

3.9 Hazardous Materials

3.9.1 Introduction

This section describes the regulatory setting and environmental setting for hazardous materials in the vicinity of the Proposed Project (including all track variants, technology variants, and the Greenville and Mountain House initial operating segments [IOS]) and the alternatives analyzed at an equal level of analysis (i.e., the Southfront Road Station Alternative, Stone Cut Alignment Alternative, West Tracy Operation and Maintenance Facility [OMF] Alternative, Mountain House Station Alternative, and Downtown Tracy Station Parking Alternatives 1 and 2). It also describes the impacts on hazardous materials that would result and mitigation measures that would reduce significant impacts, where feasible.

The term “hazardous material” is defined in this section as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (abbreviated from the California Health and Safety Code [Health & Saf. Code] Section 25501). The term “hazardous waste” generally refers to a hazardous material that has been used for its original purpose and is about to be discarded or recycled. In California, a hazardous waste is defined as a waste, or combination of wastes, that due to its quantity, concentration, or physical, chemical, or infectious characteristics may do one of the following.

- Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.
- Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed (Abbreviated from Health & Saf. Code Section 25141).

Public safety concerns discussed in this section include the management of hazardous materials and the disturbance of existing hazardous materials in soil, ballast, groundwater, and building materials within the Proposed Project footprint during construction and operation. Section 3.16, *Safety and Security*, discusses the potential for hazards associated with wildland fires, impediments to emergency response or emergency evacuation plans, public airports/private airstrips, and potential hazards due to geometric design features.¹

There would be no differences in the physical impacts related to hazardous materials due to use of the diesel multiple unit (DMU), hybrid battery multiple unit (HBMU), battery-electric multiple unit (BEMU), or diesel locomotive haul (DLH) technology variants, so discussion in this section does not discuss them. Potential impacts associated with implementation of the Proposed Project and the alternatives analyzed at an equal level of detail assume the larger environmental footprint at proposed and alternative stations associated with a potential IOS (i.e., Greenville IOS, Mountain House IOS, Southfront Road Station Alternative IOS, and Mountain House Alternative IOS) and/or the expanded parking in 2040. As such, the analysis of the Proposed Project and the alternatives

¹ Ballast consists of gravel or coarse stone used to form the bed of a railroad track.

analyzed at an equal level of detail below considers the potential impacts associated with a potential IOS and/or the expanded parking in 2040.

Cumulative impacts from identified projects to hazardous materials, in combination with planned, approved, and reasonably foreseeable projects, are discussed in Chapter 4, *Other CEQA-Required Analysis*.

3.9.2 Regulatory Setting

This section summarizes federal, state, regional, and local regulations related to hazardous materials that are applicable to the Proposed Project and alternatives analyzed at an equal level of detail. This section also includes a list of key design standards and guidelines related to hazardous materials that will be used during design and construction of the Proposed Project.

3.9.2.1 Federal and State

Hazardous Materials Management

The U.S. Environmental Protection Agency (USEPA) is the lead agency with responsibility for enforcing federal laws and regulations that govern hazardous materials that can affect public health or the environment. The major federal laws and regulations pertaining to the management of hazardous materials for the Proposed Project are the Resources Conservation Recovery Act (RCRA), Toxic Substances Control Act (TSCA), and Federal Insecticide, Fungicide, and Rodenticide Act.

In 1976, RCRA was enacted to provide a general framework for USEPA to regulate hazardous waste from the time it is generated until its ultimate disposal. Under RCRA, a waste may be considered “hazardous” if it exhibits certain hazardous characteristics (i.e., ignitability, corrosivity, reactivity, or toxicity), or if it is included on a specific list of wastes that USEPA has determined are hazardous. In accordance with RCRA, facilities that generate, treat, store, or dispose of hazardous waste are required to ensure that the waste is properly managed from “cradle to grave” by complying with the federal waste manifest system. In California, the Department of Toxic Substances Control (DTSC) administers the RCRA program, as well as additional state-specific requirements for managing hazardous waste in accordance with the California Hazardous Waste Control Law (via Health & Saf. Code Section 25100 et seq.). The state criteria for identifying hazardous waste, as described in Title 22 of the California Code of Regulations (Cal. Code Regs.) Sections 66261.10–66261.24, are more comprehensive than the federal RCRA hazardous waste criteria; therefore, hazardous wastes in California can be identified as either RCRA hazardous waste or non-RCRA hazardous waste.

In 1976, TSCA was enacted to provide USEPA authority to regulate the production, transportation, use, and disposal of chemicals that pose a risk of affecting public health and the environment. TSCA and subsequent amendments give USEPA authority to regulate the cleanup and/or abatement of sites with specific toxic chemicals, such as polychlorinated biphenyls (PCBs), asbestos-containing materials (ACMs), and lead-based paint.

In 1972, an amendment to the Federal Insecticide, Fungicide, and Rodenticide Act provided USEPA authority to regulate the manufacture, distribution, and import of pesticides. USEPA approves registered uses of a pesticide based on an evaluation of its potential effects on human health and the environment. USEPA has granted the California Department of Pesticide Regulation (DPR) authority to enforce federal laws pertaining to the proper and safe use of pesticides (Cal. Code Regs. Title 3). DPR can also designate pesticides as “restricted material” based on potential effects on public health,

applicators, farm workers, domestic animals, honey bees, the environment, wildlife, or crops other than those being treated.

In California, hazardous waste and materials handling are regulated under the Unified Program. The Unified Program consolidates the administrative requirements, permits, inspections, and enforcement activities for the following existing programs.

- Hazardous Waste Generator and Tiered Permitting Program (Health & Saf. Code Chapter 6.5)
- Underground Storage Tank Program (Health & Saf. Code Chapter 6.7)
- Aboveground Petroleum Storage Tank Program (Health & Saf. Code Chapter 6.67)
- California Accidental Release Prevention Program (Health & Saf. Code Chapter 6.95)
- Hazardous Materials Release Response Plan and Inventory Program (Health & Saf. Code Chapter 6.95)
- Hazardous Material Management Plan and Hazardous Material Inventory Statement Program (California Fire Code and Health & Saf. Code Chapter 1)

The Unified Program requires facilities to properly manage hazardous materials and disclose information regarding such materials to minimize the risk of a hazardous materials release and improve emergency response actions in the event of a release. The California Environmental Protection Agency (Cal/EPA) oversees the entire program, and local government agencies, known as Certified Unified Program Agencies (CUPA), implement and enforce the elements of the Unified Program. The following state agencies are involved with the Unified Program: Cal/EPA, DTSC, the State Water Resources Control Board (SWRCB), the Governor's Office of Emergency Services, and the Office of the State Fire Marshal.

Worker Health and Safety

The Occupational Safety and Health Administration (OSHA) is the federal agency responsible for enforcing and implementing federal laws and regulations pertaining to worker health and safety. OSHA's Hazardous Waste Operations and Emergency Response regulations require training and medical supervision for workers at hazardous waste sites (per Title 29 of the Code of Federal Regulations [CFR] Section 1910.120). Additional regulations have been developed regarding exposure to lead (CFR Title 29, Section 1926.62) and asbestos (CFR Title 29, Section 1926.1101) to protect construction workers.

State worker health and safety regulations related to construction activities are enforced by the California Division of Occupational Safety and Health (Cal/OSHA). These regulations include requirements for protective clothing, training, and limits on exposure to hazardous materials. Cal/OSHA also enforces occupational health and safety regulations specific to lead and asbestos investigation and abatement. These regulations equal or exceed their federal counterparts. Specific worker safety measures for excavation hazards (e.g., falling or cave-in of the excavation wall) are described in the Cal. Code Regs. Title 8, Section 1541.

Hazardous Building Materials

Hazardous building materials are commonly found in a variety of structures, including buildings, bridges, roadways, and railroad corridors. The proper management of hazardous building materials

in accordance with various regulations during demolition and renovation activities is described below.

Asbestos-Containing Materials

Exposure to asbestos, a state-recognized carcinogen, can result in lung cancer, mesothelioma (i.e., cancer of the linings of the lungs and abdomen), or asbestosis (scarring of lung tissues that results in constricted breathing). Asbestos-containing materials (ACMs), such as thermal system insulation, surfacing materials, and asphalt and vinyl flooring, may be present in building and bridge structures constructed prior to 1981 (Cal. Code Regs. Title 8, Section 5208). Therefore, workers who conduct asbestos abatement must be trained in accordance with state and federal OSHA requirements. California's local air districts oversee the removal of regulated ACMs; the Proposed Project would be located within the jurisdictions of the Bay Area Air Quality Management District and the San Joaquin Valley Air Pollution Control District. All friable (i.e., crushable by hand) ACMs, or non-friable ACMs that may be damaged, must be abated prior to demolition in accordance with applicable requirements. Friable ACMs must be disposed of as asbestos waste at an approved facility. Non-friable ACMs may be disposed of as non-hazardous waste at landfills that accept such wastes.

Naturally occurring asbestos (NOA), which is dependent on a type of geologic formation, can also be a source of ACMs that can become airborne during earth-moving activities. NOA is most commonly found in serpentinite and ultramafic rocks (Van Gosen and Clinkenbeard 2011). Based on a review of geologic mapping by Wagner et al. (1991) the Proposed Project footprint is not located in any areas of serpentinite or ultramafic rock; therefore, NOA would not pose a hazard for the Proposed Project and is not discussed further in this EIR.

Lead-Based Paint

Exposure to lead, a state-recognized carcinogen, can result in stomach and lung cancer and impair nervous, renal, cardiovascular, and reproductive systems. Although lead-based paint in residential structures was banned in 1978, this restriction did not apply to commercial and industrial structures (e.g., buildings and bridges); therefore, any commercial or industrial structure, regardless of construction date, could have surfaces that have been coated with lead-based paint (Department of Toxic Substances Control 2006). Loose and peeling lead-based paint must be disposed of as a state and/or federal hazardous waste if the concentration of lead equals or exceeds applicable waste thresholds. State and federal OSHA regulations require a supervisor who is certified with respect to identifying existing and predictable lead hazards to oversee air monitoring and other protective measures during demolition activities in areas where lead-based paint may be present. Special protective measures and notification of Cal/OSHA are required for highly hazardous construction tasks related to lead, such as manual demolition, abrasive blasting, welding, cutting, or torch burning of structures, where lead-based paint is present.

Prior to 1997, the California Department of Transportation (Caltrans) also used lead-based paint for yellow traffic stripe and pavement markings along roadways (California Department of Transportation 2015). The residue that may be produced from the yellow thermoplastic and yellow paint during road improvement activities may contain lead and chromium. The debris produced during the removal of yellow thermoplastic and yellow paint may need to be disposed of as a state or federal hazardous waste if the concentrations of lead or chromium exceed applicable hazardous waste thresholds.

Universal Wastes

Universal wastes include a wide variety of hazardous wastes that are commonly produced in households and businesses. For example, universal wastes include electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats that could contain hazardous materials such as PCBs, diethylhexyl phthalate, mercury, and other metals. The disposal of these materials is regulated under the California Universal Waste Rule (Cal. Code Regs. Title 22, Chapter 23), which is less stringent than most other federal and state hazardous waste regulations. To manage universal waste in accordance with the streamlined requirements for the state, generators must relinquish the waste to a universal waste transporter, another universal waste handler, or a universal waste destination facility.

Treated-Wood Waste

Railroad ties along existing railroad corridors are commonly treated with wood preservatives such as arsenic, chromium, copper, pentachlorophenol, or creosote. If treated-wood waste is not properly disposed of, the chemicals it contains can potentially contaminate soil, surface water, and/or groundwater. If treated-wood waste is classified as hazardous, it must be managed under full hazardous waste management requirements or under the Alternative Management Standards adopted by DTSC under Cal. Code Regs. Title 22, Chapter 34. In general, DTSC's Alternative Management Standards lessen storage requirements, extend accumulation periods, allow shipments without a hazardous waste manifest and a hazardous waste hauler, and allow disposal at specific non-hazardous waste landfills.

Hazardous Materials Release Sites

In California, USEPA has granted most enforcement authority of federal hazardous materials regulations to Cal/EPA. Under the authority of Cal/EPA, the SWRCB and DTSC are responsible for overseeing the remediation of contaminated soil and groundwater sites. The provisions of Government Code Section 65962.5 (also known as the Cortese List) require the SWRCB, DTSC, the California Department of Health Services, and the California Department of Resources Recycling and Recovery to submit information to Cal/EPA pertaining to sites that were associated with solid waste disposal, hazardous waste disposal, and hazardous materials releases.

Hazardous Materials Transportation

In 1990 and 1994, the federal Hazardous Materials Transportation Act was amended to strengthen regulations for protecting life, property, and the environment from the inherent risks of transporting hazardous materials in all major modes of commerce. Further, the U.S. Department of Transportation (USDOT) developed hazardous materials regulations pertaining to classification, packaging, transport, and handling, as well as regulations regarding employee training and incident reporting (CFR Title 49, Sections 171–180). The transport of hazardous materials is subject to both RCRA and USDOT regulations.

The California Highway Patrol, Caltrans, and DTSC are responsible for enforcing federal and state regulations pertaining to the transport of hazardous materials. If a discharge or spill of hazardous materials occurs during transportation, the transporter is required to take appropriate immediate action to protect human health and the environment (e.g., notify local authorities and contain the spill); the transporter is also responsible for cleanup (Cal. Code Regs. Title 22, Section 66260.10 et seq.).

Petroleum Pipelines

Petroleum pipelines have been subject to pipeline safety and maintenance regulations since 1979, including the federal Hazardous Liquid Pipeline Safety Act (CFR Title 49, Section 195.412) and state regulations (California Government Code Title 5, Sections 51010–51019.1). These regulations require that petroleum pipelines be designed with equipment, such as low-pressure alarms and safety shut-down devices, to minimize spill volume in the event of a leak.

3.9.2.2 Regional and Local

Appendix I, *Regional Plans and Local General Plans*, provides a list of applicable goals, policies, and objectives from regional and local plans of the jurisdictions in which the Proposed Project is located. Section 15125(d) of the CEQA Guidelines requires an EIR to discuss “any inconsistencies between the Proposed Project and applicable general plans, specific plans, and regional plans.” These plans were considered during the preparation of this analysis and were reviewed to assess whether the Proposed Project would be consistent with the plans of relevant jurisdictions.² The Proposed Project would be generally consistent with the applicable goals, policies, and objectives related to hazardous materials identified in Appendix I.

3.9.3 Environmental Setting

This section describes the environmental setting related to hazardous materials by segment. For purposes of this analysis, the study area for hazardous materials consists of:

- Potential sources of hazardous materials within and adjacent to the Proposed Project footprint.
- K-12 schools within 0.25 mile of the Proposed Project footprint.

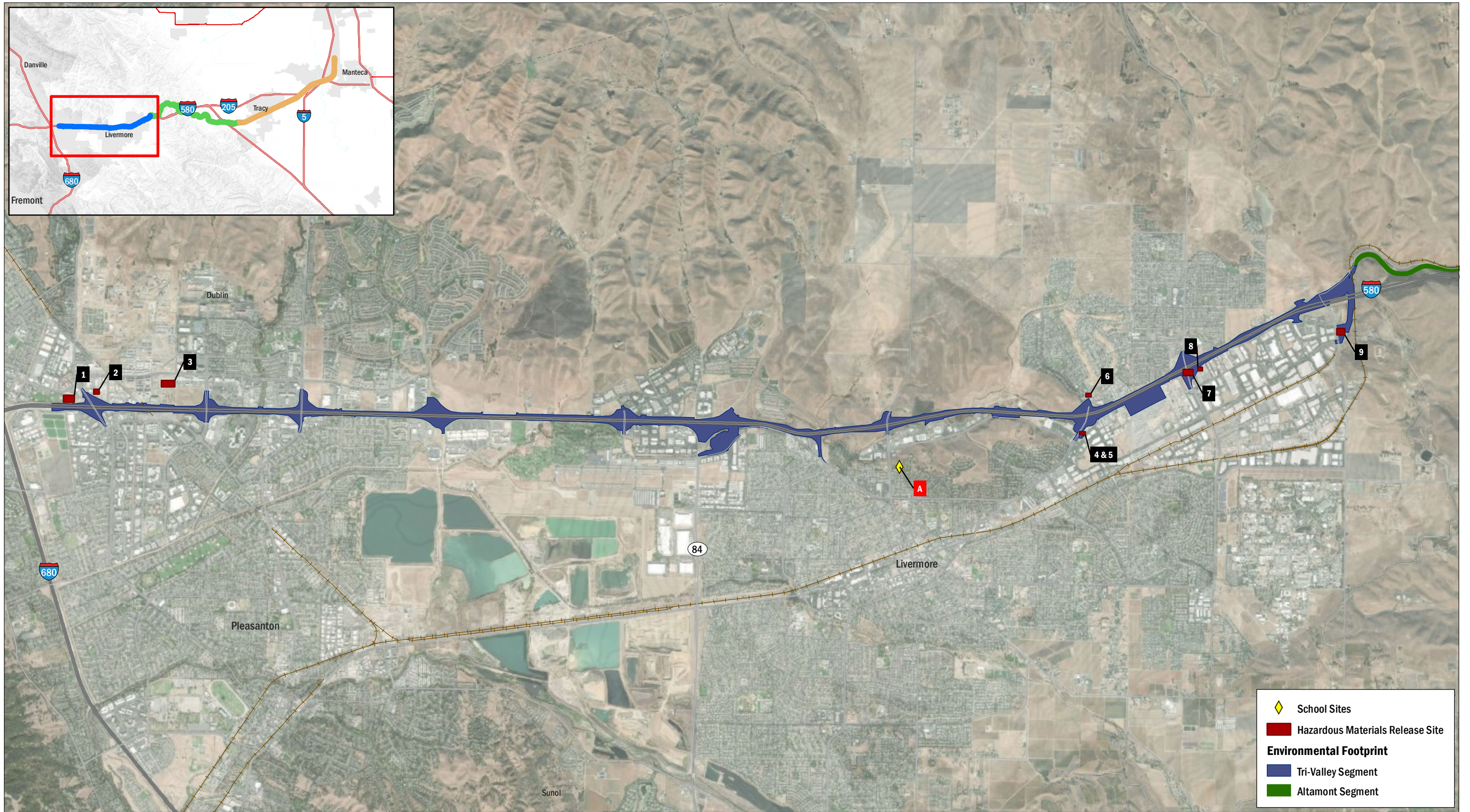
The locations of these facilities by segment are shown in Figures 3.9-1A and 3.9-1B.

3.9.3.1 Overview of Potential Sources of Hazardous Materials

Hazardous Building Materials from Building, Bridge, Roadway, and Railroad Structures

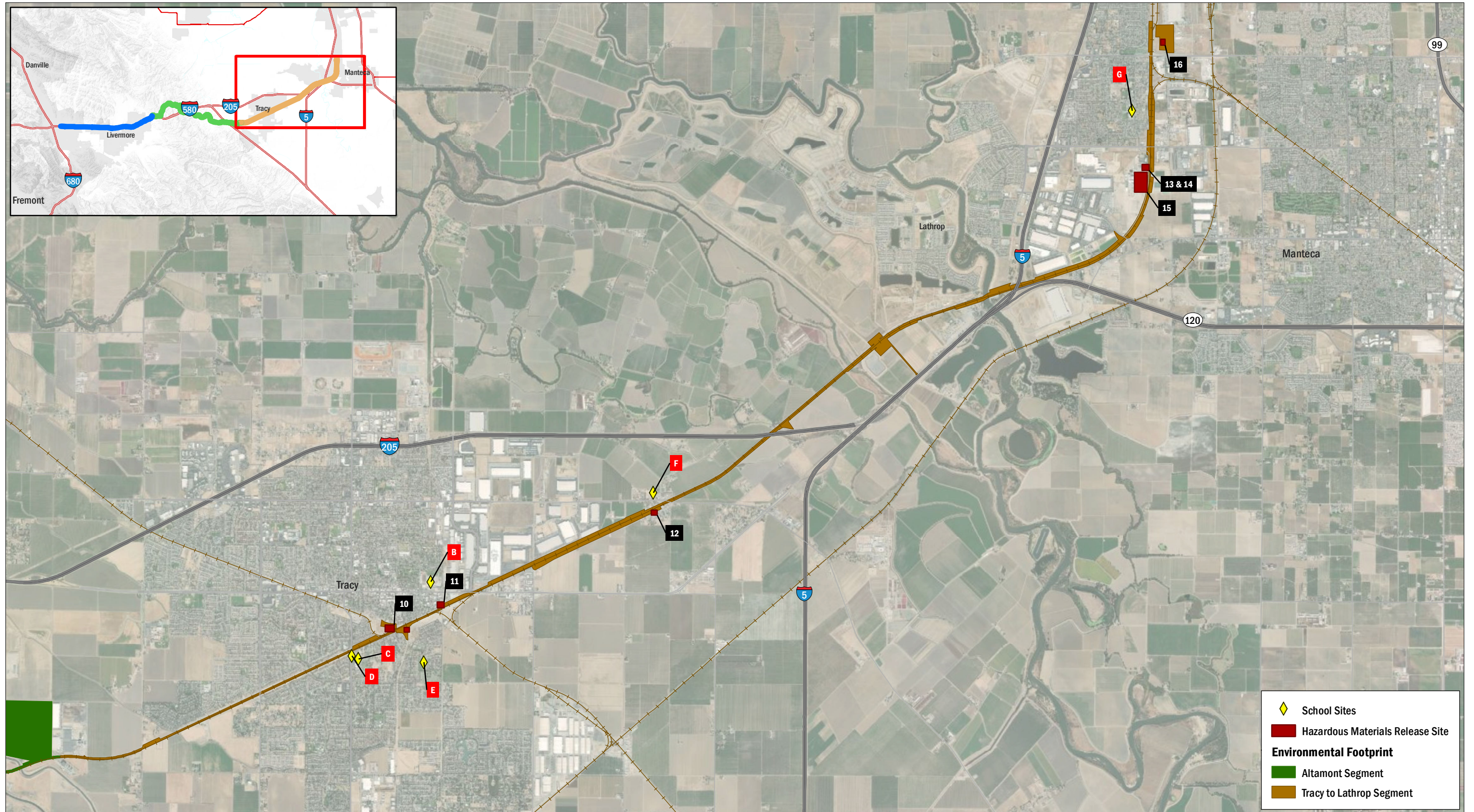
As described in above, hazardous building materials could pose a health risk to construction workers, maintenance workers, and the public if not handled and disposed of properly. Existing building, bridge, roadway, and railroad structures within the study area may contain hazardous building materials. Any building or bridge structures constructed before 1981 could potentially contain ACMs. Any residential building structures constructed before 1979 and any commercial or industrial building or bridge structures (regardless of construction date) could potentially contain lead-based paint. All yellow traffic stripes and pavement markings applied to roadways before 1997 could also contain lead-based paint. All railroad ties along existing railroad corridors could contain wood preservatives, such as arsenic, chromium, copper, pentachlorophenol, or creosote. Existing buildings could also contain other common hazardous materials (e.g., PCBs, diethylhexyl phthalate, mercury, and other metals) that could be encountered during demolition activities.

² An inconsistency with regional or local plans is not necessarily considered a significant impact under CEQA, unless it is related to a physical impact on the environment that is significant in its own right.



Data Sources: Esri Imagery, 2017; AECOM, 2019

FIGURE 3.9-1A
Hazardous Waste Sources
Tri-Valley Segment



Data Sources: Esri Imagery, 2017; AECOM, 2019

FIGURE 3.9-1B
*Hazardous Waste Sources
Tracy to Lathrop Segment*

Contamination from Railroad Corridors

According to the Rails-to-Trails Conservancy (2004), the most commonly reported sources of soil contamination along railroad corridors are metals and petroleum products from railroad operation. For example, elevated concentrations of arsenic are common in shallow soils from historical applications of inorganic herbicides and leaching from chemically preserved railroad ties and/or arsenic-laced slag used as ballast material. Other sources of contaminants associated with historical railroad operation may include coal ash from engines and polynuclear aromatic hydrocarbons (PAHs) from diesel exhaust. The risk of soil contamination is generally greater at railyards and along railroad corridors that are adjacent to industrial areas, where historical loading practices, leaks during material transfers or storage, and repair activities may have contaminated the soil.

Several environmental investigations were conducted along an existing railroad corridor that is being redeveloped for the Bay Area Rapid Transit (BART) Silicon Valley Contaminant Management Plan (Earthtech, Inc. 2008) from Fremont to northern San Jose. The results from multiple investigations indicated that soil and ballast materials along the existing railroad corridor were not substantially affected by PCBs, volatile organic compounds (VOCs), semi-volatile organic compounds, or petroleum hydrocarbons. However, elevated concentrations of arsenic and lead in the shallow soil and ballast materials were present along much of the existing railroad corridor. These findings are consistent with the common contaminants reported along railroad corridors by the Rails-to-Trails Conservancy (2004). Therefore, elevated concentrations of metals and petroleum hydrocarbons could potentially be present in shallow soil and ballast materials along existing and abandoned railroad corridors within the Proposed Project footprint.

Hazardous Materials from Known Release Sites

In addition to searches of the GeoTracker (State Water Resources Control Board 2019) and EnviroStor (Department of Toxic Substances Control 2019) hazardous materials databases, Environmental Data Resources, Inc. (EDR) was retained to perform a search of known hazardous materials release sites within the Proposed Project footprint. EDR (2019) searched over 100 federal, tribal, state, and local hazardous materials databases, including those that are maintained as part of the Cortese List. The locations of known open, active sites (or closed sites with recorded land use controls) within or adjacent to the Proposed Project footprint that could result in hazardous materials issues for the Proposed Project are shown on Figures 3.9-1A and 3.9-1B. Details related to these sites are presented below by segment.

Underground Pipelines

Pipelines containing natural gas, jet fuel, and wastewater may be located in some of the areas where Project-related construction would occur. The approximate locations of natural gas and jet fuel pipelines in the hazardous materials study area were delineated based on mapping from the Pipeline and Hazardous Materials Safety Administration (PHMSA) (Pipeline and Hazardous Materials Safety Administration 2018) Public Map Viewer (see Figures 3.9-2A and 3.9-2B). In accordance with PHMSA's security policy, the scale of the Public Map Viewer is restricted to 1:24,000, and the minimum accuracy of the mapped pipeline locations is 500 feet. Health and safety hazards could occur if earthmoving activities disrupt pipelines. In addition, previous accidental releases from pipelines could result in exposure of construction workers to hazardous materials. The potential for underground pipelines to represent a hazard within the Proposed Project footprint is discussed below for each of the three segments.

Pesticide Residues and Other Hazards from Agricultural Land Uses

Prior to 1950, inorganic pesticides that contained elevated concentrations of metals, such as arsenic, were commonly used in California agriculture. After 1950, organochlorine pesticides were commonly used in California agriculture until about the mid-1970s. Arsenic from inorganic pesticides and residues from organochlorine pesticides used in the past have the potential to persist for many decades in shallow soils and can affect human health and the environment (Department of Toxic Substances Control 2008). The storage of agricultural chemicals and fuels in the large quantities necessary for agricultural operation frequently requires the use of aboveground and/or underground storage tanks. These tanks could pose a health hazard to workers and a hazard to the environment if encountered during construction activities. In addition, agricultural land uses often require wells, underground piping, and other subsurface infrastructure that could become a hazard if encountered during construction activities.

The approximate locations of existing agricultural land used for irrigated agricultural production or non-irrigated orchards and vineyards in the study area were delineated based on available mapping of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) in 2016 (see Section 3.2, *Agricultural Resources*, for more information). The potential for agricultural land activities to pose a hazard within the Proposed Project footprint is discussed below for each of the three segments.

Schools

K–12 schools located within 0.25 mile of the Proposed Project footprint are identified on Figures 3.9-1A and 3.9-1B, and are presented below by segment.

3.9.3.2 Tri-Valley Segment

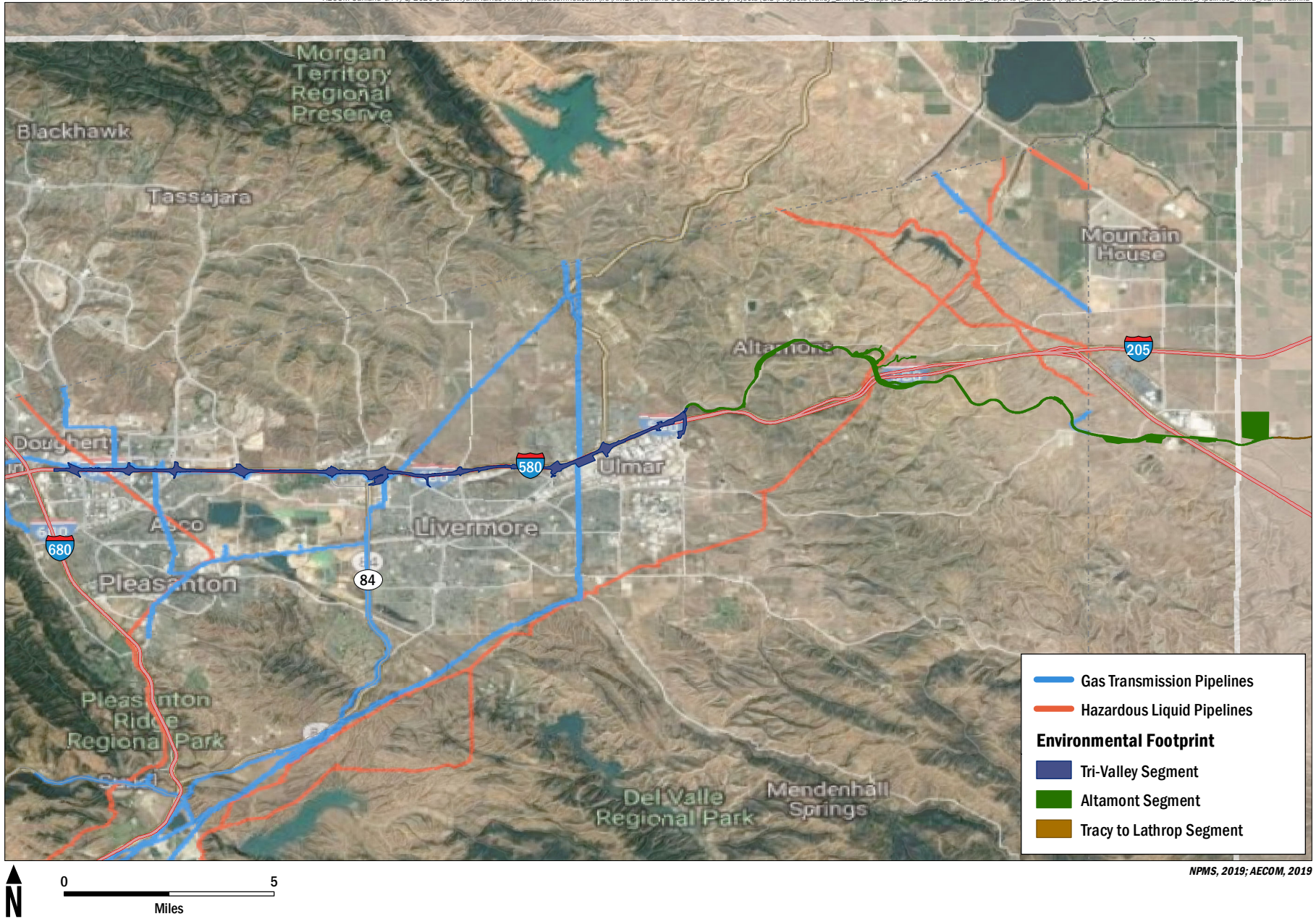
Buildings, bridges, roadways with yellow pavement stripes and markings, and the railroad corridor under Interstate-(I-)580 east of Greenville Road could have affected existing conditions within the Tri-Valley segment. Details related to known hazardous materials release sites within the study area, underground pipelines, and agricultural land uses within the Tri-Valley segment, are presented below.

Hazardous Materials Release Sites

Table 3.9-1 lists hazardous materials release sites of concern that could have affected soil and/or groundwater within or adjacent to the Proposed Project footprint of the Tri-Valley segment. The locations of these sites are shown on Figure 3.9-1A.

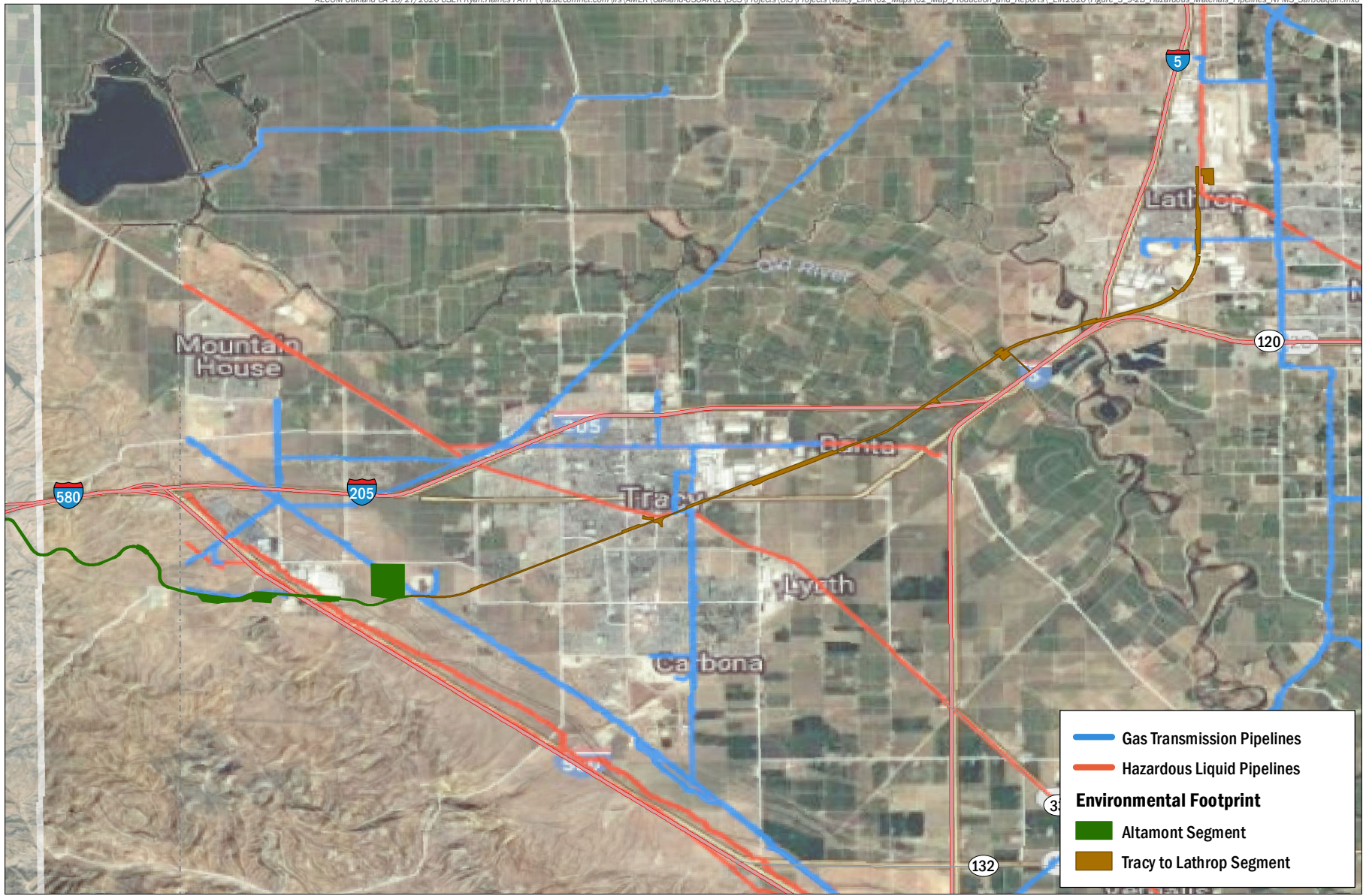
Table 3.9-1. Tri-Valley Segment—Hazardous Materials Release Sites of Concern

Site ID (Figure 3.9-1A)	Site Name, Address, and Regulatory Agency ID	Potential Media Affected		Contaminants of Concern and Cleanup Status
		Soil	Ground- water	
1	Dublin Toyota Pontiac 6450 Dublin Court Dublin, CA	X	X	COCs: benzene, ethylbenzene, gasoline, MTBE, TBE, other fuel oxygenates, toluene, and xylene.



NPMS, 2019; AECOM, 2019

FIGURE 3.9-2A
Hazardous Materials Pipelines in Alameda County



NPMS, 2019; AECOM, 2019

FIGURE 3.9-2B
Hazardous Materials Pipelines in San Joaquin County

Site ID (Figure 3.9-1A)	Site Name, Address, and Regulatory Agency ID	Potential Media Affected		Contaminants of Concern and Cleanup Status
		Soil	Ground- water	
	T0600102153			Status: Contaminated soil was removed. Contaminated groundwater plume, which extends south of I-580, was extracted and treated. Monitoring wells installed and vapor testing conducted. Case is eligible for closure.
2	Busick Gearing Properties 6341 Scarlett Court Dublin, CA SL20256874		X	COC: Trichloroethylene. Status: Methods to remediate contaminated groundwater, along with extent of contaminated groundwater plume, are under investigation.
3	The Green 5411 Martinelli Way Dublin, CA T1000005547	X	X	COCs: Diesel, gasoline, other insecticides / pesticide / fumigants / herbicides, other solvent or non-petroleum hydrocarbon, tetrachloroethylene. Status: Former U.S. Army Camp Parks Reserve Forces Training Area. Site investigation and remediation ongoing since mid-1990s. Petroleum hydrocarbons are present in groundwater. Soil stockpiles are contaminated and require removal.
4	Chevron Gas Station (AK Services, Inc.) 4707 First Street Livermore, CA T10000010821	X	X	COCs: TPH as gasoline and diesel, and naphthalene. Status: Preliminary investigations have discovered soil contamination. Investigation is ongoing related to groundwater and soil contamination.
5	UNOCAL #2611128 / BP #11128 / Former Chevron 4707 First Street Livermore, CA T0619756184, T0600100925	X	X	COCs: TPH as gasoline and diesel. Status: A contaminated groundwater plume extends westward underneath First Street. Groundwater was extracted and treated. Monitoring wells are in place. Contaminated soil was removed. Various land use restrictions are in place, including a requirement to prepare a Health & Safety plan prior to the start of any subsurface excavation.
6	Springtown Gas 909 Bluebell Drive Livermore, CA T06019716197	X	X	COCs: TPH as gasoline and diesel, MTBE. Status: Multiple releases have occurred. Contaminated soil was removed. A contaminated groundwater plume extends off site to the north and east. Groundwater has been treated via injection wells. Various land use restrictions are in place, including a requirement to prepare a Health & Safety plan prior to the start of any subsurface excavation.

Site ID (Figure 3.9-1A)	Site Name, Address, and Regulatory Agency ID	Potential Media Affected		Contaminants of Concern and Cleanup Status
		Soil	Ground- water	
7	Caltrans I-580 EB Shoulder (Vasco Road) 0 I-580 Freeway Livermore, Ca T10000001071	X	X	COCs: Gasoline. Status: Underground storage tanks were encountered during construction of the I-580 high-occupancy vehicle (HOV) lane. Contaminated soil was excavated to the extent feasible during and following tank removal. Limited groundwater contamination. Some residual contamination remains in place below the I-580 traffic lanes. Various land use restrictions are in place, including a requirement to prepare a Health & Safety plan prior to the start of any subsurface excavation.
8	Waste Management 6175 Southfront Road Livermore, CA T10000003066	X	X	COCs: Benzene, diesel, other chlorinated hydrocarbons, waste oil, motor oil, hydraulic and lubricating fluids, vinyl chloride in soil vapor. Status: Various land use restrictions are in place, including a requirement to prepare a Health & Safety plan prior to the start of any subsurface excavation.
9	TDW Construction 101 Greenville Road Livermore, CA SL0600147320	Unknown		COCs: Waste oil, motor oil, hydraulic and lubricating fluids. Status: Case is inactive but requires further investigation.

Sources: EDR 2019, State Water Resources Control Board 2019, California Department of Toxic Substances Control 2019

COCs = constituents of concern; TPH = total petroleum hydrocarbons; MTBE = methyl tertiary-butyl ether.

Note: All hazardous materials release sites of concern are active and/or have a recorded land-use restriction.

Pipeline Hazards

As shown on Figure 3.9-2A, there are several major natural gas transmission lines that cross underneath the Proposed Project footprint along I-580 from Dublin to Livermore. In addition, a major fuel pipeline (identified as a hazardous liquid pipeline on Figure 3.9-2A) crosses underneath I-580 in a northwest-southeast direction under the Iron Horse Regional Trail alignment (southwest of DeMarcus Boulevard) in Pleasanton (Pipeline and Hazardous Materials Safety Administration 2018).

Agricultural Land Hazards

The Proposed Project footprint in the Tri-Valley segment crosses through a few areas designated by the FMMP (2016) as grazing land on the north side of I-580 in the vicinity of Fallon Road and North Livermore Avenue. Past agricultural chemical usage in these areas is not likely to be an environmental health hazard because grazing land generally does not require the application of land-based agricultural chemicals that could persist in the soil. A search of the GeoTracker database

indicated there are no records of permitted underground storage tanks in these areas (State Water Resources Control Board 2019).

Schools

There is one school within 0.25 mile of the Proposed Project footprint in the Tri-Valley segment. This school is listed in Table 3.9-2 and shown on Figure 3.9-1A.

Table 3.9-2. Tri-Valley Segment—K-12 Schools within Study Area

Site ID (Figure 3.9-1A)	Type	School Name	Street Address	City
A	K-5	Valley Montessori School	1273 N. Livermore Avenue	Livermore

Source: Livermore School District 2019

3.9.3.3 Altamont Segment

Buildings, bridges, roadways with yellow pavement stripes and markings, the Alameda County Transportation Corridor right-of-way and Union Pacific Railroad (UPRR) right-of-way could have affected existing conditions within the Altamont segment. Details related to hazardous materials release sites within the study area, and underground pipelines and agricultural land uses within the Altamont segment, are presented below.

Hazardous Materials Release Sites

There are no known hazardous materials release sites of concern that could have affected soil and/or groundwater within or adjacent to the Proposed Project footprint of the Altamont segment.

Pipeline Hazards

As shown on Figure 3.9-2A, a major hazardous liquid pipeline crosses through the proposed Altamont Alignment in a northeast-southwest direction north of I-580. As shown on Figure 3.9-2B, two additional major hazardous liquid pipelines are located along both sides of I-580 east of Patterson Pass Road. Both of these pipelines cross through the Altamont Alignment, and one pipeline may cross through the Mountain House Station Alternative. A major natural gas transmission line is located underneath a portion of the proposed rail alignment along Patterson Pass Road, as well as through the proposed Tracy OMF (Pipeline and Hazardous Materials Safety Administration 2018).

Agricultural Land Hazards

The Proposed Project footprint throughout most of the Altamont segment, including the Mountain House Station Alternative, would be located on land designated by the FMMP (2016) as grazing land. Past agricultural chemical usage in these areas is not likely to be an environmental health hazard because grazing land generally does not require the application of land-based agricultural chemicals that could persist in the soil. A search of the GeoTracker database indicated there are no records of permitted underground storage tanks in these areas (State Water Resources Control Board 2019).

However, the Interim OMF, Mountain House Station, Tracy OMF, and West Tracy OMF Alternative would be located on land designated by the FMMP (2016) as Farmland of Local Importance, where

row crops may have been grown in the past. Therefore, an environmental health hazard could be present from previously unknown chemical and/or fuel storage tanks, and residual agricultural chemicals in the soil.

Schools

There are no K-12 schools within 0.25 mile of the Proposed Project footprint in the Altamont segment.

3.9.3.4 Tracy to Lathrop Segment

Buildings, bridges, roadways with yellow pavement stripes and markings, and the existing UPRR railroad corridor, could have affected existing conditions within the Proposed Project footprint located in the Tracy to Lathrop segment. Details related to hazardous materials release sites located within the study area, and underground pipelines and agricultural land uses within the Tracy to Lathrop segment, are presented below.

Hazardous Materials Release Sites

Table 3.9-3 lists hazardous materials release sites of concern that could have affected soil and/or groundwater within or adjacent to the Proposed Project footprint of the Tracy to Lathrop segment. The locations of these sites are shown on Figure 3.9-1B.

Table 3.9-3. Tracy to Lathrop Segment—Hazardous Materials Release Sites of Concern

Site ID (Figure 3.9-1B)	Site Name, Address, and Regulatory Agency ID	Potential Media Affected		Contaminants of Concern and Cleanup Status
		Soil	Ground- water	
10	Chevron, TAOC 6th Street, former Tracy Rail Yard 6th Street Tracy, CA T10000001235, T10000003120	X	X	COCs: Petroleum hydrocarbons in soil (crude oil) and groundwater (gasoline, diesel, and motor oil); PAHs (naphthalene) in soil, and VOCs (ethylbenzene) in soil. Status: Former Tracy Rail Yard; includes a portion of the former Tidewater Associated Oil Company pipeline system and the former Old Valley pipeline. Soil and groundwater contamination occurred from historic pipeline leaks. PAHs at levels above the estimated cancer risk threshold in soil 5 feet below the ground surface were found near one of the soil borings. Additional investigations and potential remedies are ongoing.
11	Union Pacific Railroad – Tracy Yard 720 E. 6th Street Tracy, CA SL185102895			COCs: TPH, VOCs. Status: Site is under multiple orders since 1990 for the excavation and removal of contaminated materials from a wastewater pond. The TPH plume is not migrating. UPRR has removed much of the free floating diesel product and VOCs, reduced contaminants in soil excavated from the

Site ID (Figure 3.9-1B)	Site Name, Address, and Regulatory Agency ID	Potential Media Affected		Contaminants of Concern and Cleanup Status
		Soil	Ground- water	
				wastewater ponds, and reduced the mass and extent of the diesel pollution over a period of several years. The site has been monitored semiannually for TPH in groundwater. Free product has been removed from groundwater monitoring wells, and the amount has steadily diminished each year. In December 2018 Union Pacific was authorized to decommission the monitoring wells.
12	Moore Petroleum Bulk Plant 5491 W. F Street Banta, CA T0607700183	X	X	COCs: TPH, benzene, toluene, ethylbenzene, and xylene Status: Contaminated soil removed with subsequent soil vapor extraction. Remediation of contaminated groundwater plume via air sparging and ozone sparging. Various land use restrictions are in place, including a requirement to prepare a Health & Safety plan prior to the start of any subsurface excavation.
13	J.R. Simplot Company 16777 Howland Road Lathrop, CA SL0607731692	X	X	COCs: TDS, nitrate, chloride, sulfate, and ammonium. Status: Releases from discharge ponds and other infrastructure. Discharge ponds are under Waste Discharge Requirements. Groundwater extraction and treatment have occurred. Groundwater monitoring is ongoing.
14	J.R. Simplot Company 16777 Howland Road Lathrop, CA T0607700166	X	X	COCs: Petroleum hydrocarbons, xylenes. Status: Leaking underground storage tank was removed. Groundwater monitoring is ongoing.
15	Occidental Chemical Agricultural Products Company 16777 Howland Road Lathrop, CA SLT5S0033055	X	X	COCs: Pesticides, herbicides, and fumigants, 1,2-dibromo-3-chloropropane (DBCP), ethylene dibromide, and 2,3,4,5-tetrahydrothiophene-1, 1-dioxide (sulfolane). Status: Contamination occurred from the 1950s to 1982. Cleanup has been ongoing since the 1980s. Contaminated soil was removed. Ongoing remediation of contaminated groundwater via extraction and treatment.
16	Defense Distribution San Joaquin CA-Sharpe - Sites P-1H and OU-2-P-1G Roth Road Lathrop, CA	X	X	COCs: Trichloroethylene, 1-2 Dichloropropane, carbon tetrachloride, chloroform, tetrachloroethylene. Status: Soil vapor extraction. Hydraulic control of contaminant plume migration

Site ID (Figure 3.9-1B)	Site Name, Address, and Regulatory Agency ID	Potential Media Affected		Contaminants of Concern and Cleanup Status
		Soil	Ground- water	
	T10000004420			and reduction of COCs via groundwater extraction and treatment using air stripping, and discharge of the treated effluent for industrial reuse, to surface water, and/or for recharge to groundwater. Groundwater treatment is ongoing. VOCs are a potential threat to indoor air if future buildings are constructed. Land use controls are in place.

Sources: Environmental Data Resources, Inc, 2019, State Water Resources Control Board 2019, California Department of Toxic Substances Control 2019

COCs = Constituents of Concern; PAH = polycyclic aromatic hydrocarbon; VOCs = volatile organic compounds; TPH = total petroleum hydrocarbons; TDS = total dissolved solids

Note: All hazardous materials release sites of concern are active and/or have a recorded land-use restriction.

Pipeline Hazards

As shown on Figure 3.9-2B, several major underground fuel and natural gas transmission lines cross through the Proposed Project footprint in Tracy (in a northwest-southeast direction through the Tracy Railyards, and along MacArthur Boulevard), Banta (at Grant Line Road), and Lathrop (at Lathrop Road, and along the existing UPRR alignment from the proposed North Lathrop Station to Louise Avenue) (Pipeline and Hazardous Materials Safety Administration 2018).

Agricultural Land Hazards

In the Tracy to Lathrop segment, the Proposed Project footprint in the area east of the Owens-Corning facility northeast to the southeast side of Tracy, a small area between the northeast side of Tracy and Banta, between the northeast side of Banta and Mossdale, as well as the proposed River Islands Station, is located on land designated by the FMMP (2016) as Prime Farmland. In addition, a small area near Vierra Road in southeast Lathrop is located on land designated as Farmland of Statewide Importance. Based on reviews of Google Earth (2018) imagery, these areas are or have been cultivated with crops. Most of the Proposed Project-related work that would be performed in these areas would occur within the existing UPRR right-of-way. However, the proposed River Islands Station would both be located on the north and south sides of the UPRR right-of-way in cultivated cropland. A search of the GeoTracker database indicated there are no records of permitted underground storage tanks in this area (State Water Resources Control Board 2019). However, previously unknown, older unpermitted storage tanks are frequently located on agricultural land. Potential soil or groundwater contamination can be associated with the location of underground and/or aboveground storage tanks, agricultural/chemical handling and storage areas, and waste disposal areas. Common chemical constituents associated with these uses include petroleum hydrocarbons, fertilizers, herbicides, and pesticides.

Schools

K-12 schools within 0.25 mile of the Proposed Project footprint in the Tracy to Lathrop segment are listed in Table 3.9-4. The locations of these schools are shown on Figure 3.9-1B.

Table 3.9-4. Tracy to Lathrop Segment—K-12 Schools within Study Area

Site ID (Figure 3.9-1B)	Type	School Name	Street Address	City
B	9-12	Tracy High School	315 E. 11th Street	Tracy
C	K-5	South/West Park Elementary School	500 W. Mt Diablo Road	Tracy
D	K	Montessori School of Tracy	100 S. Tracy Boulevard	Tracy
E	K-5	Louis A. Bohn Elementary School	350 E. Mt Diablo Avenue	Tracy
F	K-8	Banta Elementary School	22345 El Rancho Road	Tracy
G	K-8	Lathrop Elementary School	15851 5th Street	Lathrop

Sources: Banta Elementary School District 2019, California Department of Education 2019, Manteca Unified School District 2019.

3.9.4 Impact Analysis

This section describes the environmental impacts of the Proposed Project, including the station alternatives (Southfront Road Station Alternative, Mountain House Station Alternative, Downtown Tracy Station Parking Alternative 1, and Downtown Station Tracy Parking Alternative 2), the West Tracy OMF Alternative, and the Stone Cut Alignment Alternative, related to hazardous materials. It describes the methods used to evaluate the impacts and the thresholds used to determine whether an impact would be significant. Measures to mitigate significant impacts are provided, where appropriate.

3.9.4.1 Methods for Analysis

To assess the potential for construction activities associated with Proposed Project improvements to create a significant hazard for the public or environment related to the disturbance of hazardous materials within the study area, the impact analysis considers the potential sources of hazardous materials described above. Potential sources of hazardous materials identified within the study area were identified based primarily on the following data sources:

- *EDR Area Corridor Report, Valley Link EIR, Livermore, California (2019)*
- GeoTracker (State Water Resources Control Board 2019)
- EnviroStor (California Department of Toxic Substances Control 2019)
- Pipeline and Hazardous Materials Safety Administration National Public Mapping System (2018)
- California Department of Conservation Important Farmland Maps (2016)

3.9.4.2 Thresholds of Significance

CEQA Guidelines Appendix G (Cal. Code Regs. Title 14, Section 15000 et seq.) has identified significance criteria to be considered for determining whether a project could have significant impacts related to hazardous materials.

An impact would be considered significant if construction or operation of the Proposed Project (including all track and technology variants), the station alternatives (i.e., the Southfront Road Station Alternative, Mountain House Station Alternative, Downtown Tracy Station Parking

Alternative 1, and Downtown Tracy Station Parking Alternative 2), the Stone Cut Alignment Alternative, and the West Tracy OMF Alternative, would have any of the following consequences.

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

3.9.4.3 Impacts and Mitigation Measures

Impact HAZ-1a: Construction of the Proposed Project would not create a significant hazard to the public or the environment through routine transport, use, or disposal, or accidental release of hazardous materials.

Level of Impact	<p>Less than Significant</p> <p><u>Proposed Project</u></p> <p>Tri-Valley Alignment</p> <p>Dublin/Pleasanton Station</p> <p>Isabel Station</p> <p>Greenville Station</p> <p>Altamont Alignment</p> <p>Owens-Illinois Industrial Lead Variant 1, Single Track</p> <p>Owens-Illinois Industrial Lead Variant 2, Double Track</p> <p>Interim OMF</p> <p>Mountain House Station</p> <p>Tracy OMF</p> <p>Tracy to Lathrop Alignment Variant 1, Single Track</p> <p>Tracy to Lathrop Alignment Variant 2, Double Track</p> <p>Downtown Tracy Station</p> <p>River Islands Station</p> <p>North Lathrop Station</p> <p><u>Alternatives Analyzed at an Equal Level of Detail</u></p> <p>Southfront Road Station Alternative</p> <p>Stone Cut Alignment Alternative</p> <p>West Tracy OMF Alternative</p> <p>Mountain House Station Alternative</p> <p>Downtown Tracy Station Parking Alternative 1</p> <p>Downtown Tracy Station Parking Alternative 2</p>
Mitigation Measures	None Required

Impact Characterization

Construction activities associated with the Proposed Project are expected to involve the routine transport, use, and disposal of hazardous materials (e.g., fuels, paints, and lubricants) that could pose a significant threat to human health or the environment if not properly managed. These risks would be the same for all Proposed Project facilities and the alternatives analyzed at an equal level of detail in all segments. The transport, use, and disposal of hazardous materials during construction is regulated and enforced by federal and state agencies.

Workers who handle hazardous materials are required to adhere to OSHA and Cal/OSHA health and safety requirements. During construction, hazardous materials must be transported in accordance with RCRA and USDOT regulations, stored in accordance with the Unified Program enforced by local CUPAs, and disposed of in accordance with RCRA and Cal. Code Regs. at a facility that is permitted to accept the waste.

In accordance with the SWRCB, a stormwater pollution prevention plan must be prepared and implemented during construction for coverage under the Construction General Permit. As detailed in Section 3.10, *Hydrology and Water Quality*, the stormwater pollution prevention plan requires implementation of best management practices for hazardous materials storage and soil stockpiles, inspections, maintenance, training of employees, and containment of releases to prevent runoff into existing stormwater collection systems or waterways.

Impact Detail and Conclusions

Proposed Project

Adherence to federal and state regulations reduces the risk of exposure to hazardous materials used during construction, as well as accidental hazardous materials releases. Compliance with existing regulations is mandatory; therefore, construction of the Proposed Project is not expected to create a hazard to construction workers, the public, or the environment through the routine transport, use, disposal, or accidental release of hazardous materials. As a result, impacts related to the routine transport, use, disposal, or accidental release of hazardous materials during construction of the Proposed Project would be less than significant and no mitigation is required.

Alternatives Analyzed at Equal Level of Detail

Construction of the alternatives analyzed at an equal level of detail would require adherence to the same federal and state regulations that would be required for the construction of the Proposed Project. Thus, impacts related to the routine transport, use, disposal, or accidental release of hazardous materials during Proposed Project construction would be the same between the alternatives analyzed at an equal level of detail and the Proposed Project.

Impact HAZ-1b: Operation and maintenance of the Proposed Project would not create a significant hazard to the public or the environment through routine transport, use, or disposal, or accidental release of hazardous materials.

Level of Impact	Less than Significant
	<u>Proposed Project</u>
	Tri-Valley Alignment
	Dublin/Pleasanton Station

Isabel Station
 Greenville Station
 Altamont Alignment
 Interim OMF
 Owens-Illinois Industrial Lead Variant 1, Single Track
 Owens-Illinois Industrial Lead Variant 2, Double Track
 Mountain House Station
 Tracy OMF
 Tracy to Lathrop Alignment Variant 1, Single Track
 Tracy to Lathrop Alignment Variant 2, Double Track
 Downtown Tracy Station
 River Islands Station
 North Lathrop Station

Alternatives Analyzed at an Equal Level of Detail

Southfront Road Station Alternative
 Stone Cut Alignment Alternative
 Mountain House Station Alternative
 West Tracy OMF Alternative
 Downtown Tracy Station Parking Alternative 1
 Downtown Tracy Station Parking Alternative 2

Mitigation Measures None Required

Impact Characterization

Operation and maintenance activities associated with the Proposed Project are expected to involve the routine use of diesel fuel to power locomotives and pesticides to clear vegetation from track areas. Common activities such as fueling and pesticide applications could result in the exposure of workers, the public, and/or the environment to hazardous materials if the materials are not properly managed or accidentally released. These risks would be the same for all Proposed Project facilities and the alternatives analyzed at an equal level of detail in all segments. The transport, use, and disposal of hazardous materials during operation is regulated and enforced by federal and state agencies.

Workers who handle hazardous materials are required to adhere to OSHA and Cal/OSHA health and safety requirements. Pesticides used for vegetation removal near the tracks would be required to comply with DPR regulations, which are intended to protect human health and the environment. Hazardous materials must be transported in accordance with RCRA and USDOT regulations, managed in accordance with the Unified Program enforced by local CUPAs, and disposed of in accordance with RCRA and Cal. Code Regs. at a facility that is permitted to accept the waste.

Impact Detail and Conclusions

Proposed Project

Adherence to federal and state regulations and the Unified Program reduces the risk of exposure to hazardous materials, as well as accidental hazardous materials releases. Compliance with existing regulations and the Unified Program is mandatory; therefore, operation and maintenance of the Proposed Project is not expected to create a hazard to the public or the environment through the

routine transport, use, disposal, or accidental release of hazardous materials. As a result, impacts related to the routine transport, use, disposal, or accidental release of hazardous materials during operation and maintenance of the Proposed Project would be less than significant, and no mitigation is required.

Alternatives Analyzed at Equal Level of Detail

Operation of the alternatives analyzed at an equal level of detail would require adherence to the same federal regulations, state regulations, and Unified Program, which would also be required for operation of the Proposed Project. Thus, impacts related to the routine transport, use, disposal, or accidental release of hazardous materials during Proposed Project operation would be the same between the alternatives analyzed at an equal level of detail and the Proposed Project.

Impact HAZ-2: The Proposed Project is located on sites that are included on a list of hazardous materials sites and, as a result, could create a significant hazard to the public or the environment during construction due to disturbance of hazardous materials.

Level of Impact	<p>Potentially Significant</p> <p><u>Proposed Project</u></p> <p>Tri-Valley Alignment</p> <p>Dublin/Pleasanton Station</p> <p>Isabel Station</p> <p>Greenville Station</p> <p>Altamont Alignment</p> <p>Owens-Illinois Industrial Lead Variant 1, Single Track</p> <p>Owens-Illinois Industrial Lead Variant 2, Double Track</p> <p>Interim OMF</p> <p>Mountain House Station</p> <p>Tracy OMF</p> <p>Tracy to Lathrop Alignment Variant 1, Single Track</p> <p>Tracy to Lathrop Alignment Variant 2, Double Track</p> <p>Downtown Tracy Station</p> <p>River Islands Station</p> <p>North Lathrop Station</p> <p><u>Alternatives Analyzed at an Equal Level of Detail</u></p> <p>Southfront Road Station Alternative</p> <p>Stone Cut Alignment Alternative</p> <p>West Tracy OMF Alternative</p> <p>Mountain House Station Alternative</p> <p>Downtown Tracy Station Parking Alternative 1</p> <p>Downtown Tracy Station Parking Alternative 2</p>
Mitigation Measures	<p>HAZ-2.1: Conduct site investigations</p> <p>HAZ-2.2: Implement construction risk management plan</p> <p>AQ-2.5: Implement fugitive dust controls during construction</p>
Level of Impact after Mitigation	<p>Less than Significant</p>

Impact Characterization

Buildings, bridges, roadways with yellow pavement stripes, and railroad facilities located within the Proposed Project footprint for all three segments could potentially contain hazardous building materials, such as ACM, lead-based paint, universal wastes (e.g., PCBs, diethylhexyl phthalate, mercury, and other metals), wood preservatives (e.g., arsenic, chromium, copper, pentachlorophenol, or creosote), lead, and petroleum products. The disturbance of hazardous building materials could pose a health risk to construction workers, maintenance workers, the public, and/or the environment if not handled and disposed of properly. The removal of hazardous building materials prior to demolition is governed by federal and state laws and regulations. Workers who conduct hazardous materials abatement and demolition activities must be trained in accordance with OSHA and Cal/OSHA requirements. Hazardous building materials removed during construction must be transported in accordance with USDOT regulations and disposed of in accordance with RCRA, Cal. Code Regs., and/or the California Universal Waste Rule at a facility permitted to accept the wastes. Treated-wood waste, such as railroad ties, may also be disposed of in accordance with the Alternative Management Standards adopted by DTSC under Cal. Code Regs. Title 22, Chapter 34.

In addition to searches of the GeoTracker (State Water Resources Control Board 2019) and EnviroStor (Department of Toxic Substances Control 2019) hazardous materials databases, EDR (2019) was retained to review records from over 100 federal, tribal, state, and local hazardous materials databases, and databases. The results of these records searches are presented above. Proposed Project-related earthmoving activities (including excavation, boring, and grading) could encounter contaminated soil and/or groundwater from hazardous materials releases at known hazardous materials sites. In addition, Proposed Project-related earthmoving activities could also encounter previously unknown soil and/or groundwater contamination from pipeline releases, and past agricultural land uses (on cropland), including previously unknown leaking chemical and/or fuel storage tanks and residual agricultural chemicals in the soil.

Proposed Project-related construction activities that disturb existing soil and/or groundwater contamination from hazardous materials release sites or other sources could pose a health risk to construction workers, maintenance workers, the public, and/or the environment if not characterized, handled, and disposed of properly.

Table 3.9-5 identifies the sources of hazardous materials that could have affected soil, ballast, and groundwater for each of the Proposed Project facilities and the alternatives analyzed at an equal level of detail.

Table 3.9-5. Hazardous Materials Sources within the Proposed Project Footprint

Proposed Project Facility and Alternatives Analyzed at an Equal Level of Detail	Hazardous Materials Sources						
	Buildings	Bridges	Roadway Pavement with Yellow Striping	Railroad Corridors	Hazardous Materials Release Sites	Natural Gas or Liquid Hazardous Materials Pipelines	Agricultural Land (Cropland)
Tri-Valley Segment							
Tri-Valley Alignment	X	X	X	--	X	X	--
Dublin/Pleasanton Station	X	X	X	--	X	X	--
Isabel Station	--	--	X	--	--	X	--
Greenville Station ¹	X	X	X	X	X	--	--
Southfront Road Station Alternative ¹	X	--	X	--	X	X	--
Altamont Segment							
Altamont Alignment	X	X	X	X	--	X	X
Stone Cut Alignment Alternative	--	X	--	X	--	X	--
Owens Illinois Industrial Lead Variant 1, Single Track	--	X	--	X	--	X	X
Owens-Illinois Industrial Lead Variant 2, Double Track	--	X	--	X	--	X	X
Interim OMF	--	--	X	X	--	--	--
Mountain House Station ¹	--	--	X	X	--	X	X
Tracy OMF	X	--	--	X	--	X	X
Mountain House Station Alternative ¹	--	--	--	X	--	X	--
West Tracy OMF Alternative	--	--	--	X	--	X	X
Tracy to Lathrop Segment							
Tracy to Lathrop Alignment, Variant 1, Single Track	X	X	X	X	X	X	X
Tracy to Lathrop Alignment, Variant 2, Double Track	X	X	X	X	X	X	X
Downtown Tracy Station	--	--	X	X	X	X	--
River Islands Station	--	--	--	X	--	--	X
North Lathrop Station	X	X	X	X	X	X	--
Downtown Tracy Station Parking Alternative 1	--	--	X	X	X	X	--
Downtown Tracy Station Parking Alternative 2	--	--	X	X	X	X	--

¹ The footprint for the Greenville Station, Southfront Road Station Alternative, Mountain House Station, and Mountain House Station Alternative assumes phased implementation of Valley Link improvements and maximum station parking.

Impact Detail and Conclusions

Proposed Project

Construction and maintenance for the Proposed Project could result in the disturbance of hazardous building materials (such as asbestos and lead-based paint) that could pose a health risk to construction workers, maintenance workers, the public, and/or the environment if not handled and disposed of properly. However, adherence to federal and state laws and regulations reduces the risk of exposure to and improper disposal of hazardous building materials. Compliance with existing laws and regulations is mandatory; therefore, the disturbance of hazardous building materials during construction and maintenance of improvements is not expected to create a hazard to construction workers, maintenance workers, the public, and/or the environment. As a result, impacts related to the disturbance of hazardous building materials during construction and maintenance of the Proposed Project would be less than significant for all Proposed Project facilities, and no mitigation is required.

Construction and maintenance activities for Proposed Project in the Tri-Valley, Altamont, and Tracy to Lathrop segments would include the removal and disposal of chemically treated railroad ties and the disturbance of soil and ballast potentially contaminated from operation of the existing railroad corridor, and could encounter the hazardous materials pipelines shown on Figures 3.9-2A and 3.9-2B. Furthermore, construction and maintenance activities for the Proposed Project in the Tri-Valley and Tracy to Lathrop segments could encounter soil and/or groundwater potentially contaminated from hazardous materials release sites (see Tables 3.9-1, 3.9-3, and 3.9-5 and Figures 3.9-1A and 3.9-1B). In addition, several Proposed Project facilities in the Altamont and Tracy to Lathrop segments could disturb soil and/or groundwater potentially contaminated by former agricultural activities including previously unknown chemical and/or fuel storage tanks, and residual agricultural chemicals in the soil (see Table 3.9-5). Therefore, a significant impact on the health of construction workers, maintenance workers, the public, and/or the environment could occur.

Alternatives Analyzed at an Equal Level of Detail

Construction and maintenance activities associated with the alternatives analyzed at an equal level of detail could result in similar types of impacts related to hazardous materials sites and the potential disturbance of hazardous materials as described for the Proposed Project. Thus, impacts associated with these alternatives analyzed at an equal level of detail could result in a significant impact on the health of construction workers, maintenance workers, the public, and/or the environment.

Mitigation Measures

The following mitigation measures would apply to construction and maintenance of all Proposed Project facilities in all segments and to all of the alternatives analyzed at an equal level of detail.

Mitigation Measure HAZ-2.1: Conduct site investigations

Prior to construction, the Authority will hire a certified environmental professional to prepare work plans and conduct Phase I and, if necessary, Phase II, Environmental Site Assessments (ESAs) for all Proposed Project improvements within each segment to evaluate the chemical quality of soil, ballast, and/or groundwater that could be disturbed during construction and

maintenance activities. The work plans will describe how representative samples of soil, ballast, and groundwater will be collected and analyzed for potential contamination within each segment from the following potential sources of hazardous materials.

- Railroad corridors
- Roadways with yellow pavement markings
- Hazardous materials release sites
- Petroleum pipelines
- Agricultural land

Work plans will be submitted to the appropriate oversight agency for review and approval.

In accordance with the approved work plans, the Phase I (and Phase II, if necessary) ESAs will be conducted and evaluated by a licensed professional for the Proposed Project improvements. The Phase I (and Phase II, if necessary) ESAs will summarize the field activities and analytical results and will be submitted to the appropriate oversight agency for review and approval.

Mitigation Measure HAZ-2.2: Implement construction risk management plan

Prior to construction, the Authority will prepare a construction risk management plan (CRMP) for the Proposed Project improvements that provides a framework for proper characterization and management of contaminated soil, ballast, and groundwater that could be disturbed during construction and maintenance activities. The CRMP will describe how to meet the following key objectives.

- Identify various scenarios under which large volumes of soil and railroad ballast generated during construction and maintenance can be safely reused.
- Identify maximum acceptable contaminant levels to protect workers, passengers, the public, and ecological receptors for each soil and ballast reuse scenario.
- Identify maximum acceptable contaminant levels to protect station workers and passengers potentially exposed to vapor intrusion, if any, from soil or groundwater contamination.
- Identify sampling and analysis, stockpiling, transportation, health and safety, and other procedures by which soil and ballast must be managed in order to meet safety, regulatory and other standards.
- Define how the groundwater that could be encountered during construction and maintenance will be characterized, properly managed, and discharged or treated.

Based on the analytical results of the site investigations required under Mitigation Measure HAZ-2.1 Conduct site investigations, maximum acceptable contaminant levels will be established for the following soil and ballast reuse scenarios.

- “Unrestricted Onsite Reuse” in which soil and ballast excavated from the Proposed Project footprints can be reused in any onsite area.
- “Stations Reuse” in which soil and ballast excavated from the Proposed Project footprints can be reused in station areas where there would be relatively frequent potential exposure.

- “Right-of-Way Reuse” in which soil and ballast excavated from the Proposed Project footprint can be reused in areas where there would be relatively infrequent potential exposure along the right-of-way of railroad tracks.
- “Encapsulation” in which soil and ballast excavated from the Proposed Project footprint can be reused under barriers or other structures (and covered on all exposed sides by clean material or asphalt paving).

To protect ecological receptors, the reuse scenarios will incorporate additional limitations (as necessary) near creeks, surface waters, or other aquatic habitats based on the findings of an ecological risk assessment. Soil or ballast that contains chemical constituents at levels greater than the acceptable reuse scenarios will be disposed of in accordance with RCRA and Cal. Code Regs. at a facility permitted to accept the waste. Imported fill materials will be characterized to demonstrate they satisfy the criteria for “Unrestricted Onsite Reuse” established in the CRMP.

All extracted groundwater will be considered potentially contaminated and will require characterization to determine the appropriate treatment requirements (if necessary) for discharge. The extracted groundwater will be collected and managed prior to discharge in compliance with local and state regulations and permit requirements, including the SWRCB and Regional Water Resources Control Boards.

Health and safety procedures described in the CRMP will include requirements for an air quality monitoring program during excavation in areas with elevated contaminants of concern to ensure that fugitive dust emissions do not pose an unacceptable health risk to workers or the public. The air monitoring program will identify action levels for total particulates that require respiratory protection, implementation of engineering controls, and ultimately work stoppage. This monitoring program will be in addition to the fugitive dust controls required under Mitigation Measure AQ-2.5 Implement fugitive dust controls during construction.

A licensed professional will prepare the CRMP and submit it to the appropriate oversight agency for review and approval prior to construction. The approved CRMP will be implemented during construction and maintenance of the Proposed Project improvements within each segment.

Mitigation Measure AQ-2.5: Implement fugitive dust controls during construction

Refer to measure description under Impact AQ-2a in Section 3.3, *Air Quality*.

Significance with Application of Mitigation

Implementation of Mitigation Measures HAZ-2.1, HAZ-2.2, and AQ-2.5, would be applied to all Proposed Project facilities. These mitigation measures would require a voluntary oversight agreement, site-specific investigations, a CRMP, and fugitive dust controls, which would reduce impacts from the disturbance of potentially contaminated soil, ballast, and/or groundwater during construction and maintenance of the Proposed Project to a less-than-significant level.

For the same reasons listed above, implementation of Mitigation Measures HAZ-2.1, HAZ-2.2, and AQ-2.5, would reduce impacts from the disturbance of potentially contaminated soil, ballast, and/or groundwater during construction and maintenance of the alternatives analyzed at an equal level of detail to a less-than-significant level.

Comparison of Alternatives

As shown in Table 3.9-5, the Southfront Road Station Alternative would affect fewer hazardous material sources as compared to the Greenville Station. The Stone Cut Alignment Alternative would affect the same number and type of hazardous materials sources as compared to the Altamont Alignment. The West Tracy OMF Alternative would affect one less hazardous material source than the Tracy OMF. The Mountain House Station Alternative and Mountain House Station would affect the same number (but not the same type) of hazardous material sources. The Downtown Tracy Station Parking Alternatives 1 and 2 would affect the same number and type of hazardous material sources as compared to the Downtown Tracy Station. The same mitigation measures would be implemented and the same impact conclusions (less than significant after mitigation) would be reached between the alternatives (Southfront Road Station Alternative, Stone Cut Alignment Alternative, West Tracy OMF Alternative, Mountain House Station Alternative, and Downtown Tracy Station Parking Alternatives 1 and 2) and the Proposed Project (Greenville Station, Altamont Alignment, Tracy OMF, Mountain House Station, and Downtown Tracy Station).

Impact HAZ-3: Construction, operation, and maintenance of the Proposed Project would create a potentially significant hazard for children at nearby schools from emissions or handling of hazardous or acutely hazardous materials.

Level of Impact	Potentially Significant
	<u>Proposed Project</u> Tri-Valley Alignment Tracy to Lathrop Alignment Variant 1, Single Track Tracy to Lathrop Alignment Variant 2, Double Track
	No Impact <u>Proposed Project</u> Dublin/Pleasanton Station Isabel Station Greenville Station Altamont Alignment Owens-Illinois Industrial Lead Variant 1, Single Track Owens-Illinois Industrial Lead Variant 2, Double Track Interim OMF Mountain House Station Tracy OMF Downtown Tracy Station River Islands Station North Lathrop Station
	<u>Alternatives Analyzed at an Equal Level of Detail</u> Southfront Road Station Alternative Stone Cut Alignment Alternative West Tracy OMF Alternative Mountain House Station Alternative Downtown Tracy Station Parking Alternative 1 Downtown Tracy Station Parking Alternative 2

Mitigation Measures	HAZ-2.2: Implement construction risk management plan AQ-2.5: Implement fugitive dust controls during construction
Level of Impact after Mitigation	Less than Significant

Impact Characterization

The handling or emission of hazardous or acutely hazardous materials near schools must consider potential health effects on children, who are considered sensitive receptors. There are existing K-12 schools within 0.25 mile of the Proposed Project footprint for the Tri-Valley Alignment; Tracy to Lathrop Alignment Variant 1, Single Track; and Tracy to Lathrop Alignment Variant 2, Double Track. The primary exposure pathway of concern for children at nearby schools is through the inhalation of air contaminants, such as particulate matter.

As discussed under Impact HAZ-1a and HAZ-1b, hazardous materials used during construction and operation of Proposed Project would be managed in accordance with applicable laws and regulations and would not be expected to create a hazard to human health. However, as discussed under Impact HAZ-2, construction and maintenance of Proposed Project improvements that disturb existing soil and/or ballast contamination could generate dust and pose a health risk to the public, which includes nearby schools.

As discussed in Section 3.3, *Air Quality*, sources of hazardous emissions during construction and operation of the Proposed Project would include diesel particulate matter from the exhaust of construction equipment and increased passenger rail service. Based on conservative air dispersion modeling and health risk analyses, it was determined that emissions of diesel particulate matter from construction equipment could pose health risks to nearby sensitive receptors. However, nearby sensitive receptors potentially impacted would not include schools. In addition, as described in Section 3.3, *Air Quality*, it was determined that emissions of diesel particulate matter from increased operation of the proposed rail service would not pose health risks to nearby sensitive receptors, such as schools.

Impact Detail and Conclusions

Proposed Project

There are private and public K-12 schools in the study area for the Tri-Valley Alignment; Tracy to Lathrop Alignment Variant 1, Single Track; and Tracy to Lathrop Alignment Variant 2, Double Track. There are no private and public K-12 schools within 0.25 mile of any other Proposed Project facility. Therefore, construction and maintenance activities for these other Proposed Project facilities would not expose school children to hazardous materials, and there would be no impact associated with these other Proposed Project facilities.

As described in Tables 3.9-2 and 3.9-4, and shown on Figures 3.9-1A and 3.9-1B, several K-12 schools are present within 0.25 mile of the Proposed Project footprint near the Tri-Valley Alignment; Tracy to Lathrop Alignment Variant 1, Single Track; and Tracy to Lathrop Alignment Variant 2, Double Track. Construction and maintenance activities for the Tri-Valley Alignment; Tracy to Lathrop Alignment Variant 1, Single Track; and Tracy to Lathrop Alignment Variant 2, Double Track would require the handling of minor quantities of hazardous materials (none of which would be acutely hazardous), potential excavation of contaminated soil, and generation of fugitive dust emissions within 0.25 mile of several K-12 schools.

Construction and operation of Proposed Project improvements would generate diesel particulate matter emissions from construction equipment and increased passenger rail service. However, as described in Section 3.3, *Air Quality*, diesel particulate emissions would have a less-than-significant project-level impact on the health of children at nearby schools. Construction and maintenance of Proposed Project improvements for the Tri-Valley Alignment and Tracy to Lathrop Alignment, Variants 1 and 2 could generate dust from the disturbance of potentially contaminated soil and/or ballast that could have a potentially significant impact on the health of children at nearby schools.

Alternatives Analyzed at an Equal Level of Detail

The Southfront Road Station Alternative, Stone Cut Alignment Alternative, West Tracy OMF Alternative, Mountain House Station Alternative, and Downtown Tracy Station Parking Alternatives 1 and 2 would not be located within 0.25 mile of a school. Thus, there would be no impact associated with these alternatives analyzed at an equal level of detail.

Mitigation Measures

The following mitigation measures would apply to construction and maintenance activities for the Proposed Project Tri-Valley Alignment and Tracy to Lathrop Alignment, Variants 1 and 2 to mitigate for the impacts associated with the disturbance of potentially contaminated soil, ballast, and/or groundwater.

Mitigation Measure HAZ-2.2: Implement construction risk management plan

Refer to measure description under Impact HAZ-2.

Mitigation Measure AQ-2.5: Implement fugitive dust controls during construction

Refer to measure description under Impact AQ-2a in Section 3.3, *Air Quality*.

Significance with Application of Mitigation

Implementation of Mitigation Measures HAZ-2.2 and AQ-2.5, which would require air quality monitoring and dust control measures during excavation in areas with elevated contaminants of concern, would reduce the impact of Proposed Project improvements on K-12 school children from contaminated dust generated during construction and maintenance activities to a less-than-significant level for the Proposed Project (due to the Tri-Valley Alignment; Tracy to Lathrop Alignment Variant 1, Single Track; and Tracy to Lathrop Alignment Variant 2, Double Track and Tracy to Lathrop Alignment, Variants 1 and 2).

Comparison of Alternatives

The Southfront Road Station Alternative, Stone Cut Alignment Alternative, West Tracy OMF Alternative, Mountain House Station Alternative, and Downtown Tracy Station Parking Alternatives 1 and 2; like the proposed Greenville Station, Altamont Alignment, Tracy OMF, Mountain House Station, and the Downtown Tracy Station would not be located within 0.25 mile of a school. Thus, impacts related to exposing school children to hazardous materials would be the same (no impact) between these alternatives and the Proposed Project.