional Growth), resulting in additional land use and transportation infrastructure projects. This anticipated growth would occur during the No Project Alternative timeline and would include other projects that would be expected to encounter educational facilities and hazardous materials between Palmdale and Burbank, including hazardous building materials, residual pesticides, landfill sites, oil/gas infrastructure, roadway/railway contamination, and other hazardous materials required for construction or operation activities. These growth initiatives and planned improvements would require the storage, transport, use, and disposal of hazardous materials and would generate a mix and quantity of hazardous wastes based on the magnitude of the improvements and contamination at any given site. Notably, implementation of the No Project Alternative is not expected to entail the extensive excavations and tunneling required for all six Build Alternatives. Given the lesser prospect of encountering or mobilizing contaminated media, the No Project Alternative would be unlikely to generate similar quantities of hazardous spoils as the Build Alternatives.

The six Build Alternatives incorporate IAMFs that would avoid most effects related to hazardous materials and wastes (Section 3.10.4.2). HMW-IAMF#1 through HMW-IAMF#10 will require preparation of hazardous materials and waste plans and application of BMPs to keep most hazardous material and waste risks within established safety thresholds, thereby avoiding effects. However, as discussed in this section, HMW-MM#1 will require steps to avoid or minimize the use of hazardous materials within 0.25 mile of educational facilities.

3.10.8.1 Handling of Hazardous Materials and Wastes

Due to the geographic disparity of the Refined SR14, E1, and E2 Build Alternatives, each would require hazardous material use, storage, and transport in different locations. The Refined SR14 Build Alternative would require hazardous material use, storage, and transport north of State Route 14 near Acton, Agua Dulce, and Santa Clarita. By comparison, the E1 and E2 Build Alternatives could require additional hazardous material use, storage, and transport along Aliso Canyon and Arrastre Canyon to facilitate construction of tunnels beneath the San Gabriel Mountains. The SR14A, E1A, and E2A Build Alternatives would also likely require the use, storage, transport, and disposal of hazardous materials. The locations of such impacts would be identical to those resulting from the Refined SR14, E1, and E2 Build Alternatives, with several exceptions. In contrast to the Refined SR14 Build Alternative, the SR14A Build Alternative would not require aboveground hazardous material use, storage, and transport near Acton, while it would require additional use, storage and transport where the SR14A Build Alternative alignment would enter a tunnel southwest of the interchange of Sierra Highway and Pearblossom Highway. The E1A and E2A Build Alternatives would require additional hazardous material use, storage, and transport to facilitate tunneling southeast of the interchange of Sierra Highway and Pearblossom Highway and north of the Vincent Substation. Because the Refined SR14 and SR14A Build Alternatives would require the longest alignments and the longest construction periods, they would result in the greatest construction period and operational effects from the use, storage, transport, and disposal of hazardous materials.

HMW-IAMF#4 through HMW-IAMF#8 will require the preparation of plans, consistent with federal and state regulations, to address the use, storage, transport, and disposal of hazardous materials and wastes during construction. HMW-IAMF#9 will require the contractor to procure nonhazardous materials (where feasible) throughout construction and operations. HMW-IAMF#10 will implement hazardous materials monitoring plans to ensure safe handling of hazardous materials during operations. HYD-IAMF#3 will require the contractor prepare and implement a construction stormwater pollution prevention plan to avoid release from contaminated materials into runoff, and HYD-AMF#1 will require the use of low-impact development techniques to control stormwater runoff from track ballast and minimize impacts from the release of brake dust from operating trains.

All six Build Alternatives would generate hazardous building materials during demolition, including ACM, LBP/LCM, and PCBs. Demolition plans will establish procedures to best protect human health and the environment while properly containing, removing, and disposing of ACM and LBPs

(HMW-IAMF#5). Thus, the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives would be unlikely to result in construction impacts from the handling of hazardous materials and wastes. Operations impacts resulting from the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives would be unlikely due to pre-construction and construction-period remediation requirements and would not create a significant hazard to the public or the environment resulting from the routine transport, use, or disposal of hazardous materials, or reasonably foreseeable upset and conditions that involve the release of hazardous materials.

3.10.8.2 Existing Contamination at Potential Environmental Concern Sites

Similar to development under the No Project Alternative, construction of each of the six Build Alternatives would likely generate hazardous materials and wastes during ground-disturbing activities that encounter contaminated media *in situ* due to the presence of numerous PEC sites nearby. As discussed in Section 3.10.5.2, PEC sites have been designated as low, medium, and high priority (e.g., risk) based on the factors described in Table 3.10-3.

As summarized in Section 3.10.5.3 and mapped in Figure 3.10-A-1 through Figure 3.10-A-18, the Refined SR14, E1, and E2 Build Alternative PEC site RSAs encompass numerous high- and medium-priority PEC sites. The SR14A, E1A, and E2A Build Alternatives would encounter PEC sites in similar areas and would not encounter substantially greater quantities compared to the Refined SR14, E1, and E2 Build Alternatives, respectively. Thus, such impacts would not differ substantially from those resulting from implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively. HMW-IAMF#1 will require PEC site investigation and remediation throughout the property acquisition and construction phases.

Where PEC site hazards would be unavoidable, preconstruction activities would address, in coordination with regulatory agencies, the requirements for building at those sites. Each of the six Build Alternatives could also implement design and engineering controls to avoid contaminated sites. Hazardous waste plans will be prepared to address spills and establish procedures for handling hazardous materials in compliance with existing laws and regulations (HMW-IAMF#6 through HMW-IAMF#8).

Preconstruction investigation and remedial treatment would minimize risk associated with PEC sites prior to operation of the Palmdale to Burbank Project Section. However, residual contamination could cause an impact throughout the Palmdale to Burbank Project Section's lifetime. This impact would be identical for the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. HMW-IAMF#10 will require the contractor to prepare a hazardous materials business plan as required by California law, which will establish procedures for the handling of residual contamination detected during operations and maintenance activities.

3.10.8.3 Existing Contamination and Contaminated Spoils Disposal

Major earthwork activities required for each of the six Build Alternatives, including cuts, tunneling, adits/intermediate windows, trenches, and other features, in areas with suspected or known hazardous material or waste could result in the generation and transportation of contaminated spoils material (quantified in Table 3.10-7). The Refined SR14 Build Alternative would generate contaminated spoils by excavating contaminated soils associated with PEC sites near the Vulcan Mine site and Hansen Spreading Grounds in the San Fernando Valley; the E1 Build Alternative would generate contaminated spoils similar to Refined SR14; and the E2 Build Alternative would generate contaminated spoils south of the Big Tujunga Wash crossing and at the CalMat Mine disposal site. In addition, the Build Alternatives would generate substantial amounts of extremely contaminated spoils in Burbank associated with the underground Burbank Airport Station. See Figure 3.10-A-1 through Figure 3.10-A-18 for further detail on the type and location of PEC sites. Compared to the E1 and E2 Build Alternatives, the Refined SR14 station would generate the most potentially contaminated spoils (approximately 9.2 mcy), whereas the E1 Build Alternative would generate a lesser quantity of potentially contaminated spoils (approximately 3.0 mcy). The SR14A, E1A, and E2A Build Alternatives would also result in the excavation of hazardous spoils. Such impacts would be identical to those resulting from the implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively. There are no differences in the Build Alternatives that

would alter the likelihood or magnitude of potential construction effects associated with the transport, use, or disposal of hazardous materials and wastes.

3.10.8.4 Hazardous Material and Waste Handling near Educational Facilities

Similar to development that would take place under the No Project Alternative, construction and operation of all six Build Alternatives could entail handling of hazardous materials or waste within 0.25 mile of educational facilities. If unaddressed, the presence of hazardous waste near educational facilities would represent a direct hazard during HSR construction and operations. As the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternative educational facility RSAs encompass similar numbers of educational facilities (discussed below), this impact would not differ substantially among the six Build Alternatives.

As summarized in Table 3.10-6 and mapped in Figure 3.10-A-1 through Figure 3.10-A-18, the Refined SR14, E1, and E2 Build Alternative educational facility RSAs encompass numerous schools. Between the California Aqueduct and the proposed Burbank Airport Station, each of the six Build Alternative educational facility RSAs encompasses different educational facilities. The Refined SR14 educational facility RSA encompasses 18 to 23 educational facilities, which is greater than the E1 Build Alternative educational facility RSA (10 educational facilities), and the E2 Build Alternative educational facility RSA (6 educational facilities). As outlined in Table 3.10-6, many of these educational facilities would be within the educational facility RSAs for multiple Build Alternatives. The SR14A, E1A, and E2A Build Alternatives would also be constructed within 0.25 mile of educational facilities. The SR14A Build Alternative would be constructed within 0.25 mile of three additional schools in the Acton area compared to the Refined SR14 Build Alternative. With the exception of these schools, such impacts would be identical to those resulting from the implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively.

All six Build Alternatives would comply with federal and state regulations to reduce the potential for the release of large quantities of hazardous materials and wastes into the environment. As required by HMW-MM#1, the contractor will prepare a memorandum regarding BMPs for hazardous materials throughout construction and operations. The memorandum will confirm that the contractor will not, within 0.25 mile of a school, handle or store an extremely hazardous substance (as defined in Cal. Public Res. Code Section 21151.4) in a quantity equal to or greater than the state threshold specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code. The memorandum will acknowledge that, prior to construction activities, signage will be installed to delimit work areas within 0.25 mile of a school, informing contractors not to bring extremely hazardous substances into the area. The contractor will be required to monitor use of extremely hazardous substances. The memorandum will be submitted to the Authority prior to construction involving an extremely hazardous substance. An operations plan will be created by the Authority and coordinated with the educational facilities to document compliance.

3.10.8.5 Landfill Hazards

Installation of HSR facilities would take place within the vicinity of existing or historical landfill sites. Overall, landfill sites are generally concentrated near urbanized communities surrounding the city of Palmdale and in the San Fernando Valley. The Refined SR14, E1, and E2 Build Alternative landfill RSAs encompass identical landfill sites in the city of Palmdale and near the Burbank Airport Station. Between Palmdale and the San Fernando Valley, each of the six Build Alternative landfill RSAs encompasses different landfill facilities, mapped in Figure 3.10-A-1 through Figure 3.10-A-18. The Refined SR14 and E1 Build Alternatives would encounter the same total number of landfills, but such landfills would be in different locations. The SR14A and E1A Build Alternatives would encounter more landfills (25 – 26 landfill sites) than the Refined SR14 and E1 Build Alternatives (21 – 25 landfill sites). The E2A Build Alternative would encounter identical landfills as the E2 Build Alternative (16 landfill sites).

Current regulations require operating and most closed landfills to implement landfill gas-migration control systems and monitoring programs. Additionally, most active and many closed landfills have landfill gas-capture and treatment/destruction systems. Therefore, the likelihood of methane

landfill gas affecting an area beyond the boundaries of a given landfill property is low. Furthermore, work within 1,000 feet of a landfill would require methane protection measures, such as automatic methane gas sensors pursuant to State of California Title 27, Environmental Protection – Division 2, Solid Waste, and would be coordinated with California's Department of Resources Recycling and Recovery. Impacts associated with landfills would be addressed in technical memoranda documenting methane protection measures (GEO-IAMF#3, HMW-IAMF#2, HMW-IAMF#3, and HMW-IAMF#10).

3.10.8.6 Oil and Gas Wells

Hazards associated with oil and gas wells include the ignition of flammable vapors (e.g., methane) or liquids (e.g., petroleum) and the release of petroleum products into the environment. Although none of the Build Alternative alignments would traverse a known oil or natural gas field, the Refined SR14 and E1 Build Alternatives would tunnel within 150 feet of one plugged oil/gas dry hole, and the E2 Build Alternative would tunnel within 150 feet of one to two plugged and buried oil and gas production wells. None of the Build Alternatives are within an area of naturally occurring petroleum, which would reduce the chance of associated leaks or hazards during operation of the Build Alternatives. The SR14A, E1A, and E2A Build Alternatives would be within 150 feet of plugged oil/gas wells. Such impacts would be identical to those resulting from implementation of the Refined SR14, E1, and E2 Build Alternatives, respectively.

Risk reduction methods include capping active wells, regularly testing for gas leaks, employing explosion-proof construction equipment, and implementing a spill prevention plan. SS-IAMF#4 will require the inspection of abandoned and active oil wells that could pose risks to each of the six Build Alternatives. Also, prior to construction and maintenance activities, hazardous materials monitoring plans will establish cleanup and abatement procedures (HMW-IAMF#10). HMW-IAMF#4 will require that the CMP set forth procedures to be followed by construction personnel regarding the potential disturbance of undocumented contamination associated with oil and natural gas resources or facilities. Adherence to these procedures would reduce the potential for spills, explosions, or other hazards. HMW-IAMF#6 and HMW-IAMF#8 will regulate the storage, transportation, and disposal of petroleum contamination. With implementation of these IAMFs, construction of the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives would not create a significant hazard to the public or the environment resulting from conditions that involve the release of hazardous materials at oil and natural gas facilities.

3.10.9 CEQA Significance Conclusions

Table 3.10-8 summarizes impacts, the level of significance before mitigation, mitigation measures, and the level of CEQA significance for all six Build Alternatives. After mitigation, the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives would result in less than significant hazardous materials and wastes impacts.

Table 3.10-8 Summary of CEQA Significance Conclusions and Mitigation Measures for Hazardous Materials and Wastes

Impact	Level of CEQA Significance before Mitigation						Mitigation Measures	Level of CEQA Significance after Mitigation					
	Refined SR14	SR14A	E1	E1A	E2	E2A		Refined SR14	SR14A	E1	E1A	E2	E2A
Construction Impacts													
Impact HMW#1: Hazards Due to the Routine Transport, Use, or Disposal of Hazardous Materials during Construction.	LTS	LTS	LTS	LTS	LTS	LTS	No mitigation measures are required	N/A	N/A	N/A	N/A	N/A	N/A
Impact HMW#2: Potential to Encounter PEC Sites with Known and/or Suspected Contamination during Construction.	LTS	LTS	LTS	LTS	LTS	LTS	No mitigation measures are required	N/A	N/A	N/A	N/A	N/A	N/A
Impact HMW#3: Potential for Handling Hazardous Materials or Waste Within 0.25 mile of an Educational Facility during Construction.	S	S	S	S	S	S	HMW-MM#1	LTS	LTS	LTS	LTS	LTS	LTS
Impact HMW#4: Potential for Facilities Associated with all six Build Alternatives to be Located Adjacent to Landfills.	LTS	LTS	LTS	LTS	LTS	LTS	No mitigation measures are required	N/A	N/A	N/A	N/A	N/A	N/A
Impact HMW#5: The Construction Footprint Would be in the Vicinity of Oil and Natural Gas Resources or Facilities.	LTS	LTS	LTS	LTS	LTS	LTS	No mitigation measures are required	N/A	N/A	N/A	N/A	N/A	N/A

Impact	Level of CEQA Significance before Mitigation						Mitigation Measures	Level of CEQA Significance after Mitigation					
	Refined SR14	SR14A	E1	E1A	E2	E2A		Refined SR14	SR14A	E1	E1A	E2	E2A
Operations Impacts													
Impact HMW#6: Hazards Due to the Routine Transport, Use, or Disposal of Hazardous Materials during Operation.	LTS	LTS	LTS	LTS	LTS	LTS	No mitigation measures are required	N/A	N/A	N/A	N/A	N/A	N/A
Impact HMW#7: Hazards Due to Operation Within Areas of Historical Contamination. .	LTS	LTS	LTS	LTS	LTS	LTS	No mitigation measures are required	N/A	N/A	N/A	N/A	N/A	N/A
Impact HMW#8: Potential for Handling Hazardous Materials or Waste Within 0.25 mile of an Educational Facility during Operations.	S	S	S	S	S	S	HMW-MM#1	LTS	LTS	LTS	LTS	LTS	LTS

Where data for the SR14A, E1A, and E2A Build Alternatives differ from the Refined SR14, E1, and E2 Build Alternatives, findings are denoted with a dual rating (i.e., Refined SR14/SR14A). One value indicates there is no difference in effects between the Refined SR14, E1, or E2 Build Alternatives and the respective SR14A, E1A, or E2A Build Alternatives.

CEQA = California Environmental Quality Act

S = Significant

LTS = Less than Significant

N/A = not applicable

PEC = potential environmental concern

3.10.10 United States Forest Service Impact Analysis

This section summarizes hazardous materials and waste effects associated with each of the six Build Alternatives in the ANF, including lands within the ANF that are a part of SGMNM.

3.10.10.1 Consistency with Applicable United States Forest Service Regulations

Appendix 3.1-B, USFS Policy Consistency Analysis, contains a comprehensive evaluation of relevant laws, regulations, plans, and policies relative to areas within the ANF, including SGMNM. Policies in the Angeles National Forest Management Plan regarding hazardous materials and waste are related to establishing plans for preventing hazardous waste release, minimizing hazards from landfills, and protecting water quality from inflows of contaminants. The six Build Alternatives include HMW-IAMF#1 through HMW-IAMF#10, GEO-IAMF#10, HYD-IAMF#1, HYD-IAMF#4, and SS-IAMF#4. HMW-IAMF#1 through HMW-IAMF#10 will require the implementation of measures to avoid the release of hazardous chemicals within the ANF, including SGMNM, thereby avoiding negative impacts on water quality. These measures include, but are not limited to, the development of hazardous materials plans, establishment of procedures for the use and storage of hazardous materials, and identification policies for addressing spills. GEO-IAMF#10 will require gas monitoring to address hazards from landfills, while SS-IAMF#4 will establish procedures for the inspection of oil and gas wells. HYD-IAMF#1 and HYD-IAMF#2 will require the management and treatment of runoff from each of the six Build Alternative footprints. As such, all six Build Alternatives are considered consistent with these policies related to hazardous materials and waste.

3.10.10.2 United States Forest Service Resource Analysis

Construction Effects

Handling of Hazardous Materials

Construction of all six Build Alternatives would involve the use, storage, and transport of hazardous materials, such as substances commonly used at construction sites, waste materials, and existing contaminated soil or groundwater. For all six Build Alternatives, these activities would take place within or immediately adjacent to the ANF, including SGMNM. Exposure to hazardous materials through conditions, spills, or mishandling could affect the health of construction workers, nearby members of the public, and the environment. Spoils and other construction-related hazardous materials would be further evaluated through USFS' Special-use Permit. As discussed in Impact HMW#1 (Section 3.10.6.3), HMW-IAMF#4 through HMW-IAMF#8 will require the contractor to implement a series of plans and procedures to minimize hazards associated with use, storage, transportation, and disposal of hazardous material and waste pursuant to applicable law regulating such activities. HYD-IAMF#3 will require that the contractor prepare and implement a construction stormwater pollution prevention plan to avoid release from contaminated materials into runoff. With implementation of HMW-IAMF#4 through HMW-IAMF#8 and HYD-IAMF#3, construction of all six Build Alternatives would not create a significant hazard to the public or the environment resulting from the routine transport, storage, or use of hazardous materials, or reasonably foreseeable upset conditions that involve the release of hazardous materials on USFS lands.

Potential Environmental Concern Sites

All six Build Alternative construction footprints encompass known or suspected PEC sites, including sites on the Cortese list, which contain known or suspected contamination within the ANF, including SGMNM:

- **Refined SR14 Build Alternative**— As depicted in Figure 3.10-A-2, within the Refined SR14 Build Alternative PEC site RSA, there are three medium-priority PEC sites and one high-priority PEC site in the ANF, including SGMNM; two of these sites are along Sand Canyon Road, and the third is approximately 0.25 mile west of the Refined SR14 footprint. The Refined SR14 Build Alternative PEC site RSA contains two other medium-priority PEC sites

- and one high-priority/Cortese list site immediately adjacent to the ANF including SGMNM perimeter near Vulcan Mine.
- **SR14A Build Alternative**—The SR14A Build Alternative would also encounter PEC sites within the ANF, including SGMNM. The sites encountered would be identical to those encountered by the Refined SR14 Build Alternative described above.
 - **E1 Build Alternative**— The PEC site RSA within the ANF, including SGMNM for the E1 Build Alternative, would encounter no PEC sites in the ANF, including SGMNM.
 - **E1A Build Alternative**—The E1A Build Alternative would encounter no PEC sites in the ANF, including SGMNM.
 - **E2 Build Alternative**—There would be one medium-priority PEC site within the E2 Build Alternative PEC site RSA where the Build Alternative alignment traverses the ANF, including the SGMNM (Figure 3.10-A-13). The E2 Build Alternative would be east of this PEC site, north of the E2 adit locations.
 - **E2A Build Alternative**—The E2A Build Alternative would also encounter one medium-priority PEC site within the ANF, including SGMNM. The site would be identical to the site encountered by the E2 Build Alternative described above.

Impact HMW#2 (Section 3.10.6.3) identifies effects that could result from HSR construction near PEC sites. HMW-IAMF#1 will require a Phase I ESA and potentially a Phase II ESA to identify and characterize potential PEC site hazards. Per HMW-IAMF#6 through HMW-IAMF#8, hazardous materials and waste plans will be prepared to address spill prevention and establish procedures for the handling of various hazardous wastes, such as excavated soils, generated during remediation activities. Where PEC site hazards are unavoidable, preconstruction activities will address the requirements for building at those sites in coordination with applicable regulatory agencies. A Spill Protection, Control, and Countermeasure plan (or Spill Prevention and Response Plan if the total aboveground oil storage capacity is less than 1,320 gallons in storage containers greater than or equal to 55 gallons) shall prescribe BMPs to follow to prevent hazardous material releases and cleanup of any hazardous material releases that may occur. The plans will be prepared and submitted to the Project Construction Manager on behalf of the Authority and shall be implemented during construction. With the implementation of these IAMFs, construction of the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives through the ANF, including SGMNM, would not create a significant hazard to the public or the environment because of release of hazardous materials or wastes associated with contaminated sites on USFS lands.

Hazardous Material and Waste Handling near Educational Facilities

There are no educational facilities within ANF, including SGMNM boundaries, so the construction of the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives would not affect this resource on USFS lands.

Landfills

Landfills pose an environmental concern because of the potential to produce landfill gases (primarily methane and carbon dioxide). If unaddressed, landfill gas accumulation would present a direct hazard to HSR facilities, construction workers, the public, and the environment throughout construction and operations of all six Build Alternatives. A landfill in the northern San Fernando Valley extends into the ANF and within the landfill RSAs of the Refined SR14 and E1 Build Alternatives (Figure 3.10-A-3 and Figure 3.10-A-8). A second landfill is also along the E1 and E2 Build Alternatives on Aliso Canyon Road within the landfill RSA in the ANF, including SGMNM (Figure 3.10-A-8 and Figure 3.10-A-12). The SR14A, E1A, and E2A Build Alternative landfill RSAs would also encompass the aforementioned landfills within the landfill RSA in the ANF, including SGMNM (Figure 3.10-A-6). Such impacts would be identical to those resulting from the implementation the Refined SR14, E1, and E2 Build Alternatives, respectively. As discussed in Impact HMW#4 (Section 3.10.6.3), GEO-IAMF#3 and HMW-IAMF#2 will establish

measures to protect against methane-related hazards associated with construction activities near landfill sites. HMW-IAMF#3 and HMW-IAMF#10 will require hazardous materials monitoring plans and a technical memorandum establishing landfill gas prevention measures prior to operations. With implementation of these IAMFs, the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives would not create a significant hazard to workers, the public, or the environment resulting from conditions that involve the release of hazardous materials at landfills on USFS lands.

Oil and Natural Gas Hazards

The area between Palmdale and Burbank for areas within the ANF, which includes SGMNM, is an active oil-producing region. If unaddressed, petroleum extraction facilities would present a direct hazard to HSR facilities, construction workers, and the public. The Refined SR14, SR14A, E1, and E1A Build Alternative oil and natural gas wells/field RSAs do not contain oil or natural gas facilities in the ANF, including SGMNM.

Oil/Natural Gas Hazards

Hazards associated with oil and gas facilities include the ignition of flammable vapors (e.g., methane) or liquids (e.g., petroleum) and the release of petroleum product into the environment.

The E2 and E2A Build Alternative oil and natural gas wells/field RSA encompasses two plugged and dry hole oil/gas production wells inside the ANF, within the E2 and E2A adit in-holding footprint.⁷ Potential explosion and spill hazards during construction would be minimal for plugged, buried, and dry oil/gas wells. However, residual deposits of petroleum could still be present within the vicinity of such inactive facilities. As discussed in Impact HMW#5 (Section 3.10.6.3), HMW-IAMF#4 will require that the CMP set forth procedures to be followed by construction personnel regarding the potential disturbance of undocumented contamination associated with oil and natural gas resources or facilities. SS-IAMF#4 will require the inspection of abandoned and active oil wells that could pose risks to each of the six Build Alternatives. HMW-IAMF#6 and HMW-IAMF#8 will regulate the storage, transportation, and disposal of petroleum contamination. Given the above, the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives would not result in a significant hazard to workers, the public, or the environment resulting from accident conditions that involve the release of hazardous materials at oil/natural gas facilities on USFS lands.

Operations Effects

Emission and Handling of Hazardous Materials and Wastes

Operations of all six Build Alternatives would involve routine maintenance activities that would require the use of hazardous materials, which would generate hazardous waste. It is unlikely that hazardous materials would be handled within the rural areas between Palmdale and Burbank. Additionally, HSR trains would generate hazardous materials in the form of brake dust within the ANF, including SGMNM, that could enter groundwater in tunneled alignment areas. No station areas or maintenance facilities would be located in these areas. However, valve leakage along rail corridors within the ANF, including SGMNM, could release hazardous liquids or gases. Additionally, other potential hazardous materials, including herbicides and lubricants, could be used at ancillary facilities or along trackway within or adjacent to the ANF, including SGMNM. As discussed under impact HMW#6 (Section 3.10.6.3), adherence to federal and state regulations would ensure the proper use, transportation, storage, and disposal of hazardous materials. The implementation of HMW-IAMF#9 and HMW-IAMF#10 will minimize the usage of hazardous materials for all six Build Alternatives and will require preparation of hazardous materials monitoring plans during operations. HYD-IAMF#1 will require the use of low-impact development techniques to control stormwater runoff from track ballast within tunnels. With adherence to these measures, operations of the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives

⁷ In-holding refers to privately owned land inside the boundary of a national park, national forest, state park, or similar publicly owned, protected area.

would not create a significant hazard to the public or the environment resulting from the routine transport or use of hazardous materials on USFS lands.

Historical Contamination

As described above, each of the six Build Alternatives would require operations in areas with historical contamination within the ANF, including SGMNM. Preconstruction investigation and remedial treatment would minimize risks associated with PEC sites prior to the operations of each of the six Build Alternatives. However, residual contamination could cause impacts throughout the Palmdale to Burbank Project Section over the lifetime of the selected Preferred Alternative. As discussed in Impact HMW#7 (Section 3.10.6.3), HMW-IAMF#10 requires that a hazardous materials business plan will set forth binding procedures for appropriate handling and disposal of residual hazardous materials found during operations and maintenance activities. With implementation of HMW-IAMF#10, operations of the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives would not create a significant hazard to the workers, the public, or the environment in the ANF, including SGMNM, because of hazardous material or waste release associated with contaminated sites on USFS lands.

Hazardous Material and Waste Handling near Educational Facilities

As described above, there are no educational facilities within the RSA within the ANF, including SGMNM boundaries; therefore, operations of the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives would not affect this resource on USFS lands.

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