3.10 Hazardous Materials and Wastes

3.10.1 Introduction

This section describes the regulatory setting and affected environment associated with hazardous materials and wastes, the potential project impacts related to hazardous materials and wastes, and the mitigation measures that would reduce these impacts. Construction and operation of the Fresno to Bakersfield Section of the California High-Speed Train (HST) System could cause ground disturbance (including disturbance of groundwater or surface water) near a known contaminated site or sites, or where contamination could exist in the study area. Construction and operation of the project could also involve the use, storage, and disposal of hazardous materials and wastes in the study area.

The *Final Program EIR/EIS for the Proposed California HST System* (Statewide Program EIR/EIS) (Authority and FRA 2005) concluded that the project would have a less than significant impact on hazardous materials and hazardous wastes when viewed on a system wide basis. However, it also acknowledged that, at the program level, it was not possible to identify specific hazardous material impacts or the nature and severity of contamination at specific sites. The Authority and FRA committed to project-level analysis that included identifying and evaluating potential sites through database searches, review of land use, site reconnaissance, and review of records and consultation with regulatory agencies. The Authority and FRA committed to design practices, such as elevating the track, that avoid and/or minimize potential impacts through design refinement. Development and use of the study area is a key aspect in understanding the potential for contamination related to hazardous materials and wastes, because particular types of land use are more prone to specific contamination concerns. Historical land use is discussed in Section 3.17, Cultural Resources and Paleontological Resources, and current land use is discussed in Section 3.13, Station Planning, Land Use, and Development. Additional information regarding hazardous materials and wastes is presented in Section 3.6, Public Utilities and Energy, Section 3.8, Hydrology and Water Resources, and Section 3.9, Geology, Soils, and Seismicity. Section 3.11, Safety and Security, discusses emergency response preparedness in the event of leaks, spills, or accidents involving hazardous materials or wastes. The Hazardous Materials and Wastes Technical Report (Authority and FRA 2011) provides more-detailed information on hazardous materials and hazardous wastes, more-comprehensive information about the investigation process, and a complete overview of pertinent elements of the affected environment.

3.10.2 Laws, Regulations, and Orders

This section discusses the federal, state, and local laws, regulations, and orders that pertain to hazardous materials and wastes in the study area.

A. FEDERAL

Resource Conservation and Recovery Act (RCRA) [42 U.S.C. Section 6901 et seq.]

Regulates the identification, generation, transportation, storage, treatment, and disposal of solid and hazardous materials and hazardous wastes.

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

Regulates former and newly discovered uncontrolled waste disposal and spill sites. Established the National Priorities List of contaminated sites and the “Superfund” cleanup program.

Clean Air Act

Protects the general public from exposure to airborne contaminants that are known to be hazardous to human health. Under the Clean Air Act, the U.S. Environmental Protection Agency (EPA) established National Emissions Standards for Hazardous Air Pollutants, which are emissions standards for air pollutants, including asbestos.

Clean Water Act [Section 402(p)]

Regulates discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater.

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

Regulates discharges of pollutants to underground aquifers.

Toxic Substances Control Act [15 U.S.C. Section 2601 et seq.]

Regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials.

Hazardous Materials Transportation Act [49 U.S.C. Section 1801-1819 and 49 CFR Parts 101, 106, 107, and 171-180]

Regulates the transport of hazardous materials by motor vehicles, marine vessels, and aircraft.

Emergency Planning and Community Right to Know Act [40 CFR Parts 350 to 372]

Regulates facilities that use hazardous materials in quantities that require reporting to emergency response officials.

Federal Compliance with Pollution Control [Executive Order 12088]

Requires federal agencies to take necessary actions to prevent, control, and abate environmental pollution from federal facilities and activities that federal agencies control.

B. STATE

CEQA [Public Resource Code Section 21000 et seq.] and CEQA Guidelines [California Code of Regulations Section 15000 et seq.]

Requires state and local agencies to identify the significant environmental impacts of their actions, including potential significant impacts associated with hazardous wastes and materials, and to avoid or mitigate those impacts, when feasible.

California Public Resources Code Section 21151.4

Requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of the project about potential impacts on the school if the project might reasonably be anticipated to emit hazardous air emissions, 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.]

Regulates water quality through the SWRCB and RWQCB, 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.]

Requires facilities using hazardous materials to prepare Hazardous Materials Business Plans.

Hazardous Waste Control Act [California Health and Safety Code Section 25100 et seq.]

Similar to RCRA on the federal level, regulates the identification, generation, transportation, storage, and disposal of materials the State of California has deemed hazardous.

Safe Drinking Water and Toxic Enforcement Act [Proposition 65]

Similar to the Safe Drinking Water Act and the Clean Water Act on the federal level, regulates the discharge of contaminants to groundwater.

California Government Code Section 65962.5

Requires the California Department of Toxic Substances Control (DTSC) to compile and maintain lists of potentially contaminated sites throughout the State of California. (This section of the Government Code also pertains to the Hazardous Waste and Substances Sites [Cortese] List.)

C. LOCAL JURISDICTION PLANS AND POLICIES

Senate Bill 1082, passed in 1993, created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The Unified Program (Cal/EPA 2009) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. The California Environmental Protection Agency and other state agencies set the standards for their programs while local governments implement the standards. These local implementing agencies are called Certified Unified Program Agencies (CUPAs). For each county, the CUPA regulates/oversees:

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

Beyond the statewide regulations the CUPAs administer, policies and regulations found in a number of local and regional plans (including general plans and municipal codes) 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. Table 3.10-1 lists local plans and policies. Regional plans have not been prepared for the management and disposal of hazardous waste and materials.

Table 3.10-1
Local Plans and Policies

Jurisdiction	Policy Title	Summary
Fresno County	Fresno County General Plan, Health and Safety Element, Goal HS-F, Policies HS-F.1 to Policy HS-F.8, and Program HS-F.A to HS-F.C (Fresno County 2000)	The policies in this element of the general plan are designed to ensure that development projects minimize public risks associated with both intended and unintended exposure to hazardous materials and wastes.
City of Fresno	2025 Fresno General Plan, Safety Element, Objective I-6 and Policies I-6-a to I-6-l (City of Fresno 2002)	The policies outlined in this element support the objective to reduce and control the adverse effects of hazardous materials on the public's health, safety, and welfare so as to promote the health and welfare of local residents and the productive capacity of industry.
	Emergency Operations Plan (City of Fresno 2008)	The Emergency Operations Plan describes the city's actions during a response to an emergency, the role of the Emergency Response Center, and agency coordination. The plan also identifies policies, responsibilities, and procedures required to protect the health and safety of communities in Fresno.
Kings County	2035 Kings County General Plan, Health and Safety Element, HS Objective B1.5 and HS Policy B1.5.1 (Kings County Planning Department 2010)	Development applications are evaluated to determine the potential for hazardous waste generation and that sufficient financial assurance is available to the county to cover waste cleanup and/or site restoration in instances where the site has been abandoned or the business operator is unable to remove hazardous materials from the site.
	Kings County Area Plan for Hazardous Materials Emergency Response (Kings County 2007)	The basic purpose of Kings County Area Plan for Hazardous Materials is to describe the roles, responsibilities, and procedures for those agencies tasked with performing hazardous material emergency response activities within jurisdictional boundaries.
Tulare County	Tulare County General Plan 2030 Update, Health and Safety, Goal HS-4, Policies HS-4.1 through HS4.7 (Tulare County 2010)	The policies in the general plan are established to protect residents, visitors, and property from hazardous materials through their safe use, storage, transport, and disposal.

Table 3.10-1
Local Plans and Policies

Jurisdiction	Policy Title	Summary
Kern County	Kern County General Plan, Safety Element, Section 4.4, Policy 2, Implementation Measure A; Section 4.9, Policies 1 and 2, Implementation Measures A and B (Kern County Planning Department 2007)	The Kern County General Plan contains the following policies or implementation measures: facilities used for the manufacture, storage, and use of hazardous materials will comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation; the proposed siting or expansion of hazardous waste facilities will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan; and innovative technologies to manage hazardous waste streams generated in Kern County will be encouraged.
City of Bakersfield	Metropolitan Bakersfield General Plan, Safety Element, Public Safety, Hazardous Materials/Uses, Goal 4, Policies 7, 8, and 16 (City of Bakersfield and Kern County 2007)	All new discretionary development projects are subject to environmental and design review on a site-specific, project-by-project basis, including, but not limited to, an assessment to determine whether hazardous materials present potential health effects to human health.
	Bakersfield Municipal Code, Title 8, Chapter 8.60, Certified Unified Program Agency (City of Bakersfield 2010)	The CUPA for the City of Bakersfield is the Bakersfield Fire Department, which is responsible for implementing the unified program within the incorporated area of the city of Bakersfield. Site inspections for hazardous materials programs (aboveground storage tanks, underground storage tanks, hazardous waste treatment, hazardous waste generators, hazardous materials management and response plans, and the Uniform Fire Code) are consolidated and accomplished by a single inspection.

CUPA = Certified Unified Program Agency

3.10.3 Methods for Evaluating Impacts

For the purpose of this assessment, hazardous materials are defined as any materials that, because of quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety, or to the environment, if released. 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. Hazardous wastes include residues, discards, byproducts, contaminated products, or similar substances that exceed regulatory thresholds for properties of

toxicity, ignitibility, corrosivity, or reactivity. Federal and state regulations identify by name specific hazardous wastes that the EPA has designated as "listed wastes."

This analysis identified sites of Potential Environmental Concern (PEC sites or PECs) using aspects of the methodology provided in the California Department of Transportation's initial site assessment guidance document (Caltrans 2006a) and ASTM Standard Practice E 1528-06 (ASTM 2006). Sites were identified as PECs where there is the possible presence of any hazardous material or waste under conditions that indicate the possibility of an existing release, a past release, or a threat of a release of the hazardous material or waste into structures on the property or into the ground, groundwater, or surface water of the property. This designation includes sites where hazardous materials or wastes are handled and stored in compliance with laws and regulations (ASTM 2006).

Hazardous materials could be released accidentally during construction or operation of the HST project during transport, use, or disposal of the materials, or the demolition of buildings and roadways with potential asbestos-containing materials (ACMs) and/or lead-containing materials. This analysis considered potential effects based on proximity of the HST alignments to known hazardous material and waste sites using a combination of environmental database record searches; analyses of historical topographic maps and aerial photography; site reconnaissance; and regulatory agency files review and consultation. The *Hazardous Materials and Wastes Technical Report* (Authority and FRA 2011) details this analysis.

The significance criteria, as incorporated from the CEQA Guidelines, Appendix G, Section VII, Hazards and Hazardous Materials, are qualitative. These criteria use terms such as "create a significant hazard," "result in a safety hazard," and "impair implementation." This methodology, combined with objective information (such as locations of hazardous materials sites, qualitative hazard assessments, and professional judgment), is used to consider whether a potentially significant impact under CEQA could occur.

A. METHODS FOR EVALUATING EFFECTS UNDER NEPA

Pursuant to NEPA regulations (40 CFR 1500-1508), project effects are evaluated based on the criteria of context and intensity. Context means the affected environment in which a proposed project occurs. Intensity refers to the severity of the effect, which is examined in terms of the type, quality, and sensitivity of the resource involved, location and extent of the effect, duration of the effect (short- or long-term), and other consideration of context. Beneficial effects are identified and described. When there is no measurable effect, impact is found not to occur. Intensity of adverse effects are summarized as the degree or magnitude of a potential adverse effect where the adverse effect is thus determined to be negligible, moderate, or substantial. It is possible that a significant adverse effect may still exist when on balance the impact is negligible or even beneficial. For Hazardous Materials, the terms are defined as follows:

A *negligible* impact is defined as an increased risk to the public or environment related to hazardous materials or substances that is slightly greater, but very close to the existing conditions. A *moderate* impact is defined as a localized increased risk to the public or environment related to hazardous materials or substances. A *substantial* effect is defined as increased risk to the public or environment related to hazardous materials or substances on a regional scale.

B. CEQA SIGNIFICANCE CRITERIA

Current conditions, including the hazardous material and waste sites identified in the available databases, provide the baseline against which the HST alternatives are compared. Consistent with Appendix G of the CEQA Guidelines with respect to hazardous materials, a project is

considered to have a significant impact on the environment if it results in one or more of the following conditions:

- Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Creates 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.
- Is located on a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5 (the Cortese list) and, as a result, would create a significant hazard to the public or the environment.
- Emits hazardous air emissions or handles extremely hazardous substances or mixtures containing extremely hazardous substances within 0.25 mile of a school and would pose a health or safety hazard to students or employees.

Checklist items in Appendix G of the CEQA Guidelines pertaining to hazards, such as risk from nearby airports or wildland fires, are discussed in Section 3.11, Safety and Security.

C. STUDY AREA FOR ANALYSIS

For hazardous materials and wastes, the study area consists of the construction footprint for tracks, stations, and heavy maintenance facilities (HMFs), plus a 150-foot buffer of the construction footprint to account for hazardous material and waste issues on adjacent properties. To be consistent with ASTM database-search standard practice, the PEC site database search used a 1-mile buffer area on either side of the alternative alignment centerlines. Analysts attempted to identify potential large or regionally important PEC sites (such as CERCLA National Priorities List sites) within the 1-mile buffer, where the extent of the site or contamination could extend well beyond the mapped address, but the database search results did not identify any such sites. Therefore, Section 3.10.4, Affected Environment, and Section 3.10.5, Environmental Consequences, discuss the conditions and potential effects in the construction footprint and 150-foot buffer. To evaluate potential impacts on schools in a manner consistent with the CEQA significance criteria, the study area near school locations was 0.25 mile on either side of the construction footprint.

3.10.4 Affected Environment

This section discusses the existing hazardous materials and wastes setting. After discussing the regional context, this section provides information about general areas of concern, specific PEC sites within the study area, and the proximity of the construction footprint to schools. Additional history and detail related to the regional setting, geology, hydrogeology, and water resources are presented in the Hazardous Materials and Wastes Technical Report (Authority and FRA 2011).

Since the installation of the rail and road corridors in the early 20th century, the study area has been transformed from its natural state (e.g., grasslands, woodlands, swamps, small rural towns) into major centers of agribusiness, industry, and urbanization. Hazardous materials have been used in the study area for at least 100 years.

The Fresno to Bakersfield Section of the HST System is situated in the Central/San Joaquin Valley, an immense level plain between the Sierra Nevada and the Coastal Range mountains. This portion of the valley is characterized by vast reaches of agricultural land, two large cities—Fresno and Bakersfield—and numerous small towns. The affected environment related to hazardous materials and wastes includes the areas and communities within the incorporated

boundaries of the cities of Fresno, Corcoran, Wasco, Shafter, and Bakersfield, and the unincorporated areas and communities within the counties of Fresno, Kings, Tulare, and Kern. The areas within Fresno, Corcoran, Wasco, Shafter, and Bakersfield are considered urban or suburban; most of the unincorporated areas between these cities are considered rural and are dominated by agricultural land uses. The two proposed station locations are within the urban areas of Fresno and Bakersfield. The potential Kings/Tulare Regional Station is in a rural area east of Hanford. Most of the areas described above as urban or suburban occur along active rail corridors, as do most of the rural areas.

All proposed alignment alternatives for the Fresno to Bakersfield Section are in the Tulare Lake Hydrologic Region (HR) (DWR 2003). The Tulare Lake HR covers approximately 10.9 million acres (17,000 square miles); this HR covers all of Kings and Tulare counties and most of Fresno and Kern counties. Significant geographic features include the southern half of the San Joaquin Valley, the Temblor Range to the west, the Tehachapi mountains to the south, and the southern Sierra Nevada to the east (DWR 2003).

The HR has 12 distinct groundwater basins and 7 subbasins of the San Joaquin Valley Groundwater Basin, which crosses north into the San Joaquin River HR. These basins underlie approximately 5.33 million acres (8,330 square miles), or 49% of the entire HR area. The aquifers are generally quite thick in the San Joaquin Valley subbasins, with groundwater wells commonly exceeding 1,000 feet in depth. The maximum thickness of freshwater-bearing deposits (4,400 feet) occurs at the southern end of the San Joaquin Valley. Based on site-specific depth to groundwater information that was taken from current groundwater monitoring reports available on GeoTracker, depth to groundwater in the study area varies from near surface in areas where the alignment alternatives cross the Kings River to over 300 feet below ground surface (bgs) in areas of heavy agricultural pumping in northern Kern County. Based on site-specific records from PEC sites (described below) depths to groundwater along the alignment alternatives are approximately 85 to 95 feet bgs in the Fresno area, 30 to 40 feet bgs in the Corcoran area; 250 to 275 feet bgs in the Shafter area, and 50 to 200 feet bgs in the Bakersfield area.

There are no applicable regional plans or policies pertaining to hazardous materials and waste within the Fresno to Bakersfield Section study area.

A. GENERAL AREAS OF CONCERN

Specific PEC sites associated with hazardous materials and wastes are discussed in Section 3.10.4(B), Specific Sites of Concern. In addition to these sites, it is anticipated that hazardous materials and wastes are present within the study area because current and past land uses commonly involve such substances. A variety of federal, state, and local laws, regulations, and orders provide oversight for the management and cleanup of these materials and wastes to minimize risks to employees, public health, and the environment. Circumstances of general concern in the study area include the following existing conditions that could be encountered during construction or operation of the proposed HST project: ACM and lead-based substances common to older structures and roadway systems, and other hazardous materials and wastes typically associated with roads, railway and utility corridors, agricultural areas, and industrial facilities.

The portions of regional waterways in the study area are not known to be contaminated with mercury or other heavy metals (RWQCB 2006). Therefore, this potential issue is not analyzed further. The following sections summarize the types of substances and conditions that could be expected within each of the general areas of concern.

Potential Building Material Hazardous Substances

The study area includes industrial, commercial, and residential structures. Buildings constructed before 1971 might be contaminated with lead. Lead was used as a pigment and drying agent in oil-based paint until the Lead-Based Paint Poisoning Prevention Act prohibited such use. Lead-based paint might still be present on buildings in the study area. In addition, weathering and routine maintenance of painted structures might have contaminated nearby soils with lead.

Asbestos is a mineral fiber. Prior to the 1980s, a variety of building construction materials commonly used asbestos for insulation and as a fire-retardant. There is no health threat if ACM remains undisturbed and does not become airborne. However, if ACM is damaged or disturbed by repair, remodeling, or demolition activities, microscopic fibers become airborne and can be inhaled. When airborne asbestos is inhaled, the thin fibers irritate tissues and resist the body's natural defenses. Asbestos is linked to cancers of the lung and the lining of internal organs, as well as to asbestosis and other diseases that inhibit lung function (EPA 2009). State, and federal regulations typically require preparation of, and compliance with, ACM abatement plans before disturbing ACM.

Potential Road and Railway Corridor Hazardous Substances

Specific to roadways, yellow paint and tape used for pavement marking before 1997 might exceed the hazardous waste criteria for lead under Title 22, California Code of Regulations. If so, such materials would need to be disposed in a Class I disposal facility authorized to accept this type of waste. In addition to lead-containing materials, ACM might be found in roadway materials, such as the material used before the 1980s for expansion joints in the pavement.

Leaded gasoline was used as a vehicle fuel in the United States from the 1920s until the late 1980s. Although lead is no longer used in gasoline formulations, lead emissions from automobiles are a recognized source of contamination in soils along roadways (i.e., aerially deposited lead). Surface and near-surface soils along heavily used roadways have the potential to contain elevated concentrations of lead (EPA 2010).

Contaminants common in railway corridors include wood preservatives (e.g., creosote, arsenic) and heavy metals in ballast rock. ACM might also occur in ballast rock and soils associated with railroad tracks. Although the HST alignments would avoid the UPRR and BNSF tracks, these materials might occur in the area of potential disturbance. In addition, soils in and adjacent to these corridors might contain herbicide residues as a result of historic and ongoing weed-abatement practices.

Potential Utility Corridor Hazardous Substances

The study area includes several urban areas and associated public utilities. Contaminants common to utility corridors include wood preservatives, herbicide residues, and polychlorinated biphenyl (PCB)-containing equipment. Domestically, PCBs were produced from 1929 until their production was banned in 1979. They belong to a broad family of manufactured organic chemicals known as chlorinated hydrocarbons. PCBs, which have a range of toxicity, vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Because of their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications. Equipment in the study area that might contain PCBs includes transformers, capacitors, and other electrical equipment; oil used in motors and hydraulic systems; and thermal insulation material (e.g., fiberglass, felt, foam, cork) (EPA 2010). In particular, older, pole-mounted electrical transformers typically contain PCBs.

Potential Agricultural Operation Hazardous Substances

Within the study area, numerous agricultural enterprises have historically stored, handled, and applied pesticides and herbicides on row crops and orchards. Pesticide residues might persist in study-area soils. However, routine application of these materials would not generally accumulate to levels sufficient to cause concern. Areas that might be of concern include (1) pesticide-handling areas that lack concrete pads, berms, or cribs to contain spills or leaks during handling and storage, and (2) rinse water from washout facilities for pesticide-application equipment that has not been properly collected and treated before discharge. Equipment-repair and petroleum-storage areas might also be of concern.

Potential Industrial Facility Hazardous Substances

The study area includes a number of industrial areas, which are commonly clustered along railroad rights-of-way and associated with the larger communities of Fresno and Bakersfield. Such industrial areas often represent areas where businesses have used hazardous materials over long periods of time. Often PEC sites are associated with these areas. PEC sites can also include small industrial facilities that demonstrate poor housekeeping practices and small-quantity generators of hazardous wastes that the CUPA regulates. Automobile service facilities that collect used engine oil and health care providers that produce medical wastes are examples of such small-quantity generators. In addition to the concentrated use of hazardous materials and the generation of hazardous wastes, it is assumed that hazardous material transport and storage activity is more intense in industrial areas than in other areas.

Potential Release of Hazardous Materials and Wastes during Transportation

State Route (SR) 99, SR 41, SR 43, and the BNSF railway within the study area serve as major transportation corridors. Hazardous materials, hazardous wastes, and petroleum products are a subset of the tremendous volume of goods routinely shipped along these transportation corridors. In addition, more intensive hazardous material transport and storage activity is assumed to occur at regional landfills and recycling facilities (e.g., the Cedar Avenue Transfer and Recycling Station, formerly Orange Avenue Disposal Site) and a few large industrial operations (e.g., petroleum bulk plants).

Three agencies maintain searchable databases that track hazardous material releases in reportable quantities:

- The EPA maintains the Hazardous Materials Incident Report System, which contains hazardous material spill incidents that are reported to the U.S. Department of Transportation.
- The California Office of Emergency Services maintains the California Hazardous Materials Incident Report System, which contains information on reported hazardous material accidental releases or spills.
- The SWRCB maintains the Spills, Leaks, Investigations, and Cleanup (SLIC) program, which contains information on reported hazardous material accidental releases or spills.

Although most hazardous materials and wastes are transported without incident, spills and other accidental releases have been documented within the study area. Hazardous materials spills and accidental releases that are cleaned up immediately and do not require regulatory action are not considered PEC sites. Therefore, most of the incident reports in these databases are not classified as PEC sites.

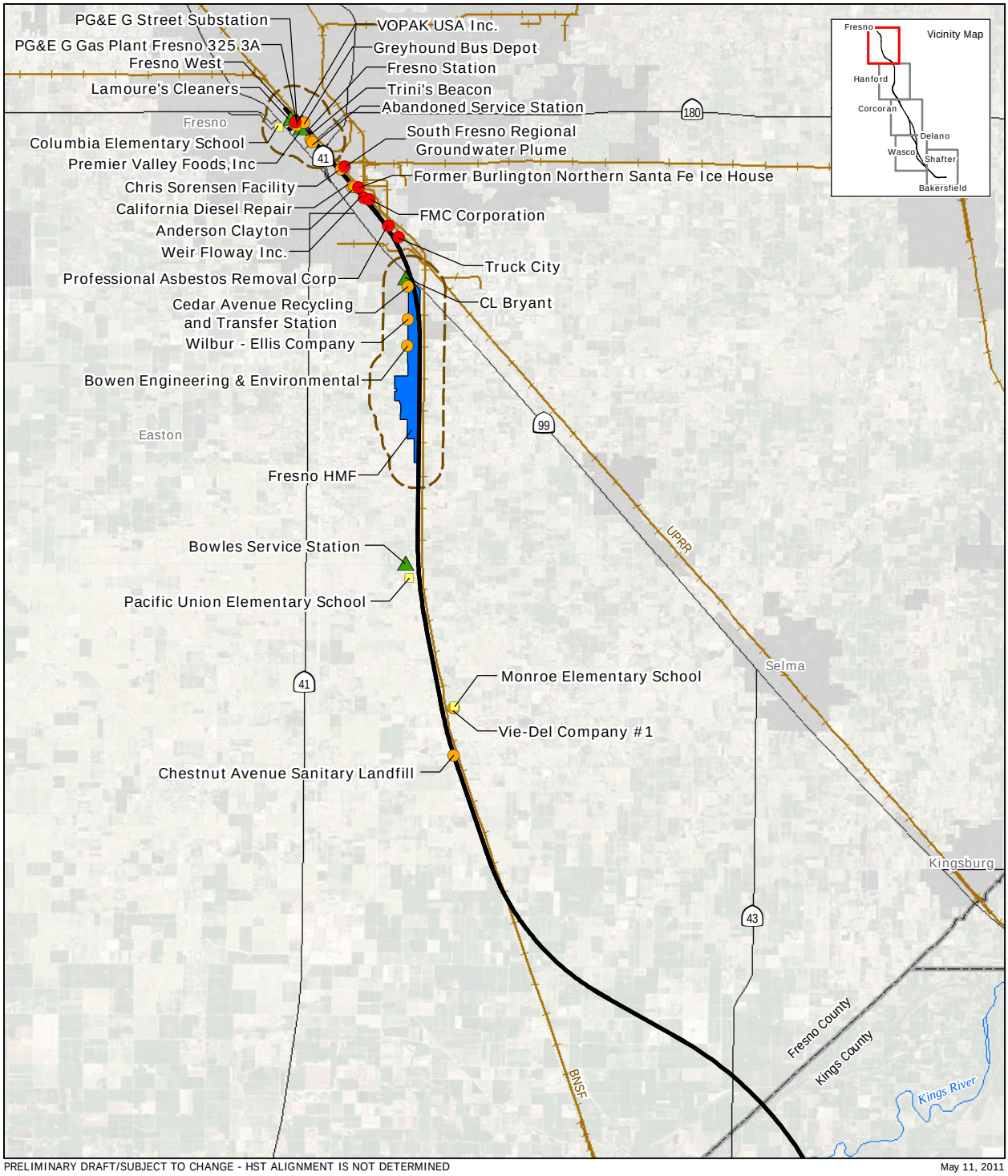
B. SPECIFIC SITES OF CONCERN

Three general types of PEC sites are located within the study area—historical, conceivable, and current:

- **Historical PECs.** These are sites where previous contamination has occurred. For the purpose of this evaluation, Historical PECs are closed cases or have a "no further action required" status and, as such, were determined unlikely to require further remedial actions. These sites are not shown on Figures 3.10-1 through 3.10-5. It is noted, however, that such sites might still contain contaminants below state action levels. Leaking UST and DTSC EnviroStor sites closed by the RWQCB or local agencies before April 1, 2008, would not necessarily have been closed based on a risk assessment that considered volatile organic compounds (VOCs) and the vapor intrusion pathway. Assembly Bill 422 now requires such a risk assessment. In addition, sites with closed cases/no further action status might be under deed restrictions or other institutional controls that might hinder subsequent development. These sites are not discussed further herein because of the reduced likelihood that contamination would pose a potential health risk. The Hazardous Materials and Wastes Technical Report (Authority and FRA 2011) provides a full discussion of Historical PECs, the criteria followed to identify PECs using the definitions for hazardous wastes, materials, and substances provided in the California Department of Transportation (Caltrans) initial site assessment guidance document, dated 2006 (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).

- **Conceivable PECs.** These sites have a substantial amount of petroleum product or hazardous material storage or use but no known violations or accidental releases have occurred. Examples of conceivable PECs include dry cleaners, metal-finishing operations, petroleum bulk plants, fueling stations, and large industrial facilities. Fueling stations that use buried tanks often have leaking equipment that goes undetected for extended periods of time. In addition, fueling stations are subject to spills because of operator error. Large industrial facilities that store and use a wide variety of chemicals might require further site assessment to determine if hazardous material contamination has occurred. Conceivable PEC sites are identified in this section because of their potential as future hazards, even though they do not currently present concerns. Conceivable PEC sites are shown on Figures 3.10-1 through 3.10-5.

- **Current PECs.** As indicated by information obtained from various databases, these sites are in punitive/regulatory phases before remediation, active remediation phases, or post-remedial monitoring phases. Current PEC sites are shown on Figures 3.10-1 through 3.10-5. Current PEC sites have been further categorized for this analysis according to the level of risk they are believed to present. High-risk sites might be substantially contaminated and typically involve contaminants that are difficult to remediate (e.g., perchloroethylene), have larger volumes of contaminants, or have long histories of industrial or commercial use. A site might also be considered high-risk if limited information is available about the site, which creates greater uncertainty about the extent of contamination and the costs of remediation. Sites where the nature of potential contamination is better known (based on existing investigation data), the contaminants are not as toxic or difficult to treat, and remediation approaches are straightforward or already occurring are considered medium-risk sites.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED

May 11, 2011

Data source: Environmental Data Resources, 2011

BNSF Alternative
Stream/River
Existing rail line
Highway
1/2 Mile buffer of heavy maintenance facility and station

Community/Urban area
Potential heavy maintenance facility
Proposed Station
Potential Kings/Tulare Regional Station

School
Conceivable potential environmental concern

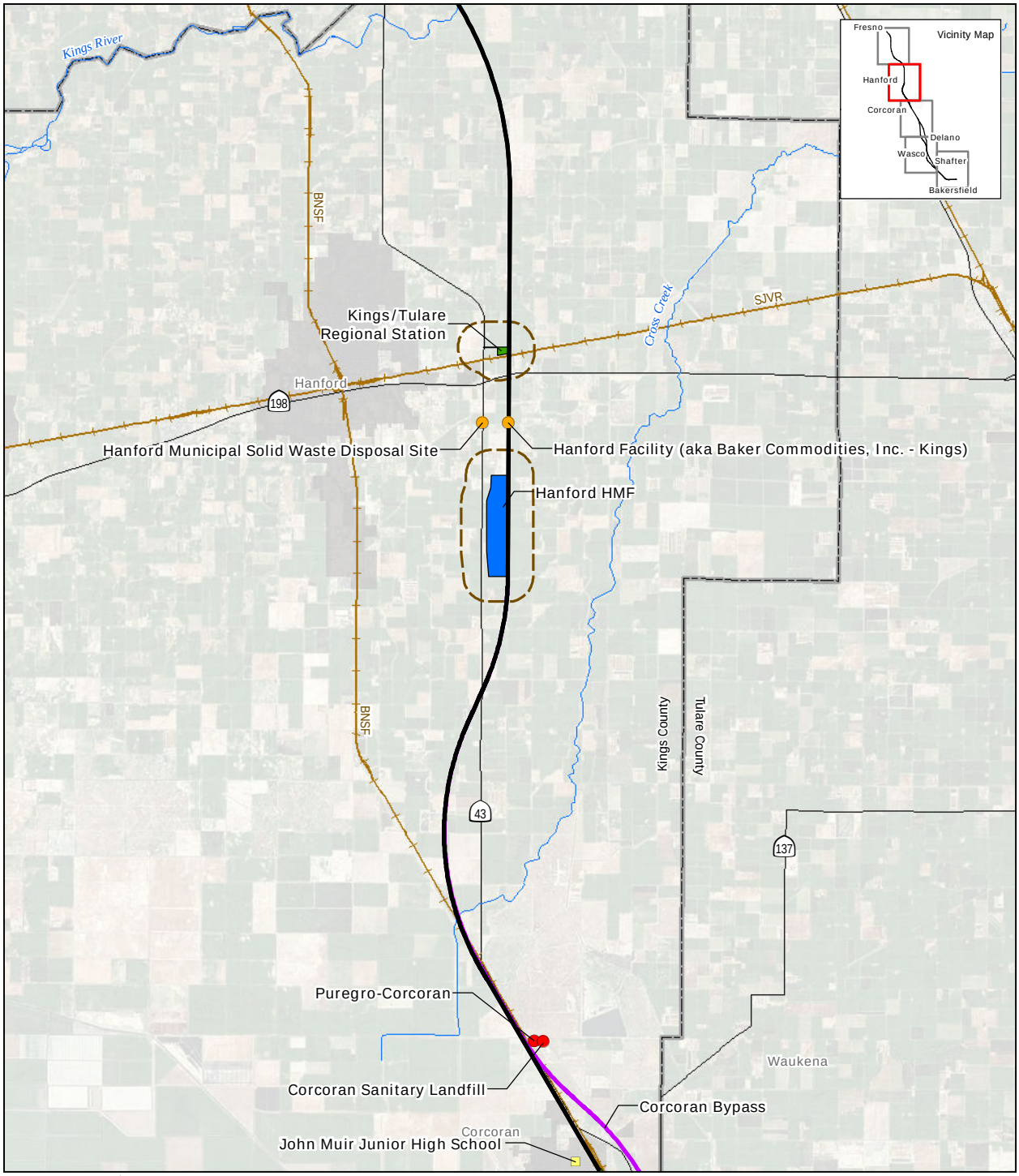
Current potential environmental concern
Medium risk
High risk

N

0 1 2
Miles

0 2 4
Kilometers

Figure 3.10-1
Fresno area:
Locations of conceivable and current PECs and schools within the project study area



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED

May 11, 2011

Data source: Environmental Data Resources, 2011

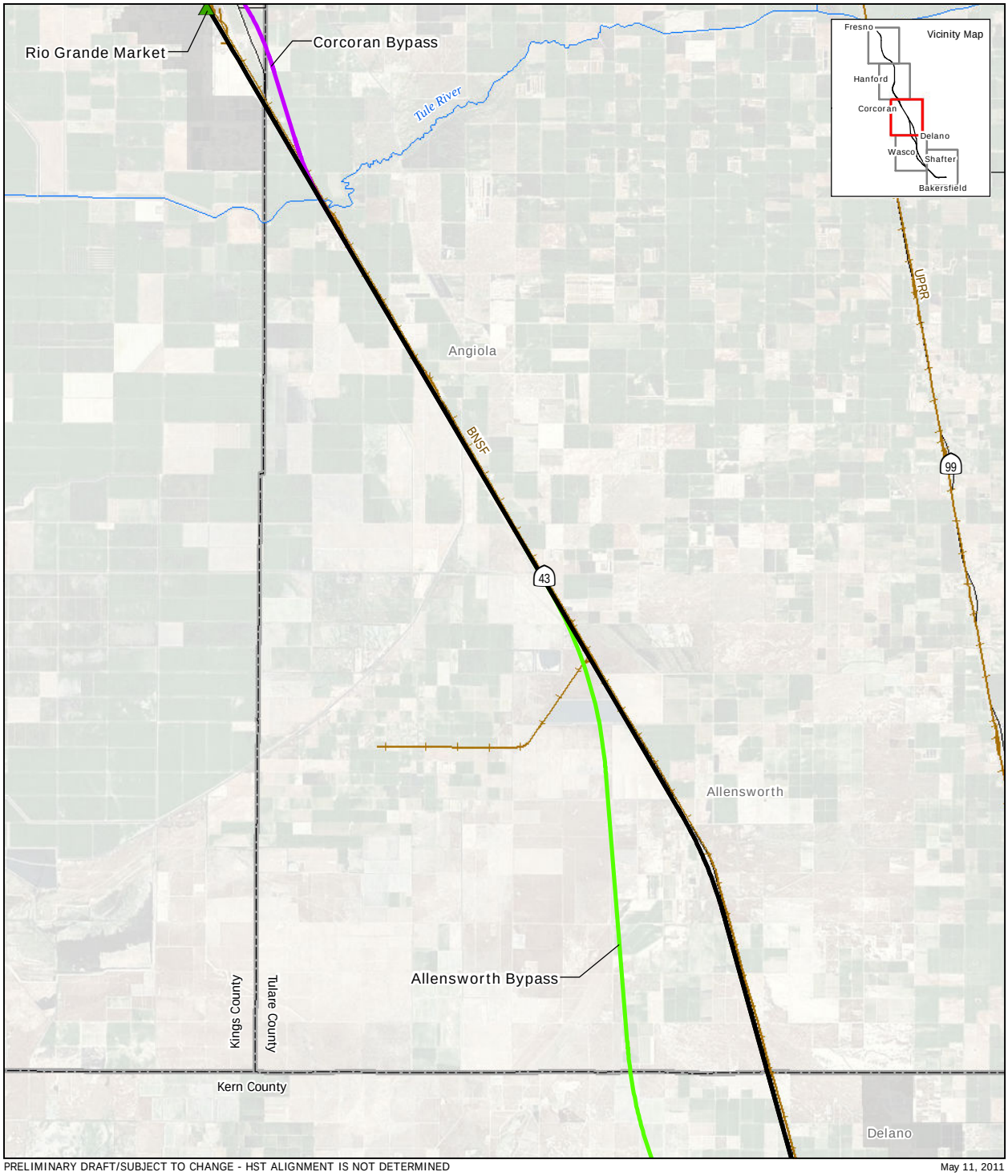
BNSF Alternative
Stream/River
Existing rail line
Highway
1/2 Mile buffer of heavy maintenance facility and station
Community/Urban area
Potential heavy maintenance facility
Proposed Station
Potential Kings/Tulare Regional Station
School
Conceivable potential environmental concern
Current potential environmental concern
Medium risk
High risk

N

0 1 2 Miles

0 2 4 Kilometers

Figure 3.10-2
Hanford area:
Locations of conceivable and current PECs and schools within the project study area



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED

May 11, 2011

Data source: Environmental Data Resources, 2011

- BNSF Alternative
- Stream/River
- Existing rail line
- Highway
- 1/2 Mile buffer of heavy maintenance facility and station
- Community/Urban area
- Potential heavy maintenance facility
- Proposed Station
- Potential Kings/Tulare Regional Station
- School
- Conceivable potential environmental concern

Current potential environmental concern

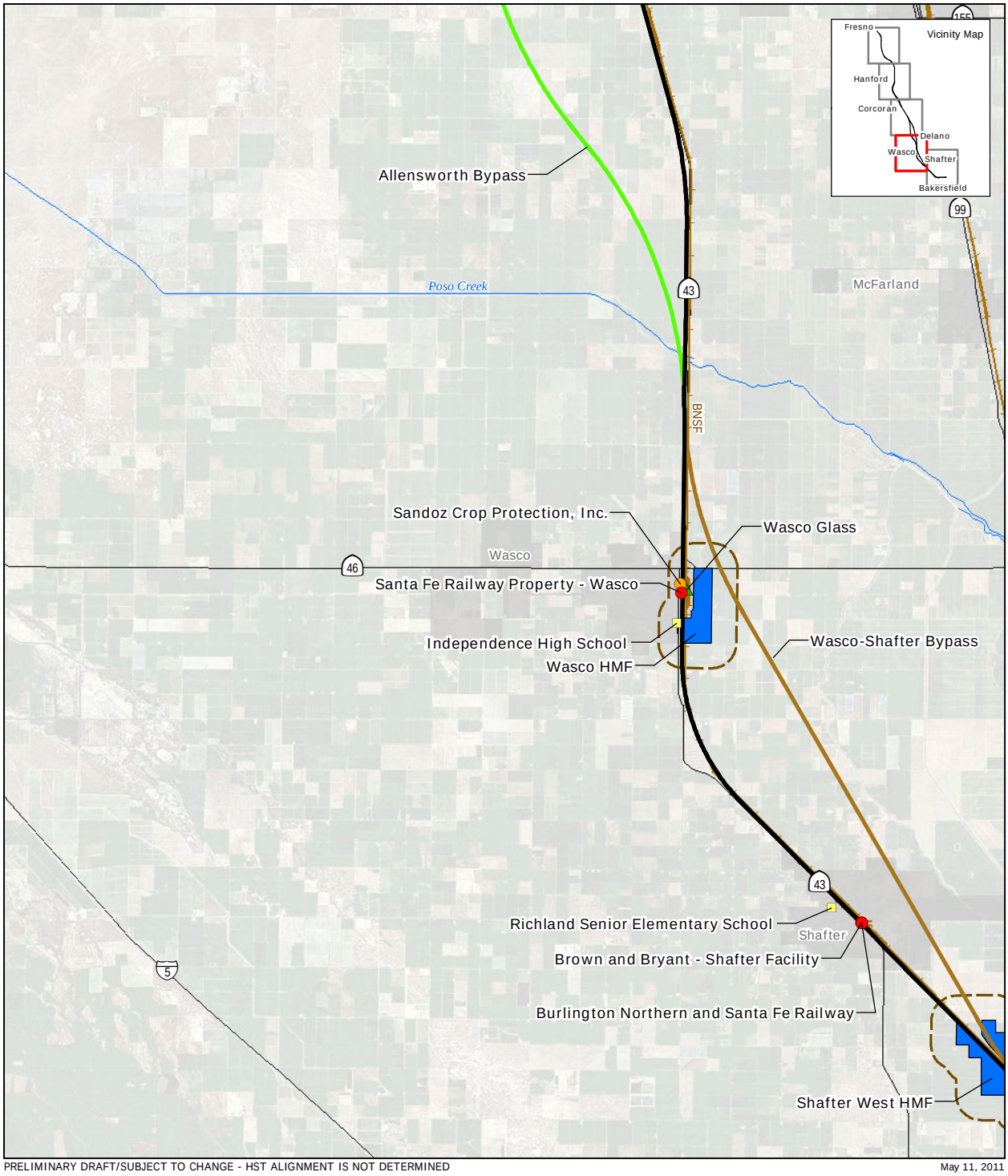
- Medium risk
- High risk

N

0 1 2 Miles

0 2 4 Kilometers

Figure 3.10-3
Corcoran area:
Locations of conceivable and current PECs and schools within the project study area



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED

May 11, 2011

Data source: Environmental Data Resources, 2011

- BNSF Alternative
- Stream/River
- Existing rail line
- Highway
- 1/2 Mile buffer of heavy maintenance facility and station
- Community/Urban area
- Potential heavy maintenance facility
- Proposed Station
- Potential Kings/Tulare Regional Station
- School
- Conceivable potential environmental concern

Current potential environmental concern

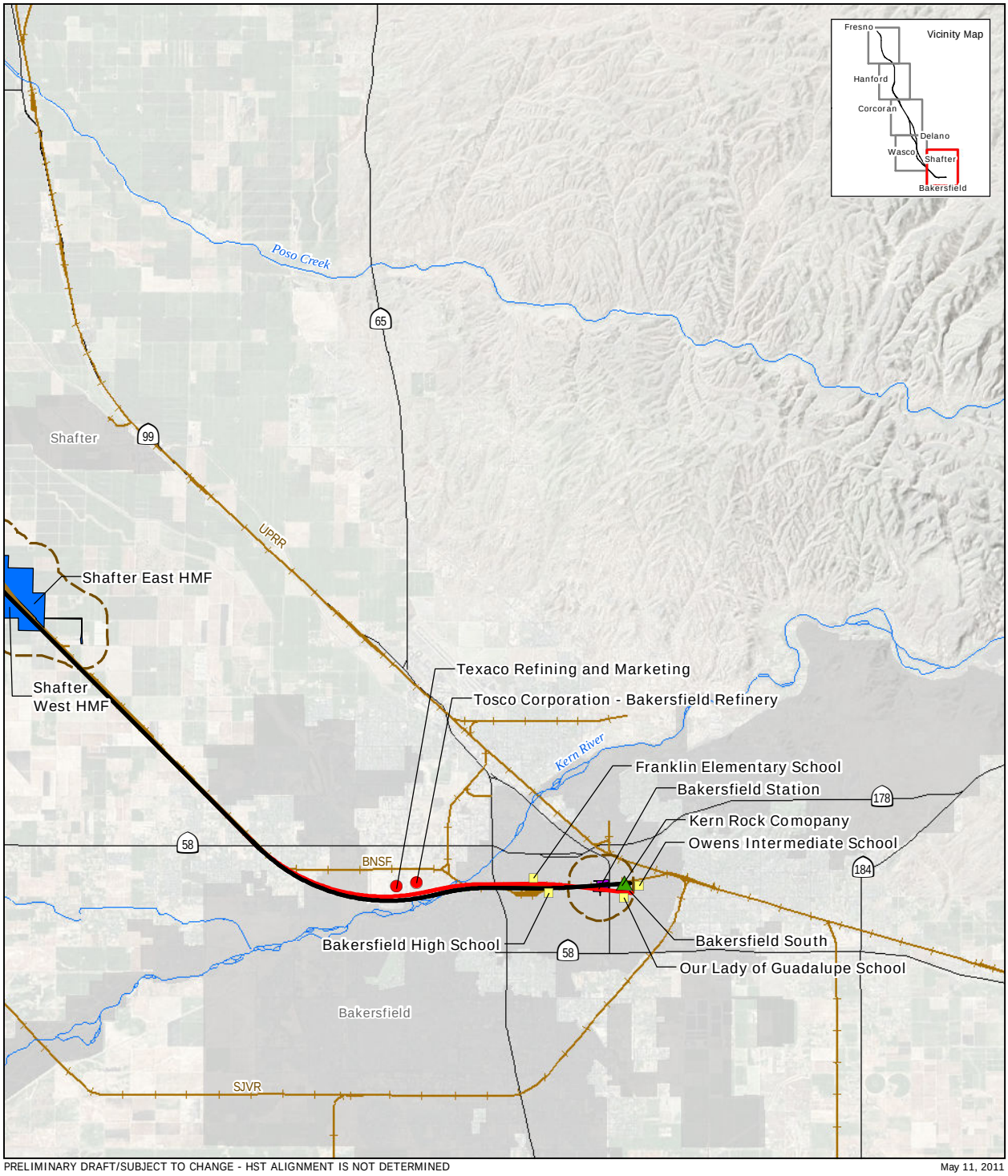
- Medium risk
- High risk

N

0 1 2 Miles

0 2 4 Kilometers

Figure 3.10-4
Wasco - Shafter area:
Locations of conceivable and current PECs and schools within the project study area



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED

May 11, 2011

Data source: Environmental Data Resources, 2011

BNSF Alternative
Stream/River
Existing rail line
Highway
1/2 Mile buffer of heavy maintenance facility and station

Community/Urban area
Potential heavy maintenance facility
Proposed Station
Potential Kings/Tulare Regional Station

School
Conceivable potential environmental concern

Current potential environmental concern
Medium risk
High risk

N

0 1 2
Miles

0 2 4
Kilometers

Figure 3.10-5
Bakersfield area:
Locations of conceivable and current PECs and schools within the project study area

A site would be considered lower-risk if little or no contamination were known to be present but the potential for contamination remained. Such lower-risk sites include Historical PEC sites (where cleanup was completed but residual contamination below action levels could exist) and conceivable PEC sites (where no contamination has been reported but where further investigation or future upsets could result in contamination being identified). By this risk criterion, no current PEC site within the study area would be considered a lower-risk site.

Table 3.10-2 summarizes the numbers of PEC sites by alternative alignment. The values shown in the table represent the total number of conceivable (low-risk), current high-risk, and current medium-risk PECs for each alternative alignment in groups of two alternative alignments, with the difference in number of PEC sites between the two alignments in each group totaled in the bottom row of each comparison.[1] The table also lists PEC sites that are unique to the BNSF Alternative.

PECs on the BNSF Alternative

Some PEC sites are unique to the BNSF Alternative, because they occur in locations without other alignment alternatives. The study area within the city of Fresno contains a dense commercial/industrial zone. The study area in the city of Fresno has 21 current PEC sites with known contamination that are in various stages of investigation or remediation; 7 of the sites are considered high-risk, and 11 of the sites are considered medium-risk. Most sites involve storing, dispensing, or using petroleum products, agricultural chemicals, or other hazardous materials.

The seven current high-risk sites on the BNSF Alternative in the Fresno area are (Figure 3.10-1):

- VOPAK USA. This site is high risk based on its proximity to the alignment alternatives and unresolved contamination issues involving the industrial chemical tetrachloroethene (PCE).
- Former Burlington Northern Santa Fe Ice House. This site is high risk based on its proximity to the alignment alternatives and unresolved surface and subsurface contamination issues involving chromium and hexavalent chromium.
- FMC Corporation. This site is high risk based on its proximity to the alignment alternatives and the unresolved surface, subsurface, and groundwater contamination issues involving a wide variety of agricultural chemicals, including DDT, endrin, toxaphene, dieldrin, and ethion.
- Weir Flowway, Inc. This site is high risk based on its proximity to the alignment alternatives and the potential for unresolved subsurface contamination issues, including petroleum products, chromium, and trichloroethene (TCE).
- Professional Asbestos Removal Corp; (aka PARC Environmental). Removes and disposes of various hazardous waste materials, including ACMs. Facility has multiple violations: Transporters - General, Generators - Pretransport, Generators - General; letter of intent to initiate enforcement action (4/12/2004); final compliance order (6/4/2004).
- Truck City. Diesel tank release; the RWQCB is the lead agency. The case is open, with active site assessment and pollution characterization being performed; the drinking water is affected.

[1] For example, for the comparison of the BNSF and Wasco-Shafter Bypass alternative alignments, Table 3.10-2 shows three current high-risk PEC sites identified along the BNSF Alternative, with none along the Wasco-Shafter Bypass Alternative. Thus, constructing the project with the Wasco-Shafter Bypass Alternative would result in interaction with three fewer known PEC sites in this area.

- South Fresno Regional Groundwater Plume. This site is high risk based on its proximity to the alignment alternatives and the unresolved surface and subsurface contamination issues involving certain volatile organic compounds (e.g., PCE), metals, and pesticides.

From south of the city of Fresno, commencing approximately at Jefferson Avenue, passing through parts of rural Fresno, Kings, Tulare, and Kern counties to the point where the BNSF and the Bakersfield South alternative alignments diverge, the BNSF Alignment Alternative has five PEC sites unique to it (i.e., sites that are not in proximity to any of the bypass alternatives) with known contamination that are in various stages of investigation or remediation. Four of these PEC sites are considered current medium-risk PEC sites, and one is considered a conceivable PEC site.

Table 3.10-2
Potentially Affected PEC Sites by Alternative Alignment

HST Alternative Alignment	Number of PEC Sites		
	Conceivable (Low-Risk)	Current High-Risk	Current Medium-Risk
HST Section: BNSF Alternative			
Sites unique to the BNSF Alternative	4	7	15
HST Section: BNSF and Corcoran Elevated Alternatives			
BNSF Alternative	1	2	0
Corcoran Elevated Alternative	1	2	0
Difference using Corcoran Elevated Alternative	*0*	*0*	*0*
HST Section: BNSF and Corcoran Bypass alternatives			
BNSF Alternative	1	2	0
Corcoran Bypass Alternative	0	2	0
Difference using Corcoran Bypass Alternative	*-1*	*0*	*0*
HST Section: BNSF and Allensworth Bypass Alternatives			
BNSF Alternative	0	0	0
Allensworth Bypass Alternative	0	0	0
Difference using Allensworth Bypass Alternative	*0*	*0*	*0*
HST Section: BNSF and Wasco-Shafter Bypass Alternatives			
BNSF Alternative	1	3	1
Wasco-Shafter Bypass Alternative	0	0	0
Difference using Wasco-Shafter Bypass Alternative	*-1*	*-3*	*-1*

Table 3.10-2
Potentially Affected PEC Sites by Alternative Alignment

HST Alternative Alignment	Number of PEC Sites		
	Conceivable (Low-Risk)	Current High-Risk	Current Medium-Risk
HST Section: BNSF and Bakersfield South Alternatives			
BNSF Alternative	0	2	0
Bakersfield South Alternative	1	2	0
Difference using Bakersfield South Alternative	*+1*	*0*	*0*

HST = high-speed train
PEC = Potential Environmental Concern

PECs for the BNSF and Corcoran Elevated Alternatives

The Corcoran Elevated Alternative Alignment is parallel and in close proximity to the BNSF Alternative Alignment. Two current high-risk PEC sites described below would apply to both the BNSF and the Corcoran Elevated Alternative Alignments (Table 3.10-2; Figures 3.10-2 and 3.10-3). The two current high-risk PEC sites are:

- Corcoran Sanitary Landfill. This site is high risk based on the proximity of the closed solid-waste disposal site to the alternative alignment.
- Puregro-Corcoran. This site is high risk based on its proximity to the alignment and unresolved subsurface contamination issues involving dichlorodiphenyldichloroethylene (DDE), dichlorodiphenyltrichloroethane (DDT), toxaphene, phenoxyherbicides, nitrates, and sodium chlorate.

One conceivable PEC site is also located in the study area for both alternative alignments.

PECs for the BNSF and Corcoran Bypass Alternatives

The two current high-risk PEC sites listed above that would apply to the Corcoran Elevated Alternative would also be in the study area for the Corcoran Bypass Alternative Alignment in the Corcoran area (Table 3.10-2; Figures 3.10-2 and 3.10-3).

No conceivable PEC sites are in the study area for the Corcoran Bypass Alternative.

PECs on the BNSF and Allensworth Bypass Alternatives

No current PEC sites or conceivable PEC sites are in the study area for the BNSF Alternative Alignment near the study area for the Allensworth Bypass Alternative Alignment (Table 3.10-2; Figures 3.10-3 and 3.10-4).

PECs on the BNSF and Wasco-Shafter Bypass Alternatives

Three current high-risk PEC sites, one current medium-risk PEC site; and one conceivable PEC site are in the study area for the BNSF Alternative Alignment in the Wasco-Shafter area (Table 3.10-2; Figure 3.10-4). The three high-risk sites are:

- Santa Fe Railway Property, Wasco. This site is high-risk based on its proximity to the alignments and the potential for unresolved subsurface contamination issues, including pesticides DDT, dichlorodiphenyldichloroethane (DDD), DDE, and metabolites. The site was divided into a consolidation area with limited future use (deed restrictions) and an unrestricted use area.

- Brown and Bryant (B&B), Shafter. This site is high risk based on its proximity to the alignments; outstanding environmental regulatory agency violations; and potential for unresolved subsurface contamination issues, including liquid fertilizers, insecticides, herbicides, fumigants, and defoliants.

- Burlington Northern and Santa Fe Railway, Shafter. This site is high risk based on its proximity to the alignments; outstanding environmental regulatory agency violations; and potential for unresolved subsurface contamination issues, including liquid fertilizers, insecticides, herbicides, fumigants, and defoliants. The site is associated and co-joined with the B&B facility listed above. BNSF owns a portion of the B&B site.

No current or conceivable PEC sites are in the study area for the Wasco-Shafter Bypass Alternative.

PECs on the BNSF and Bakersfield South Alternatives

The study area within the city of Bakersfield is common to the BNSF and Bakersfield South alternatives east of Jewetta Avenue, where the two alternatives diverge. This area is a dense commercial/industrial zone from Coffee Road to Oak Street. The study area in the city of Bakersfield has three current PEC sites with known contamination that are in various stages of investigation or remediation. Two of these sites are considered to be high risk (Table 3.10-2; Figure 3.10-5):

- Tosco Corporation Bakersfield Refinery. This site is high risk based on its proximity to the alignment alternatives, unresolved contamination issues, and multiple environmental regulatory agency violations.

- Texaco Refining. The facility is adjacent to the Tosco Refinery. Benzene, fuel oxygenates, other solvent or nonpetroleum hydrocarbons, toluene, xylene, and arsenic have been detected in groundwater beneath the site. Scattered areas of near-surface, heavy-metal contamination are also present.

One conceivable PEC site is unique to the Bakersfield South Alternative Alignment.

PECs within the Alternative Heavy Maintenance Facility Site Study Areas

The Fresno Works–Fresno HMF site encompasses 696 acres; the site is in the southern limits of the city of Fresno and county of Fresno next to the BNSF Railway right-of-way (Figure 3.10-1). The study area for the Fresno Works–Fresno HMF site has three current medium-risk PEC sites (Table 3.10-3) with known contamination that are in various stages of investigation or remediation. None of the sites is considered a current high-risk site. One of the current PEC sites is an operating solid-waste transfer station and recycling center.

The Kings County–Hanford HMF site encompasses about 880 acres southeast of Hanford (Figure 3.10-2). One conceivable PEC site but no current medium- or high-risk PEC sites are in the study area for the Kings County–Hanford HMF site (Table 3.10-3).

The Kern Council of Governments–Wasco HMF site encompasses about 421 acres directly east of Wasco between SR 46 and Filburn Street (Figure 3.10-4). No current PEC sites and no

conceivable PEC sites are in the study area for the Kern Council of Governments–Wasco HMF site (Table 3.10-3).

The Kern Council of Governments–Shafter East HMF site encompasses about 490 acres in the city of Shafter next to the BNSF Alternative and the Wasco-Shafter Bypass Alternative (Figures 3.10-4 and 3.10-5). No current PEC sites and no conceivable PEC sites are in the study area for the Kern Council of Governments–Shafter East HMF site (Table 3.10-3).

The Kern Council of Governments–Shafter West HMF site encompasses about 480 acres in the city of Shafter next to the BNSF Alternative and the Wasco-Shafter Bypass Alternative (Figures 3.10-4 and 3.10-5). No current PEC sites and no conceivable PEC sites are in the study area for the Kern Council of Governments–Shafter West HMF site (Table 3.10-3).

Table 3.10-3
Potentially Affected PEC Sites by HMF Alternative

HMF Alternative	Number of PEC Sites		
	Conceivable (Low-Risk)	Current High-Risk	Current Medium-Risk
HMF Locations			
The Fresno Works–Fresno HMF site	0	0	3
The Kings County–Hanford HMF site	1	0	0
The Kern Council of Governments–Wasco HMF site	0	0	0
The Kern Council of Governments–Shafter East HMF site	0	0	0
The Kern Council of Governments–Shafter West HMF site	0	0	0
PEC = Potential Environmental Concern			

Proximity to Schools

School locations are important to consider because individuals particularly sensitive to hazardous materials exposure use these facilities; additional protective regulations apply to projects that could use or disturb potentially hazardous products near or at schools. The California Public Resources Code requires projects that would be located within 0.25 mile of a school and might be reasonably expected to emit or handle hazardous materials to consult with the school district regarding potential hazards. Ten educational facilities (defined as colleges, high schools, elementary schools, preschools, or nursery schools) are within 0.25 mile of the centerlines of two alignment alternatives, one Fresno station alternative, and one HMF site alternative, as shown in Table 3.10-4. Figures 3.10-1 through 3.10-5 show the names and locations of these schools. All ten educational facilities were identified within 0.25 mile of the BNSF Alternative. Four of these are also within 0.25 mile of the Bakersfield South Alternative Alignment. Only one school is in proximity to any of the HMF alternative sites. This school, Independence High School, is approximately 0.15 mile west of the southwestern edge of the Kern Council of Governments–Wasco HMF site.

Table 3.10-4
Educational Facilities within 0.25 Mile of the Centerlines of Alignment Alternatives

Facility	Distance from Centerline (miles)	Direction from Alternative Centerline	County	Status
Columbia Elementary School	0.16	West of Fresno Station (BNSF)	Fresno	Active
Pacific Union Elementary School	0.19	West of BNSF Alternative	Fresno	Active
Monroe Elementary School	0.24	East of BNSF Alternative	Fresno	Active
John Muir Junior High School	0.25	West of BNSF Alternative	Kings	Active
Independence High School	0.11 0.15	West of BNSF Alternative West of Kern Council of Governments–Wasco HMF site	Kern	Active
Richland Senior Elementary School	0.19	Southwest of BNSF Alternative	Kern	Active
Franklin Elementary School	0.10 0.19	North of Bakersfield South Alternative North of BNSF Alternative	Kern	Active
Bakersfield High School / Bakersfield Adult School	0.11 0.19	South of BNSF Alternative South of Bakersfield South Alternative	Kern	Active
Our Lady of Guadalupe School	0.11 0.23	South of BNSF Alternative North of Bakersfield South Alternative	Kern	Active
Owens Intermediate	0.05 0.16	South of Bakersfield South Alternative North of BNSF Alternative	Kern	Active

BNSF = BNSF Railway

3.10.5 Environmental Consequences

This section describes the environmental consequences of hazardous materials and wastes for the proposed project. Mitigation measures addressing hazardous materials and waste impacts are listed in Section 3.10.6, Mitigation Measures.

A. OVERVIEW

The construction of the proposed project would result in a temporary increase in the transportation, use, and storage of hazardous materials. Cleanup of PEC sites and demolition of existing structures, if needed, would result in a temporary increase in waste disposal. The project could also encounter unknown hazardous materials during construction. Routine transport, use, storage, and disposal of hazardous materials are governed by numerous laws, regulations, and ordinances. The anticipated routine use and disposal of hazardous materials and wastes during construction and operation and the potential for accidental releases would be similar for all HST alternatives. Operational use of hazardous materials could be somewhat higher at the alternative HMF sites compared to the alignment alternatives.

Table 3.10-2 shows the number of PEC sites by alignment, including those categorized as potentially high risk. PEC sites would be further investigated as necessary before right-of way acquisition and would be remediated to the extent necessary before construction.

The handling of hazardous or acutely hazardous materials, substances, or wastes could occur within 0.25 mile of existing schools for the BNSF Alternative, the Bakersfield South Alternative, and the west of the Kern Council of Governments–Wasco HMF site. No educational facilities are within 0.25 mile of the centerlines of any of the other alternatives.

B. NO PROJECT ALTERNATIVE

Under the No Project Alternative, as described in Chapter 2, Alternatives, and Section 3.2, Transportation, the population in the study area would continue to grow, and changes and improvements to the transportation infrastructure would be implemented. The anticipated growth includes other projects, as listed in Section 3.19, Cumulative Impacts. These improvements are anticipated to require types and quantities of hazardous materials for construction and operation that would be comparable to the HST alternatives. These future improvements would generate a comparable mix and quantity of hazardous wastes proportional to the magnitude of the improvements. Because many of the PEC sites identified in Section 3.10.4(B), Specific Sites of Concern, are associated with the major highway and rail transportation corridors in the project vicinity, these same sites could result in impacts to future No Project Alternative improvements involving the same corridors.

It is reasonable to assume that, by 2035, some of the existing PEC sites would be investigated further and, if necessary, remediated with appropriate regulatory agency oversight. However, it is likely that investigation and cleanup of all potentially hazardous materials in the study area, including contaminated soil or groundwater, would not occur, and the potential for impacts on transportation improvements would continue. Accidental spills or releases of hazardous materials and wastes could occur with continued operation of commercial and industrial facilities or during transportation of these goods. Such accidents might result in new PEC sites that could affect future No Project Alternative improvements.

High-Speed Train Alternatives

This section evaluates direct and indirect impacts that would result from construction and operation of each HST alternative. Construction of the HST would involve the temporary transport, use, storage, and disposal of hazardous materials and waste associated with construction, and there is the potential for disturbance of contaminants at PEC sites that are within the construction footprint. Best management practices and regulations designed to limit the potential for hazards associated with an accidental spill of hazardous materials would reduce the potential for negative environmental impacts. Permanent use of hazardous materials (such as those from the routine use and disposal of hazardous materials and waste for HST system operation and maintenance at an HMF) would be governed by regulations that prescribe the proper use and disposal of such materials.

Construction Period Impacts

Common Hazardous Materials and Wastes Impacts

The construction of any of the project alternatives would involve transporting, using, and disposing of construction-related hazardous materials and wastes. Potentially, such construction could result in accidental spills or releases of hazardous materials and wastes, affect PEC sites (including state Cortese list sites), and result in temporary hazards to schools.

Temporary Transport, Use, Storage, and Disposal of Hazardous Materials and Wastes

Construction of any of the project alternatives, stations, and HMFs would temporarily increase the regional transport, use, storage, and disposal of hazardous materials and petroleum products (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals). These materials are commonly used at construction sites. Hazardous waste generated during construction might consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals.

Hazardous wastes (including ACMs and lead-based paint) might also be generated during demolition of existing buildings. Demolition of buildings and roadways containing asbestos and lead-based materials requires specialized procedures and equipment and appropriately certified personnel. Buildings and roadways intended for demolition that were constructed before 1980 will be surveyed for asbestos-containing materials. Those constructed before 1971 will also be surveyed for lead. A demolition plan for any location with positive results for asbestos or lead would be prepared. The plan would specify how to appropriately contain, remove, and dispose of the asbestos- and lead-containing material while meeting all requirements and BMPs to protect human health and the environment.

Facilities and construction sites that use, store, generate, or dispose of hazardous materials or wastes and hazardous material/waste transporters are required to maintain plans for warning, notification, evacuation, and site security under regulations, as described in Section 3.10.2, Laws, Regulations, and Orders. The project would require a Construction General Permit (Order 2009-0009-DWQ), which requires the designation of special storage areas and labeling, containment berms, coverage from rain, concrete washout areas, and many other best management practices (BMPs) designed to minimize release of contaminants from construction sites. Compliance with the Construction General Permit and implementation of the BMPs during construction would result in no effect under NEPA, and no impact under CEQA.

Accidental spills or releases could occur during transport, storage, use, or disposal of hazardous materials and wastes during construction. The spills or releases that result might create hazards to persons and the environment. Standard accident and hazardous materials recovery training and procedures are enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors. Spill prevention, containment, and control (SPCC) plans must be prepared by all facilities subject to regulation in general accordance with 40 CFR 112. An SPCC plan describes planning, prevention, and control measures to minimize impacts resulting from spills of fuels, petroleum products, or other regulated substances as a result of construction or operation. The intent of the SPCC regulation is prevention, not the after-the-fact reactive measures commonly described in contingency plans. Contingency plans address spill containment and cleanup and management of contaminated soil and groundwater in the event of an accidental spill.

Compliance with various federal and state regulations minimizes the risk of a spill or accidental release of hazardous materials. Regulations also require spill contingency and cleanup plans. However, there is still a possibility that a spill or accidental release would occur. Therefore, the effect of hazardous materials released to the environment in the unlikely event of a leak or spill as the result of an accident or collision is negligible under NEPA and less than significant under CEQA.

Inadvertent Disturbance of Hazardous Materials or Wastes

Trenching and other ground disturbing activities during project construction could disturb undocumented soil or groundwater contamination. Adverse impacts could result if construction activities inadvertently dispersed contaminated material into the environment. For example,

dewatering activities during construction could cause contaminated groundwater to migrate farther in the groundwater table or result in releasing contaminated groundwater to streams. Potential hazards to human health include ignition of flammable liquids or vapors, inhalation of toxic vapors in confined spaces such as trenches, and skin contact with contaminated soil or water.

It is standard practice to prepare a construction management plan that prescribes activities for workers to follow in areas where the presence of undocumented soil or groundwater contamination is suspected based on visual observation or smell. In such instances, construction activities would cease until it is determined, in coordination with regulatory agencies that work can proceed without the risk of injury to persons or the environment. The potential effects of encountering unrecorded contamination would be negligible under NEPA and would be a less-than-significant impact under CEQA.

Construction on, or in Proximity to, PEC Sites

All Alternative Alignments

Construction of portions of the HST may occur at or near PEC sites with ongoing remediation activities, including sites identified pursuant to Government Code Section 65962.5 (Cortese list). Construction activities could encounter contaminants or interfere with ongoing remediation efforts. Unless construction activities are coordinated with site remediation activities, there could be an increased risk of damaging or interfering with remediation site controls (e.g., soil containment areas). Construction could also increase the risk of damaging or interfering with groundwater remediation facilities (e.g., extraction and monitoring wells, pumps, pipelines). Construction at sites with existing contamination could also result in the generation of additional waste materials and expose workers to hazardous materials.

Federal and state regulations and policies, including CERCLA, All Appropriate Inquiry (AAI), California Public Resources Code 21151.4, and the Certified Unified Program administered by the respective city and county agencies, would require the following environmental site assessment procedures (due diligence) for future development on or near a potentially hazardous or contaminated site:

- Phase I Environmental Site Assessment (ESA). If needed, a case-by-case, parcel-level Phase I ESA would be considered. The parcel-level site assessment would include all standards for an AAI put forth by the EPA (40 CFR Part 312) and performed to ASTM standards (ASTM E 1527-05 [ASTM 2005]).

- Phase II Environmental Site Assessment. If the Phase I ESA were to uncover potential contaminated site conditions, a Phase II ESA sampling study would be required. Sampling could include soil, groundwater, or other materials that contained hazardous materials. A written report would be prepared to describe the results, applicable regulations, and recommendations.

- Phase III Environmental Site Assessment. If the Phase II ESA concludes that the site or sites are contaminated, a Phase III ESA would be conducted. A Phase III ESA would generally include a management plan that establishes the design and implementation of mitigation or remediation. Cleanup may include excavation, disposal, bioremediation, or other treatments of conditions subject to regulatory action. All necessary reports, regulations, and permits would be followed to achieve cleanup of the site. Site cleanup would be conducted by the responsible party before property acquisition.

Further investigation of the PEC sites, as described above, would be conducted as needed before property acquisition. Consistent with the Statewide Program EIR/EIS commitment, potential

hazards would be minimized through the careful design and placement of project elements, avoiding contaminated sites where possible. All necessary remediation would be conducted by the responsible party before project construction. If necessary, regulatory approval for construction at contaminated sites would be sought and planned for.

Interference with any ongoing remediation activities at a given site could increase the risk of a release of contaminants or result in an interruption in cleanup; thus, construction at known PEC sites would require coordination with regulatory agencies before advancing. Where effects on PEC sites cannot be avoided, preconstruction activities would address the requirements for constructing at PEC sites in coordination with regulatory agencies. Depending on proposed project activities, such as the need for subsurface ground disturbance, and the known extent and type of contamination, requirements for constructing at contaminated sites could include further evaluation of the level of contamination and associated potential risks to human health and the environment as well as site remediation.

Because of existing laws and regulations and the procedures specified above, the effect of construction on current PEC sites would be negligible under NEPA, and impacts would be less than significant under CEQA.

Heavy Maintenance Facility Site Alternatives

Three PEC sites occur within the footprint of the proposed Fresno Works–Fresno HMF site. One PEC site, the Cedar Avenue Recycling and Transfer Station, appears on the Cortese list pursuant to Government Code Section 65962.5. If necessary, further investigation of the PEC sites, as described above, would be conducted before property acquisition. Consistent with the Statewide Program EIR/EIS commitment, potential hazards would be minimized through the careful design and placement of project elements. All necessary remediation would be conducted by the responsible party before project construction. If necessary, regulatory approval for construction at contaminated sites would be sought. None of the other alternative HMF sites have PEC sites within their proposed footprints, as shown in Table 3.10-3. Conclusions regarding impacts under NEPA and CEQA are the same as those for the alignment alternatives.

Temporary Hazardous Material and Waste Activities in the Proximity of Schools

BNSF and Bakersfield South Alternative Alignments

During construction, demolition, and excavation activities, the project would potentially emit hazardous air emissions or involve the handling of extremely hazardous wastes above threshold quantities. As noted in Table 3.10-4, 10 schools are within 0.25 mile of the centerline of the BNSF Alternative, and four schools are within 0.25 mile of the centerline of the Bakersfield South Alternative. Potentially hazardous materials and items containing potentially hazardous materials would be used in railway construction, and demolition of existing structures within the project footprint could require the removal of ACMs and lead-based paint from project sites.

Prior to construction, any schools within the construction footprint would be relocated; this would eliminate any further impact to these schools. As discussed above, the project would comply with all federal and state regulations that are generally anticipated to reduce the potential for the release of large quantities of hazardous materials and wastes into the environment to an acceptable level. However, these standard procedures would not obviate the potential for the accidental release of an extremely hazardous substance (as defined in PRC Section 21151.4) in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code within 0.25 mile of a school. Because of the potential for the accidental release of extremely hazardous materials, the effect of HST construction related to routine transport and handling of hazardous or acutely hazardous

materials within 0.25 mile of an existing or proposed school would be moderate under NEPA, and the impacts would be potentially significant under CEQA.

Other Alignment Alternatives

No schools are located within 0.25 mile of the centerline of the other alignment alternatives. Therefore, the effect of HST construction related to routine transport and handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school would result in no effect under NEPA, and no impact under CEQA for these alignments.

Heavy Maintenance Facility Site Alternatives

One school is within 0.25 mile of the Kern Council of Governments–Wasco alternative HMF site; no schools are within 0.25 mile of the other HMF alternative sites. The transportation, use, and storage of hazardous materials and wastes for the Kern Council of Governments–Wasco alternative HMF site would be the same as for the BNSF and South Bakersfield Alternatives; therefore, the effect would be the same as for the BNSF and South Bakersfield Alternatives.

Project Impacts

Common Hazardous Materials and Wastes Impacts

Operation and maintenance of any of the HST alternatives would involve the transport, use, storage, and disposal of small quantities of hazardous materials or wastes associated with the routine maintenance of stations and other facilities. The HST System would be dedicated to passenger transport and is not intended for the transport of freight or hazardous substances. Therefore, no impact would result from the transport of hazardous materials or hazardous wastes on the train itself.

Transport, Use, Storage, and Disposal of Hazardous Materials and Wastes

All Alternative Alignments

Operation of the HST would require only minor amounts of hazardous materials. Examples of the use of these materials are the periodic use of herbicides in the right-of-way to control weeds, janitorial supplies at stations, and greases to lubricate switching equipment along the trackway. However, the quantities of materials used and wastes generated by the HST would be small compared to wastes generated by other transportation services (such as conventional passenger automobiles or air travel, which use petroleum-based vehicle fuel as the primary means of power) and commercial or industrial production facilities. The routine transport, storage, use, and disposal of the substances used by the project are regulated by a number of federal, state, and local laws. The Authority would prepare and implement plans to manage the transport, storage, use and disposal of hazardous materials. These plans would include:

- A California hazardous materials business plan (pursuant to California Health and Safety Code Section 25500), which specifies the requirements for material inventory management, inspections, training, recordkeeping, and reporting.
- A spill prevention, containment, and countermeasures plan, pursuant to 40 CFR 112 or, for small quantities, a spill prevention and response plan, both of which would identify BMPs for spill and release prevention and provide procedures and responsibilities for rapidly, effectively, and safely cleaning up and disposing of any spills or releases.

Also, they would register with the State of California as a hazardous waste generator and implement the requirements for storage, labeling, contingency planning, training, shipping, reporting, and disposal, pursuant to Title 22 CCR Section 66260.

Because of adherence to these regulations, HST operations associated with creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would result in no effect under NEPA, and no impact under CEQA.

Although the transport and use of hazardous materials are governed by numerous regulations, there is always a chance that a spill or accidental release could occur. Compliance with various federal and state regulations minimizes the risk of a spill or accidental release of hazardous materials. Regulations also require spill contingency and cleanup plans. With adherence to these regulations, the effect of hazardous materials released to the environment in the unlikely event of a leak or spill as the result of an accident or collision would be negligible under NEPA and less than significant under CEQA.

The HST is a passenger transportation system; it would not be used to transport freight or hazardous substances. Therefore, no impact would result from the transport of hazardous materials or hazardous wastes within the system. As described in Chapter 2, Alternatives, all existing transportation routes that potentially conflict with the proposed HST alternatives would be relocated to avoid such conflicts, including use of grade separations. The HST System would be constructed on tracks separate from slow-speed passenger and freight rail, with physical separation by distance and, potentially, physical barriers, if FRA standards require them. These separations, as well as design characteristics that would keep any potential HST derailment within the track guideway (see Section 3.11, Safety and Security), would eliminate the potential for collisions with any transporter of hazardous materials that could result in a release to the environment.

Heavy Maintenance Facility Site Alternatives

Operation of the proposed HMF (regardless of the alternative site selected) would involve the use, storage, and disposal of hazardous materials and petroleum products associated with the maintenance of HST equipment. Hazardous materials and waste and storage equipment could include fuel storage tanks, storage tanks for lubricants and used oils, washracks, storage tanks for degreasing solvents and for used solvents, paints/coatings and associated solvents, and compressed gases and solder for welding. Compared with operating the high-speed train and its stations, operation of the HMF may involve a somewhat larger quantity of materials and wastes (for maintaining and repairing rail vehicles).

The project would be required to register with the State of California as a hazardous waste generator and to implement the requirements for storage, labeling, contingency planning, training, shipping, reporting, and disposal (pursuant to Title 22 CCR Section 66260). Because of this, the routine transport, storage, use, and disposal of hazardous materials at the HMF site would result in no effect under NEPA and no impact under CEQA. The possibility of a spill or accidental release would remain. The effect of a release of hazardous materials to the environment in the unlikely event of a leak or spill as the result of an accident or collision would be negligible under NEPA and less than significant under CEQA with adherence to regulations regarding spill contingency planning and cleanup.

Hazardous Materials and Wastes in the Proximity of Schools

Use of hazardous materials and generation of hazardous wastes would be limited mostly to small amounts for routinely maintaining HST stations and other facilities, and larger amounts for maintaining and repairing trains at the HMF.

All Alternative Alignments

The trains would operate on electric power. Therefore, powering the trains would have none of the emissions associated with the use of diesel fuel, natural gas, or other fuels. No acutely hazardous materials would be required to operate the passenger rail service under any of the alternatives. Operation of the HST System would reduce future congestion related to passenger vehicles. Reduced congestion could decrease the risk of vehicle accidents, reducing the potential for hazardous material releases from an accident. Reduced accident potential could result in a beneficial effect to children in nearby schools.

Heavy Maintenance Facility Site Alternatives

One school is within 0.25 mile of the Kern Council of Governments–Wasco HMF site. No schools are near the other HMF sites. The unregulated emission of hazardous materials or the handling of acutely hazardous materials at an HMF near sensitive receptors, such as schools, could adversely affect human health or safety. The HST project would comply with all applicable federal and state regulations pertaining to hazardous materials and wastes, and schools within the construction footprint (one building at Bakersfield High School within the footprint of the BNSF Alternative) would be relocated during property acquisition. Additionally, as discussed above for construction, the project would include the preparation and implementation of hazardous materials management plans pursuant to California Health and Safety Code Section 25500 and 40 CFR 112. As a registered hazardous waste generator, the HMF would also implement storage, labeling, contingency planning, training, shipping, reporting, and disposal requirements (pursuant to Title 22 CCR Section 66260) designed to reduce the potential for an adverse effect on the environment. However, because of the potential for an accidental release of extremely hazardous materials, the effect of HST operation at the Kern Council of Governments–Wasco HMF site related to routine transport and handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school would be moderate under NEPA, and the impacts would be potentially significant under CEQA.

3.10.6 Mitigation Measures

The Authority and FRA have considered avoidance and minimization measures consistent with the Statewide and Bay Area to Central Valley Program EIR/EIS commitments (Authority and FRA 2005, [2008] 2010). Materials and wastes would be handled, transported, and disposed of in accordance with applicable state and federal regulations, such as RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act (see Section 3.3, Air Quality, for regulations applying to hazardous air pollutants). During project design and construction, the HST project could implement measures to reduce impacts resulting from the use of hazardous materials, generation of hazardous waste, and potential disturbance of hazardous waste sites, as discussed in Section 3.10.5, Environmental Consequences.

To mitigate for potential impacts to schools within 0.25 mile of the project footprint, the following mitigation measure could be implemented:

HMW-MM#1: Limit use of extremely hazardous materials near schools during construction. The contractor shall not handle an extremely hazardous substance (as defined in California Public Resources Code Section 21151.4) or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code within 0.25 mile of a school.

HMW-MM#2: Limit use of extremely hazardous materials at the Kern Council of Governments–Wasco HMF facility during operation. The Kern Council of Governments-Wasco HMF site is within 0.25 mile of an existing school. If the HMF facility is located at this site

the operator shall not handle an extremely hazardous substance (as defined in California Public Resources Code Section 21151.4) or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code within 0.25 mile of a school to the extent consistent with project requirements.

3.10.7 NEPA Impacts Summary

Under the No Project Alternative, the general increase in population over time in the Central Valley would result in the increased use of hazardous materials and increased waste generation during construction and operation of future infrastructure and development projects. These future improvements would use hazardous materials and generate hazardous wastes proportional to the magnitude of the improvements. Because many of the PEC sites identified in Section 3.10.4(B), Specific Sites of Concern, are associated with the major highway and rail transportation corridors in the project vicinity, these PEC sites and other nearby similar sites could conflict with future infrastructure and development projects.

Construction of the Fresno to Bakersfield Section of the HST System would result in the temporary increased use of hazardous materials and a temporary increase in waste generation, including ACM and lead-based materials. Adherence to regulations regarding the routine use, storage, and disposal of hazardous materials would result in no effects. Transport and use of hazardous materials during construction could result in accidental spills of hazardous materials. However, the potential for accidental spills and releases would generally be reduced to negligible with implementation of regulatory requirements.

Construction could inadvertently disturb sites with previously undocumented contamination or could affect known sites with contaminated soil and groundwater. To the extent feasible, project design would avoid known sites, for example, by elevating the track. Construction at contaminated sites would be contingent on coordination with regulatory agencies; therefore, the potential effects are considered to be negligible.

During operation of the HST system, only minor amounts of hazardous materials would be used, and all laws, regulations, and ordinances would be followed with respect to the transport, use, storage, and disposal of hazardous materials. Use of materials at the HMF could result in accidental spills of hazardous materials that could result in negligible to substantial impacts, depending on the materials and the severity of a spill and the HMF site selected. In general, implementation of regulatory requirements would reduce the potential for a severe spill to a negligible level except if the Kern Council of Governments-Wasco HMF site is selected.

3.10.8 CEQA Significance Conclusions

Table 3.10-5 provides a summary of CEQA impacts, the associated mitigation measures, and the level of significance after mitigation.

Table 3.10-5
Summary of Potentially Significant Hazardous Material and Waste Impacts and Mitigation Measures

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Construction Period Impacts			
HMW#1. Handling of Extremely Hazardous Materials within 0.25 mile of a School Ten schools are within 0.25 mile of the centerline of the BNSF Alternative, and four schools are within 0.25 mile of the centerline of the Bakersfield South Alternative. One school is within 0.25 mile of the Kern Council of Governments–Wasco alternative HMF site	Significant	**HMW-MM#1:** No use of extremely hazardous substances or a mixture thereof 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.	Less than significant
Project Impacts			
HMW#1. Handling of Extremely Hazardous Materials within 0.25 mile of a School One school is within 0.25 mile of the Kern Council of Governments–Wasco HMF site**.**	Significant	**HMW-MM#2:** No use of extremely hazardous substances or a mixture thereof in a quantity equal to or greater than the state threshold quantity (Health and Safety Code Section 25532) at the Kern Council of Governments–Wasco HMF within 0.25 mile of a school to the extent consistent with project requirements.	Significant The types and quantities of extremely hazardous substances to be used at the HMF are not yet identified. It may not be feasible to limit the use of all these materials during HMF operations. Therefore, the impact may remain significant.

HMF = heavy maintenance facility

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