CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report / Environmental Impact Statement

DRAFT

Fresno to Bakersfield

Hazardous Wastes and Materials Technical Report

July 2012

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

Fresno to Bakersfield

Hazardous Wastes and Materials Technical Report

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Acronyms and Abbreviations

ACM	asbestos-containing material
ADL	aerially deposited lead
aka	also known as
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
Authority	California High-Speed Rail Authority
C&D	construction and demolition
Cal-EPA	California Environmental Protection Agency
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CARTS	Cedar Avenue Recycling and Transfer Station
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
Cortese	"Cortese" Hazardous Waste and Substances Sites Database
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DDE	dichlorodiphenyldichloroethylene (pesticide)
DDT	dichlorodiphenyltrichloroethane (pesticide)
DOT	U.S. Department of Transportation
DTSC	California Department of Toxic Substances Control
EDR	Environmental Data Resources, Inc.
EIR	environmental impact report
EIS	environmental impact statement
EPIC	Environmental Protection Indicators for California

ESA	environmental site assessment
FAA	Federal Aviation Administration
FHSZ	fire hazard severity zone
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
GIS	geographic information system
gpm	gallon(s) per minute
HAZWOPER	Hazardous Waste Operations and Emergency Response
HEPA	high-efficiency particulate air
HMF	heavy maintenance facility
HMTA	Hazardous Materials Transportation Act
HR	hydrologic region
HST	high-speed train
HUD	U.S. Department of Housing and Urban Development
ID	identification
LBP	lead-based paint
LEA	Local Enforcement Agency (Fresno County)
LUST	leaking underground storage tank
MA	million years ago
MCL	maximum contaminant level
MSDS	material safety data sheet
NOA	naturally occurring asbestos
NEPA	National Environmental Policy Act of 1969
NPL	National Priority List (Superfund)
OEHHA	California Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OSHA	Occupational Safety and Health Administration
PASI	Preliminary Assessment/Site Investigation
PCB	polychlorinated biphenyl

PCE	perchloroethylene (synonyms: tetrachloroethylene, tetrachloroethene, perchloroethene)
PEC	potential environmental concern
PEL	permissible exposure limit
PHG	public health goal
PPE	personal protective equipment
RCRA	Resource Conservation and Recovery Act
REL	reference exposure level
ROD	Record of Decision
RP	responsible party
RSL	(U.S. EPA) Regional Screening Level
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SCBA	self-contained breathing apparatus
SLIC	Spills, Leaks, Investigations, and Clean-Up database
SMP/CP	Site Management Program/Contingency Plan
SPCC	spill prevention, containment, and control
SR	State Route
SSG	(U.S. EPA) Soil Screening Guidance
Statewide Program EIR/EIS	*Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train (HST) System* (Authority and FRA 2005)
SVE	soil-vapor extraction
SWLF	solid waste landfill
SWRCB	State Water Resources Control Board
TCE	trichloroethylene
TPS	traction power substation
TSCA	Toxic Substances Control Act
TSDF	treatment, storage, and disposal facility
UPRR	Union Pacific Railroad

URS	URS Corporation
U.S.C.	U.S. Code
U.S. EPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound

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Chapter 1
Introduction

1.0 Introduction

1.1 Overview

This technical report describes the alternative alignments, regulatory setting, existing conditions, potential impacts, and recommended mitigation measures associated with potential existing hazardous wastes and hazardous materials that may affect the Fresno to Bakersfield Section of the California High-Speed Train (HST) System. Also, this report suggests how construction in this corridor may use hazardous materials or result in the generation of hazardous wastes and discusses mitigation strategies to be implemented to reduce impacts.

The California High-Speed Rail Authority (Authority) proposes to construct, operate, and maintain an electric-powered HST System in California. When completed, the nearly 800-mile (1,287-kilometer) train system would provide new passenger rail service to more than 90% of the state's population. More than 200 weekday trains would serve the statewide intercity travel market. The HST would be capable of operating at speeds of up to 220 miles per hour (354 kilometers per hour), with state-of-the-art safety, signaling, and automated train control systems. The system would connect and serve the major metropolitan areas of California, extending from San Francisco and Sacramento in the north to San Diego in the south.

In 2005, the Authority and the Federal Railroad Administration (FRA) prepared a Program Environmental Impact Report/Environmental Impact Statement (Statewide Program EIR/EIS) evaluating HST's ability to meet the existing and future capacity demands on California's intercity transportation system (Authority and FRA 2005). This was the first phase of a tiered environmental review process (Tier 1) for the proposed statewide HST system. The Authority and FRA completed a second Program EIR/EIS in July 2008 to identify a preferred alignment for the Bay Area to Central Valley section (Authority and FRA 2008).

The Authority and FRA are now undertaking second-tier, project environmental evaluations for sections of the statewide HST system. This Hazardous Wastes and Materials Technical Report is for the Fresno to Bakersfield Section. The Fresno to Bakersfield Section begins at the proposed Fresno HST station in downtown Fresno and extends east past the proposed Bakersfield HST station in downtown Bakersfield for approximately 1 mile (1.6 kilometer) to Oswell Street. Information from this report is summarized in the project EIR/EIS for the Fresno to Bakersfield HST Section and will be part of the administrative record supporting the environmental review of the proposed project.

For the HST system, including the Fresno to Bakersfield Section, FRA is the lead federal agency for compliance with the National Environmental Policy Act (NEPA) and other federal laws. The Authority is serving as a joint-lead agency under NEPA and is the lead agency for compliance with the California Environmental Quality Act (CEQA). The U.S. Army Corps of Engineers is serving as a cooperating agency under NEPA for the Fresno to Bakersfield Section.

1.2 Limits and Exceptions

This report and the associated work have been provided in accordance with the principles and practices generally employed by the local environmental consulting profession. This report and the associated work are in lieu of all warranties, expressed or implied.

This report was not intended to be a definitive investigation of potential contamination in the study area and the recommendations provided are not necessarily inclusive of all the possible conditions. This assessment is not a regulatory compliance audit or an evaluation of the efficiency of the use of any hazardous materials in the study area. Neither soil nor groundwater sampling was undertaken during this investigation. Sampling for asbestos, radon, lead-based

paint, and lead in drinking water was not performed as part of this assessment. Given that the scope of services for this investigation was limited, it is possible that currently unrecognized contamination might exist in the study area.

The conclusions presented in this report are professional opinions based solely on the indicated information and the data described in this report, visual observations of select properties in the study area and vicinity, and URS Corporation's (URS') interpretation of the available historical information and documents reviewed, as described in this report. Unless URS has actual knowledge to the contrary, information obtained from interviews or provided to URS by the client has been assumed to be correct and complete. URS does not assume any liability for information that has been misrepresented to it by others or for items not visible, accessible, or present in the study area during the time of the field reconnaissance. The conclusions are intended exclusively for the purpose outlined herein and the project and project location indicated. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users (e.g., for the purchase of properties, temporary construction easements, or right-of-way acquisitions within the potential HST study area), and any use or reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user.

Opinions and recommendations presented herein apply to the study area conditions existing at the time of our investigation and cannot necessarily apply to study area changes of which URS is not aware and has not had the opportunity to evaluate. Changes in the conditions in the study area may occur with time due to natural processes or the works of man in the subject study area or adjacent properties. Changes in applicable standards may also occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond URS' control. Opinions and judgments expressed herein are based on URS' understanding and interpretation of current regulatory standards and should not be construed as legal opinions. In addition, changes may occur after the date of issue of the report. Some examples of study area condition changes that limit the useful life of this type of report are property usage changes, changes in ownership, the occurrence of additional environmental releases, implementation of regulatory changes, updating of regulatory agency files, and/or development of new investigation or remediation results. These or other potential changes could affect the recommendations in this report.

Chapter 2
Alternatives

2.0 Alternatives

2.1 Project Introduction

The Fresno to Bakersfield Section of the HST project would be approximately 114 miles long, varying in length by only a few miles depending on the route alternatives selected. To comply with the Authority's guidance to use existing transportation corridors when feasible, the Fresno to Bakersfield HST Section would primarily be located adjacent to the existing BNSF Railway right-of-way. Alternative alignments are being considered where engineering constraints require deviation from the existing railroad corridor, and where necessary to avoid environmental impacts.

The Fresno to Bakersfield HST Section would cross both urban and rural lands and include a station in both Fresno and Bakersfield, a potential Kings/Tulare Regional Station in the vicinity of Hanford, a potential heavy maintenance facility (HMF), and power substations along the alignment. The HST alignment would be entirely grade-separated, meaning that crossings with roads, railroads, and other transport facilities would be located at different heights (overpasses or underpasses) so that the HST would not interrupt nor interface with other modes of transport. The HST right-of-way would also be fenced to prohibit public or vehicle access. The project footprint would primarily consist of the train right-of-way, which would include both a northbound and southbound track in an area typically 120 feet wide. Additional right-of-way would be required to accommodate stations, multiple track at stations, maintenance facilities, and power substations.

The Fresno to Bakersfield Section would include at-grade, below-grade, and elevated track segments. The at-grade track would be laid on an earthen rail bed topped with rock ballast approximately 6 feet off the ground; fill and ballast for the rail bed would be obtained from permitted borrow sites and quarries. Below-grade track would be laid in an open or covered trench at a depth that would allow roadway and other grade-level uses above the track. Elevated track segments would span long sections of urban development or aerial roadway structures and consist of steel truss aerial structures with cast-in-place reinforced-concrete columns supporting the box girders and platforms. The height of elevated track sections would depend on the height of existing structures below, and would range from 40 to 80 feet. Columns would be spaced 60 to 120 feet apart.

2.2 Project Alternatives

2.2.1 Alignment Alternatives

This section describes the Fresno to Bakersfield HST Section project alternatives, including the No Project Alternative. The Project EIR/EIS for the Fresno to Bakersfield HST Section examines alternative alignments, stations, and HMF sites within the general BNSF Railway corridor. Discussion of the HST project alternatives begins with a single continuous alignment (the BNSF Alternative) from Fresno to Bakersfield. This alternative most closely aligns with the preferred alignment identified in the Record of Decision (ROD) for the Statewide Program EIR/EIS. Descriptions of the additional eight alternative alignments that deviate from the BNSF Alternative for portions of the route then follow. The alternative alignments that deviate from the BNSF Alternative were selected to avoid environmental, land use, or community issues identified for portions of the BNSF Alternative (Figure 2-1).

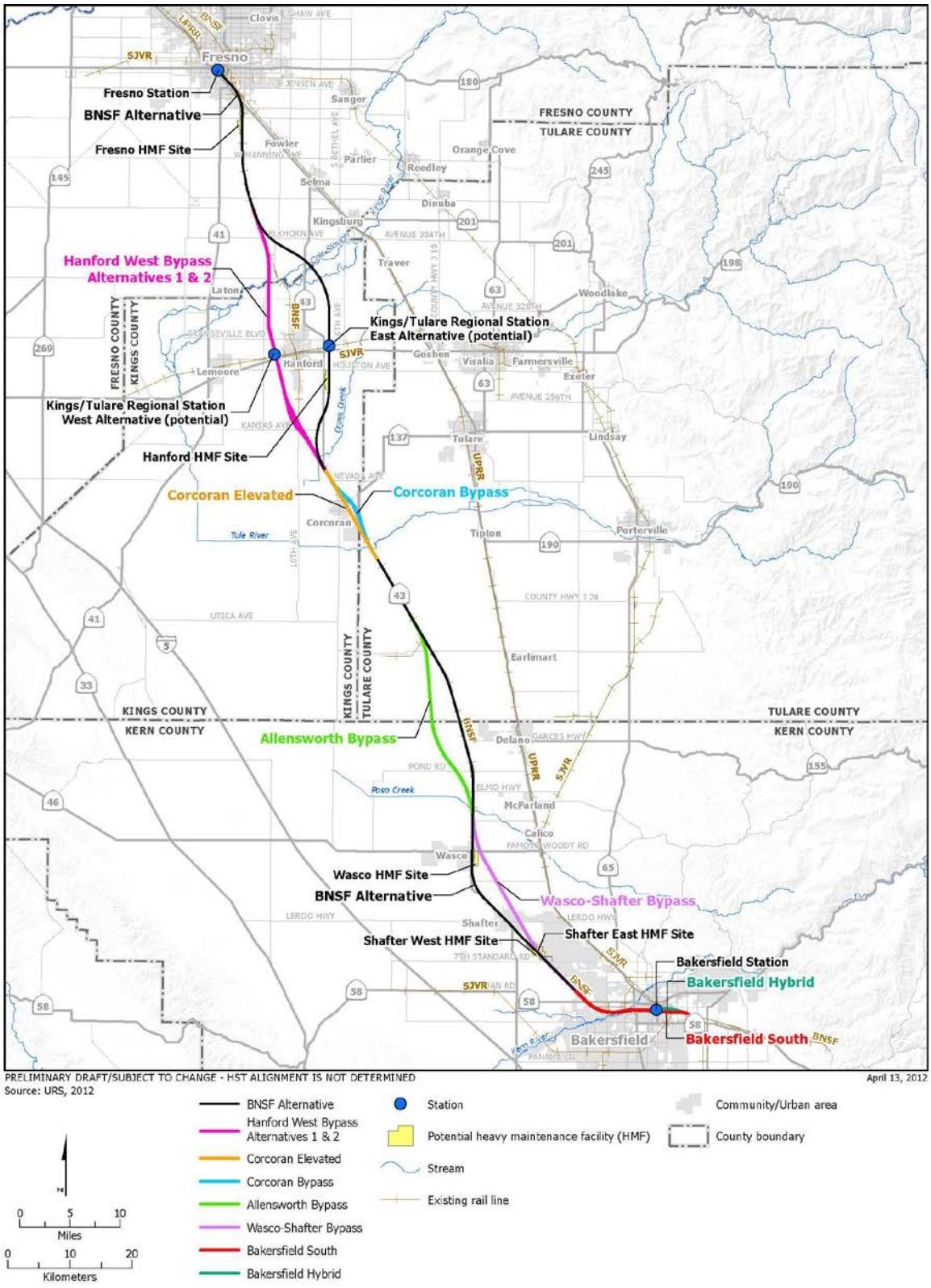

Figure 2-1
Fresno to Bakersfield HST alignments

2.2.1.1 No Project Alternative

Under the No Project Alternative, the HST System would not be built. The No Project Alternative represents the condition of the Fresno to Bakersfield Section as it existed in 2009 (when the Notice of Preparation was issued), and as it would exist without the HST project at the planning horizon (2035). In assessing future conditions, it was assumed that all currently known programmed and funded improvements to the intercity transportation system (highway, rail, and transit), and reasonably foreseeable local development projects (with funding sources identified), would be developed by 2035. The No Project Alternative is based on a review of regional transportation plans (RTPs) for all modes of travel, the State of California Office of Planning and Research CEQAnet Database, the Federal Aviation Administration Air Carrier Activity Information System and Airport Improvement Plan grant data, the State Transportation Improvement Program, airport master plans and interviews with airport officials, intercity passenger rail plans, and city and county general plans and interviews with planning officials.

2.2.1.2 BNSF Alternative

The BNSF Alternative's cross sections include provisions for a 102-foot separation of the HST track centerline from the BNSF Railway track centerline, as well as separations that include swale or berm protection, or an intrusion protection barrier (wall) where the HST tracks are closer. A 102-foot separation between the centerlines of BNSF Railway and HST tracks is provided wherever feasible and appropriate. In urban areas where a 102-foot separation could result in substantial displacement of businesses, homes, and infrastructure, the separation between the BNSF Railway and HST was reduced. The areas with reduced separation require protection to prevent encroachment on the HST right-of-way in the event of a freight rail derailment. The use of a swale, berm, or wall protection would depend on the separation distance.

The BNSF Alternative would extend approximately 114 miles from Fresno to Bakersfield and would lie adjacent to the BNSF Railway route to the extent feasible (Figure 2-1). Minor deviations from the BNSF Railway corridor would be necessary to accommodate engineering constraints, namely wider curves necessary to accommodate the HST (as compared with the existing lower-speed freight line track alignment). The largest of these deviations occurs between approximately Elk Avenue in Fresno County and Nevada Avenue in Kings County. This segment of the BNSF Alternative would depart from BNSF Railway corridor and instead curve to the east on the northern side of the Kings River and away from Hanford, and would rejoin the BNSF Railway corridor north of Corcoran.

Although the majority of the alignment would be at-grade, the BNSF Alternative would include aerial structures in all of the four counties through which it travels. In Fresno County, an aerial structure would carry the alignment over Golden State Boulevard and SR 99, and a second would cross over the BNSF Railway tracks in the vicinity of East Conejo Avenue. The alignment would be at-grade with bridges where it crosses Cole Slough and the Kings River into Kings County.

In Kings County, the BNSF Alternative would be elevated east of Hanford where the alignment would pass over the San Joaquin Valley Railroad (SJVR) and SR 198. The alignment would also be elevated over Cross Creek, and again in the city of Corcoran to avoid a BNSF Railway spur and agricultural facilities located at the southern end of the city. In Tulare County, the BNSF Alternative would be elevated at the Tule River crossing and over Deer Creek and the Stoil railroad spur that runs west from the BNSF Railway mainline. In Kern County, the BNSF Alternative would be elevated through the cities of Wasco, Shafter, and Bakersfield. The BNSF Alternative would be at-grade through the rural areas between these cities.

The BNSF Alternative would provide wildlife crossing opportunities by means of a variety of engineered structures. Dedicated wildlife crossing structures would be provided from

approximately Cross Creek (Kings County) south to Poso Creek (Kern County) in at-grade portions of the railroad embankment at approximately 0.3-mile intervals. In addition to those structures, wildlife crossing opportunities would be available at elevated portions of the alignment, at bridges over riparian corridors, at road overcrossings and undercrossings, and at drainage facilities (i.e., large-diameter [60 to 120 inches] culverts and paired 30-inch culverts). Where bridges, aerial structures, and road crossings coincide with proposed dedicated wildlife crossing structures, such features would serve the function of, and supersede the need for, dedicated wildlife crossing structures.

The preliminary wildlife crossing structure design consists of a modified culvert in the embankment that would support the HST tracks. The typical culvert would be 73 feet long from end to end (crossing structure distance), would span a width of approximately 10 feet (crossing structure width), and would provide 3 feet of vertical clearance (crossing structure height). Additional wildlife crossing structure designs could include circular or elliptical pipe culverts, and larger (longer) culverts with crossing structure distances of up to 100 feet. The design of the wildlife crossing structures may change depending on site-specific conditions and engineering considerations.

2.2.1.3 Hanford West Bypass 1 Alternative

The Hanford West Bypass 1 Alternative would parallel the BNSF Alternative from East Kamm Avenue to approximately East Elkhorn Avenue in Fresno County. At East Conejo Avenue where the BNSF Alternative crosses to the eastern side of the BNSF Railway tracks to pass the city of Hanford to the east, the Hanford West Bypass 1 Alternative continues south on the western side of the BNSF Railway tracks. The Hanford West Bypass 1 would diverge from the BNSF Railway corridor just south of East Elkhorn Avenue and ascend onto an elevated structure just south of East Harlan Avenue, crossing over the Kings River complex and Murphy Slough, and passing the community of Laton to the west. The Hanford West Bypass 1 Alternative would return to grade just north of Dover Avenue. The alignment would continue at-grade and would travel between the community of Armona to the west and the city of Hanford to the east on a southeasterly route toward the BNSF Railway corridor. In order to avoid a large dairy located at the intersection of Kent and 11th avenues, the Hanford West Bypass 1 Alternative must travel to its west and deviate from the BNSF Railway corridor in the area of Kansas Avenue. The alignment would pass to the west of a large complex of BNSF Railway serviced grain silos and loading bays before it rejoins the BNSF Railway corridor adjacent to its western side at about Lansing Avenue. The alignment would continue on the western side of the BNSF Railway corridor and ascend onto another elevated structure, traveling over Cross Creek and special aquatic features that exist north of Corcoran. This alignment would return to grade just north of Nevada Avenue and would connect to the BNSF Alternative traveling through Corcoran at-grade, maintaining an alignment on the western side of the BNSF Railway corridor. The total length of the Hanford West Bypass 1 Alternative would be approximately 28 miles.

The Hanford West Bypass 1 Alternative includes a design option where the alignment would be below-grade between Grangeville Boulevard and Houston Avenue. The alignment would travel below-grade in an open cut with side slopes as it transitions to a retained-cut profile. As the alignment transitions back to grade just north of Houston Avenue, the open-cut profile would be used once more. The alignment would cross SR 198 and several local roads. South Peach Avenue, East Clarkson Avenue, East Barrett Avenue, Elder Avenue, and South Tenth Avenue would be closed at the HST right-of-way, while the other roads would be realigned and/or grade-separated from the HST with overcrossings/undercrossings. Grade separations at Grangeville Boulevard, Thirteenth Avenue, and West Lacey Boulevard would be determined based on the alignment design option selected (at-grade or below-grade).

The potential Kings/Tulare Regional Station–West Alternative would be located along this alignment, east of Thirteenth Avenue between Lacey Boulevard and the SJVR railroad spur. This potential station includes an at-grade and below-grade design option as well.

2.2.1.4 Hanford West Bypass 2 Alternative

The Hanford West Bypass 2 Alternative would be the same as the Hanford West Bypass 1 Alternative from East Kamm Avenue to just north of Jackson Avenue. The Hanford West Bypass 2 Alternative would then curve away from the Hanford West Bypass 1 Alternative to travel to the east of the dairy located at the intersection of Kent and 11th avenues toward the BNSF Railway corridor, approximately 0.3 mile east of the Hanford West Bypass 1 route. The Hanford West Bypass 2 Alternative would ascend over Kent Avenue and then cross over the BNSF Railway right-of-way to the northeast of the large complex of grain silos and loading bays located north of Kansas Avenue. The alignment would remain elevated for approximately 1.5 miles and parallel the BNSF Railway to the east, then cross over Kansas Avenue. The alignment would return to grade north of Lansing Avenue and continue along the BNSF Railway corridor on its eastern side. Similar to the Hanford West Bypass 1 Alternative, the Hanford West Bypass 2 Alternative would travel over Cross Creek and the special aquatic features located north of Corcoran and return to grade north of Nevada Avenue; however, the Hanford West Bypass 2 would be located on the eastern side of the BNSF Railway tracks in order to connect to either of the two Corcoran alternatives that would travel on the eastern side of the BNSF Railway corridor, the Corcoran Elevated Alternative or the Corcoran Bypass Alternative, described below. Like the Hanford West Bypass 1 Alternative, the total length of the Hanford West Bypass 2 Alternative would be approximately 28 miles.

The Hanford West Bypass 2 Alternative includes the same below-grade design option between Grangeville Boulevard and Houston Avenue as the Hanford West Bypass 1 Alternative, as well as either the at-grade or below-grade potential Kings/Tulare Regional Station–West Alternative. Similar to the Hanford West Bypass 1 Alternative, Hanford West Bypass 2 would cross SR 198 and several local roads. Road closures would be the same as those for the Hanford West Bypass 1, and roadway modifications at Grangeville Boulevard, Thirteenth Avenue, and West Lacey Boulevard would depend on the alignment design option selected.

2.2.1.5 Corcoran Elevated Alternative

The Corcoran Elevated Alternative would be the same as the corresponding section of the BNSF Alternative from approximately Nevada Avenue to Avenue 136, except that it would pass through the city of Corcoran on the eastern side of the BNSF Railway right-of-way on an aerial structure. The aerial structure would begin at Niles Avenue and return to grade south of Fourth Avenue. The total length of the Corcoran Elevated Alternative would be approximately 10 miles. Dedicated wildlife crossing structures would be provided from approximately Cross Creek south to Avenue 136 in at-grade portions of the railroad embankment at intervals of approximately 0.3 mile. Dedicated wildlife crossing structures would also be placed between 100 and 500 feet to the north and south of both the Cross Creek and Tule River crossings.

This alternative alignment would pass over several local roads on an aerial structure. Santa Fe Avenue and Avenue 136 would be closed at the HST right-of-way.

2.2.1.6 Corcoran Bypass Alternative

The Corcoran Bypass Alternative would diverge from the BNSF Alternative at Nevada Avenue and swing east of Corcoran, rejoining the BNSF Railway route at Avenue 136. The total length of the Corcoran Bypass would be approximately 10 miles. Similar to the corresponding section of the BNSF Alternative, most of the Corcoran Bypass Alternative would be at-grade. However, one elevated structure would carry the HST over SR 43, the BNSF Railway, and the Tule River.

Dedicated wildlife crossing structures would be provided from approximately Cross Creek south to Avenue 136 in at-grade portions of the railroad embankment at intervals of approximately 0.3 mile. Dedicated wildlife crossing structures would also be placed between 100 and 500 feet to the north and south of each of the Cross Creek and Tule River crossings.

This alternative alignment would cross SR 43, Whitley Avenue/SR 137, and several local roads. SR 43, Waukena Avenue, and Whitley Avenue would be grade-separated from the HST with an overcrossing/undercrossing; other roads would be closed at the HST right-of-way.

2.2.1.7 Allensworth Bypass Alternative

The Allensworth Bypass Alternative would pass west of the BNSF Alternative, avoiding Allensworth Ecological Reserve and the Allensworth State Historic Park. This alignment was refined over the course of environmental studies to reduce impacts to wetlands and orchards. The total length of the Allensworth Bypass Alternative would be approximately 21 miles, beginning at Avenue 84 and rejoining the BNSF Alternative at Elmo Highway. The Allensworth Bypass Alternative would be constructed on an elevated structure only where the alignment crosses Deer Creek and the Stoil railroad spur. The majority of the alignment would pass through Tulare County at-grade. Dedicated wildlife crossing structures would be provided from approximately Avenue 84 to Poso Creek at intervals of approximately 0.3 mile. Dedicated wildlife crossing structures would also be placed between 100 and 500 feet to the north and south of both the Deer Creek and Poso Creek crossings.

The Allensworth Bypass would cross several roads including County Road J22, Avenue 24, Garces Highway, Woollomes Avenue, Magnolia Avenue, Pond Road, and Elmo Highway. Avenue 24, Woollomes Avenue, and Elmo Highway would be closed at the HST right-of-way, while the other roads would be realigned and/or grade-separated from the HST with overcrossings.

2.2.1.8 Wasco-Shafter Bypass Alternative

The Wasco-Shafter Bypass Alternative would diverge from the BNSF Alternative between Taussig Avenue and Zachary Avenue, crossing over to the eastern side of the BNSF Railway tracks and bypassing Wasco and Shafter to the east. The Wasco-Shafter Bypass Alternative would be at-grade except where it travels over 7th Standard Road and the BNSF Railway to rejoin the BNSF Alternative. The total length of the Wasco-Shafter Bypass Alternative would be approximately 21 miles.

The Wasco-Shafter Bypass was refined to avoid the Occidental Petroleum tank farm as well as a historic property potentially eligible for listing on the National Register of Historic Places. The Wasco-Shafter Bypass would cross SR 43, SR 46, East Lerdo Highway, and several local roads. Roads, including SR 46, Kimberlina Road, Shafter Avenue, Beech Avenue, Cherry Avenue, and Kratzmeyer Road, would be grade-separated from the HST with overcrossings/undercrossings; other roads would be closed at the HST right-of-way.

2.2.1.9 Bakersfield South Alternative

From the Rosedale Highway (SR 58) in Bakersfield, the Bakersfield South Alternative would parallel the BNSF Alternative at varying distances to the north. At Chester Avenue, the Bakersfield South Alternative would curve south and run parallel to California Avenue. As with the BNSF Alternative, the Bakersfield South Alternative would begin at-grade and become elevated starting at Country Breeze Place through Bakersfield to its terminus at Oswell Street. Dedicated wildlife crossing structures would not be required because this alternative would be elevated to the north and south of the Kern River.

The Bakersfield South Alternative would be approximately 12 miles long and would cross many of the same roads as the BNSF Alternative. This alternative includes the Bakersfield Station–South Alternative.

2.2.1.10 Bakersfield Hybrid Alternative

From Rosedale Highway (SR 58) in Bakersfield, the Bakersfield Hybrid Alternative would follow the Bakersfield South Alternative and parallel the BNSF Alternative at varying distances to the north. At approximately A Street, the Bakersfield Hybrid Alternative would diverge from the Bakersfield South Alternative, cross over Chester Avenue and the BNSF right-of-way in a southeasterly direction, then curve back to the northeast to parallel the BNSF Railway tracks towards Kern Junction. After crossing Truxtun Avenue, the alignment would curve to the southeast to parallel the UPRR tracks to its terminus at Oswell Street. As with the BNSF and Bakersfield South alternatives, the Bakersfield Hybrid Alternative would begin at-grade and become elevated starting at Country Breeze Place through Bakersfield to Oswell Street. Dedicated wildlife crossing structures would not be required because this alternative would be elevated to the north and south of the Kern River.

The Bakersfield Hybrid Alternative would be approximately 12 miles long and would cross many of the same roads as the BNSF and Bakersfield South alternatives. This alternative includes the Bakersfield Station–Hybrid Alternative.

2.2.2 Station Alternatives

The Fresno to Bakersfield HST Section would include a new station in Fresno and a new station in Bakersfield. A potential third station, the Kings/Tulare Regional Station, is under consideration.

Stations would be designed to address the purpose of the HST, particularly to allow for intercity travel and connection to local transit, airports, and highways. Stations would include the station platforms, a station building, and associated access structure, as well as lengths of bypass tracks to accommodate local and express service at the stations. All stations would contain the following elements:

- Passenger boarding and alighting platforms.
- Station head house with ticketing, waiting areas, passenger amenities, vertical circulation, administration and employee areas, and baggage and freight-handling service.
- Vehicle parking (short-term and long-term) and “kiss-and-ride.”[1]
- Motorcycle/scooter parking.
- Bicycle parking.
- Waiting areas and queuing space for taxis and shuttle buses.
- Pedestrian walkway connections.

[1] “Kiss-and-ride” refers to the station area where riders may be dropped off or picked up before or after riding the HST.

2.2.2.1 Fresno Station Alternatives

Two alternative sites are under consideration for the Fresno Station.

Fresno Station–Mariposa Alternative

The Fresno Station–Mariposa Alternative would be located in Downtown Fresno, less than 0.5 mile east of SR 99 on the BNSF Alternative. The station would be centered on Mariposa Street and bordered by Fresno Street on the north, Tulare Street on the south, H Street on the east, and G Street on the west. The station building would be approximately 75,000 square feet, with a maximum height of approximately 64 feet.

The two-level station would be at-grade; with passenger access provided both east and west of the HST guideway and the UPRR tracks, which would run parallel to one another next to the station. The first level would contain the public concourse, passenger service areas, and station and operation offices. The second level would include a mezzanine, a pedestrian overcrossing above the HST guideway and the UPRR tracks, and an additional public concourse area. Entrances would be located at both G and H streets. A conceptual site plan of the Fresno Station–Mariposa Alternative is provided in Figure 2-2.

The majority of station facilities would be east of the UPRR tracks. The station and associated facilities would occupy approximately 20.5 acres, including 13 acres dedicated to the station, short-term parking, and kiss-and-ride accommodations. A new intermodal facility, not a part of this proposed undertaking, would be located on the parcel bordered by Fresno Street to the north, Mariposa Street to the south, Broadway Street to the east, and H Street to the west (designated “Intermodal Transit Center” in Figure 2-2). Among other uses, the intermodal facility would accommodate the Greyhound facilities and services that would be relocated from the northwestern corner of Tulare and H streets.

The site proposal includes the potential for up to three parking structures that would occupy a total of approximately 5.5 acres. Two of the three potential parking structures would each sit on 2 acres, and each would have a capacity of approximately 1,500 cars. The third parking structure would be slightly smaller in footprint (1.5 acres), with five levels and a capacity of approximately 1,100 cars. An additional 2-acre surface parking lot would provide approximately 300 parking spaces.

Under this alternative, the historic Southern Pacific Railroad depot and associated Pullman Sheds would remain intact. While these structures could be used for station-related purposes, they are assumed not to be functionally required for the HST project, and are therefore not proposed to be physically altered as part of the project. The Mariposa station building footprint has been configured to preserve views of the historic railroad depot and associated sheds.

Fresno Station–Kern Alternative

The Fresno Station–Kern Alternative would be similarly situated in Downtown Fresno and would be located on the BNSF Alternative, centered on Kern Street between Tulare Street and Inyo Street (Figure 2-3). This station would include the same components as the Fresno Station–Mariposa Alternative, but under this alternative, no station facilities would be located adjacent to the historic Southern Pacific Railroad depot and relocation of existing Greyhound facilities would not be required.

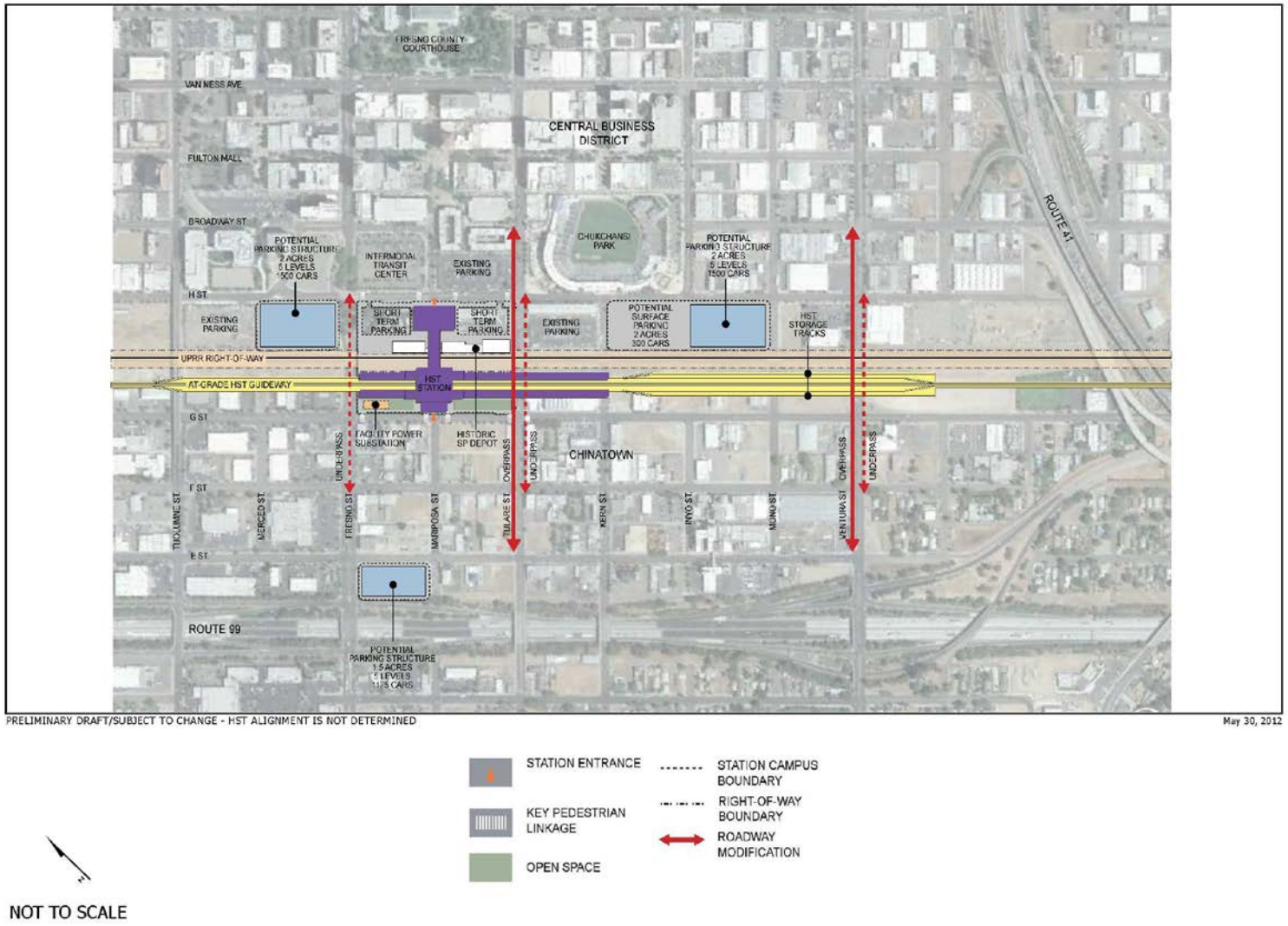

Figure 2-2
Fresno Station–Mariposa Alternative

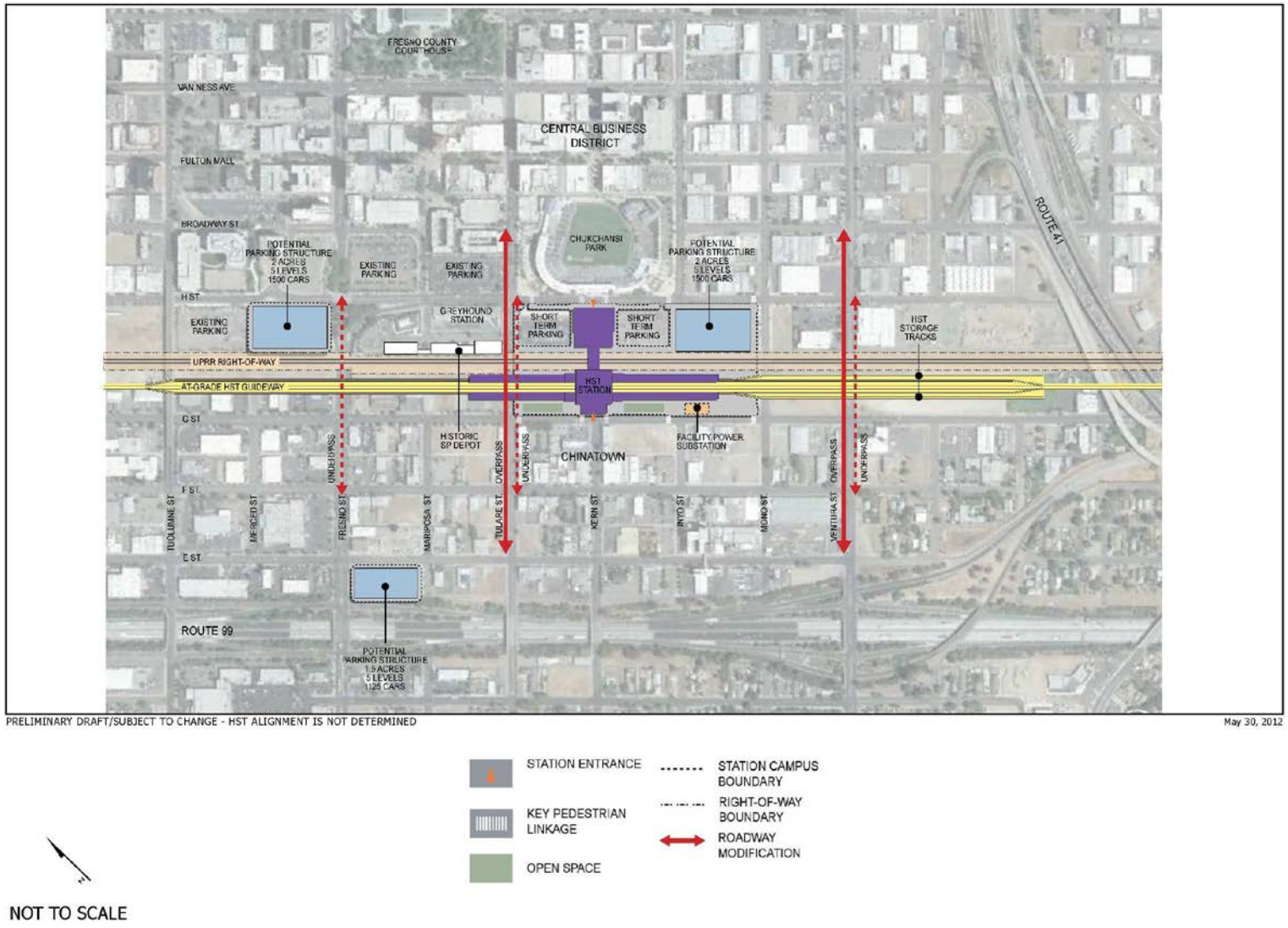

Figure 2-3
Fresno Station–Kern Alternative

The station building would be approximately 75,000 square feet, with a maximum height of approximately 64 feet. The station building would have two levels and house the same facilities as the Fresno Station–Mariposa Alternative (UPRR tracks, HST tracks, mezzanine, and station office). The approximately 18.5-acre site would include 13 acres dedicated to the station, bus transit center, short-term parking, and kiss-and-ride accommodations.

Two of the three potential parking structures would each sit on 2 acres, and each would have a capacity of approximately 1,500 cars. The third structure would be slightly smaller in footprint (1.5 acres) and have a capacity of approximately 1,100 cars. Surface parking lots would provide approximately 600 additional parking spaces. Like the Fresno Station–Mariposa Alternative, the majority of station facilities under the Kern Alternative would be sited east of the HST tracks.

2.2.2.2 Kings/Tulare Regional Station

Two alternative sites are under consideration for the potential Kings/Tulare Regional Station.

Kings/Tulare Regional Station–East Alternative

The potential Kings/Tulare Regional Station would be located east of SR 43 (Avenue 8) and north of the SJVR on the BNSF Alternative (Figure 2-4). The station building would be approximately 40,000 square feet with a maximum height of approximately 75 feet. The entire site would be approximately 25 acres, including 8 acres designated for the station, bus transit center, short-term parking, and kiss-and-ride. An additional approximately 17.25 acres would support a surface parking lot with approximately 2,280 spaces.

Kings/Tulare Regional Station–West Alternative

The potential Kings/Tulare Regional Station–West Alternative would be located east of Thirteenth Avenue and north of the SJVR on the Hanford West Bypass 1 and 2 alternatives. The station would be located either at-grade or below-grade depending on which Hanford West Bypass alignment design option is chosen.

The at-grade Kings/Tulare Regional Station–West Alternative would include a station building of approximately 100,000 square feet with a maximum height of approximately 36 feet. The entire site would be approximately 48 acres, including 6 acres designated for the station, bus bays, short-term parking, and kiss-and-ride areas. Approximately 5 acres would support a surface parking lot with approximately 700 spaces. An additional 3.5 acres would support two parking structures with a combined parking capacity of 2,100 spaces (Figure 2-5).

The below-grade Kings/Tulare Regional Station–West Alternative would include a station building of approximately the same size and height. The below-grade station site would include the same components as the at-grade station option on the same number of acres; however, the station platform would be located below-grade instead of at ground level. Approximately 4 acres would support a surface parking lot with approximately 600 spaces and an additional 4 acres would support two parking structures with a combined parking capacity of 2,200 spaces (Figure 2-6).

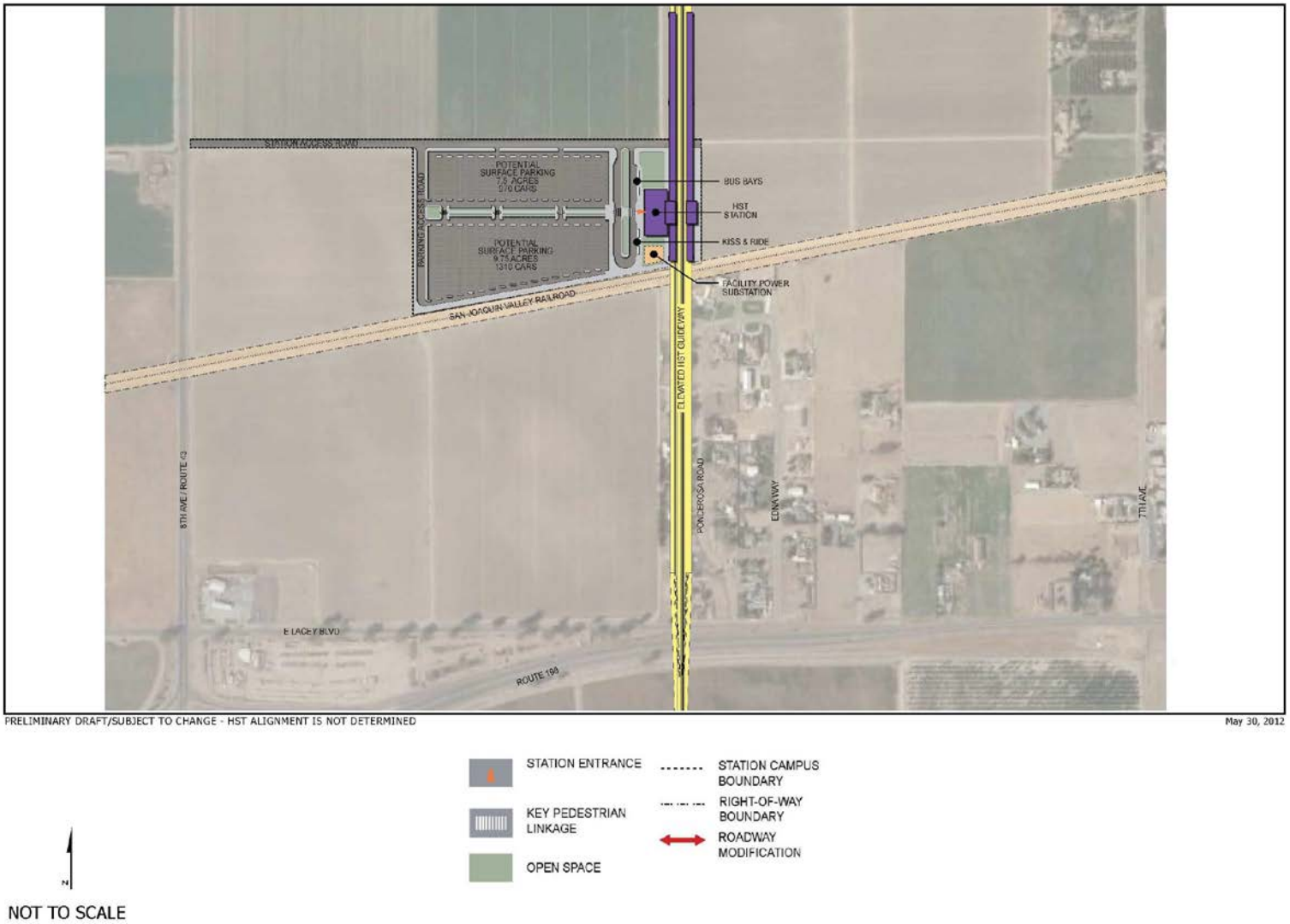

Figure 2-4
Kings/Tulare Regional Station–East Alternative

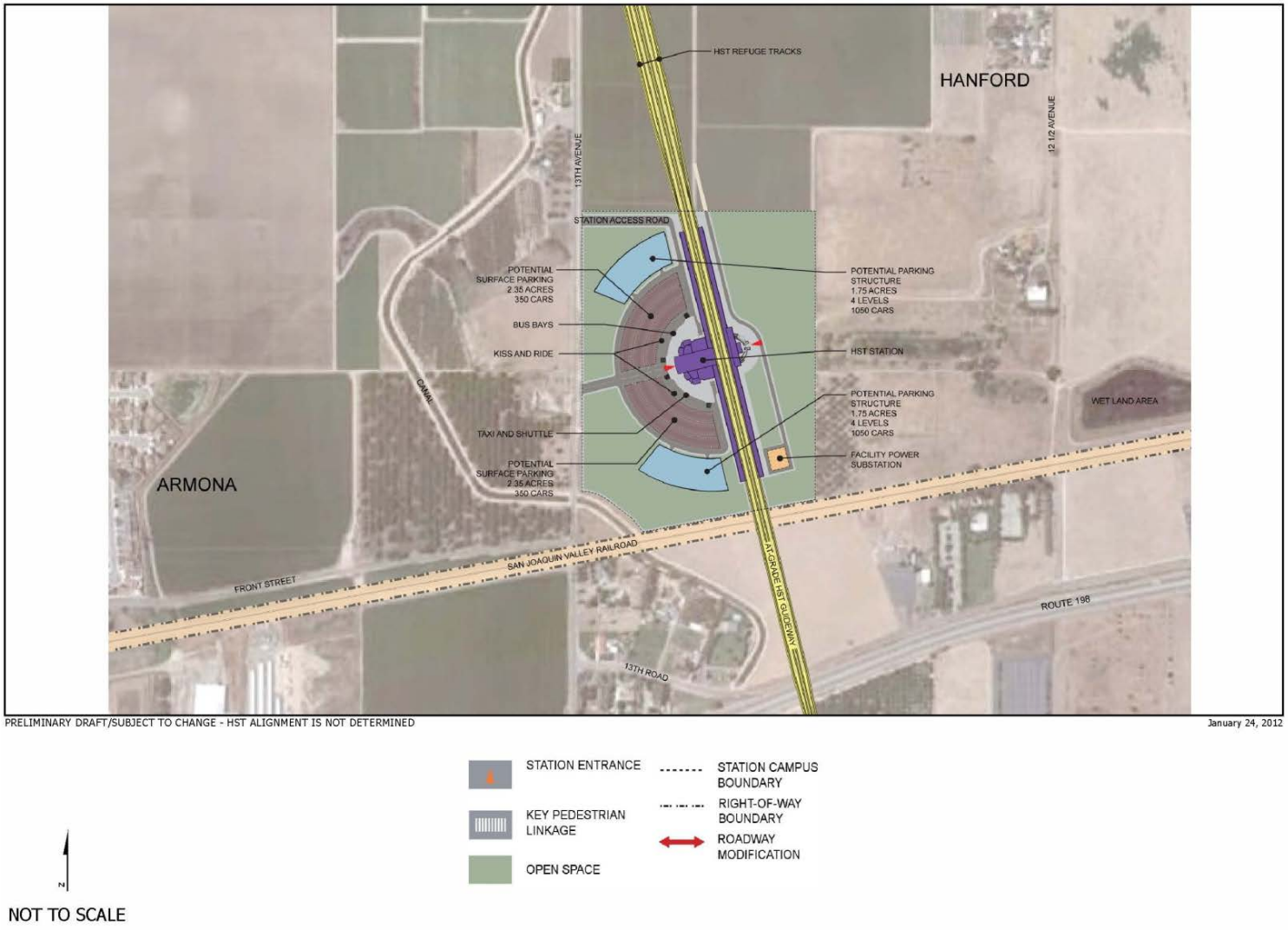

Figure 2-5
Kings/Tulare Regional Station–West Alternative (at-grade option)

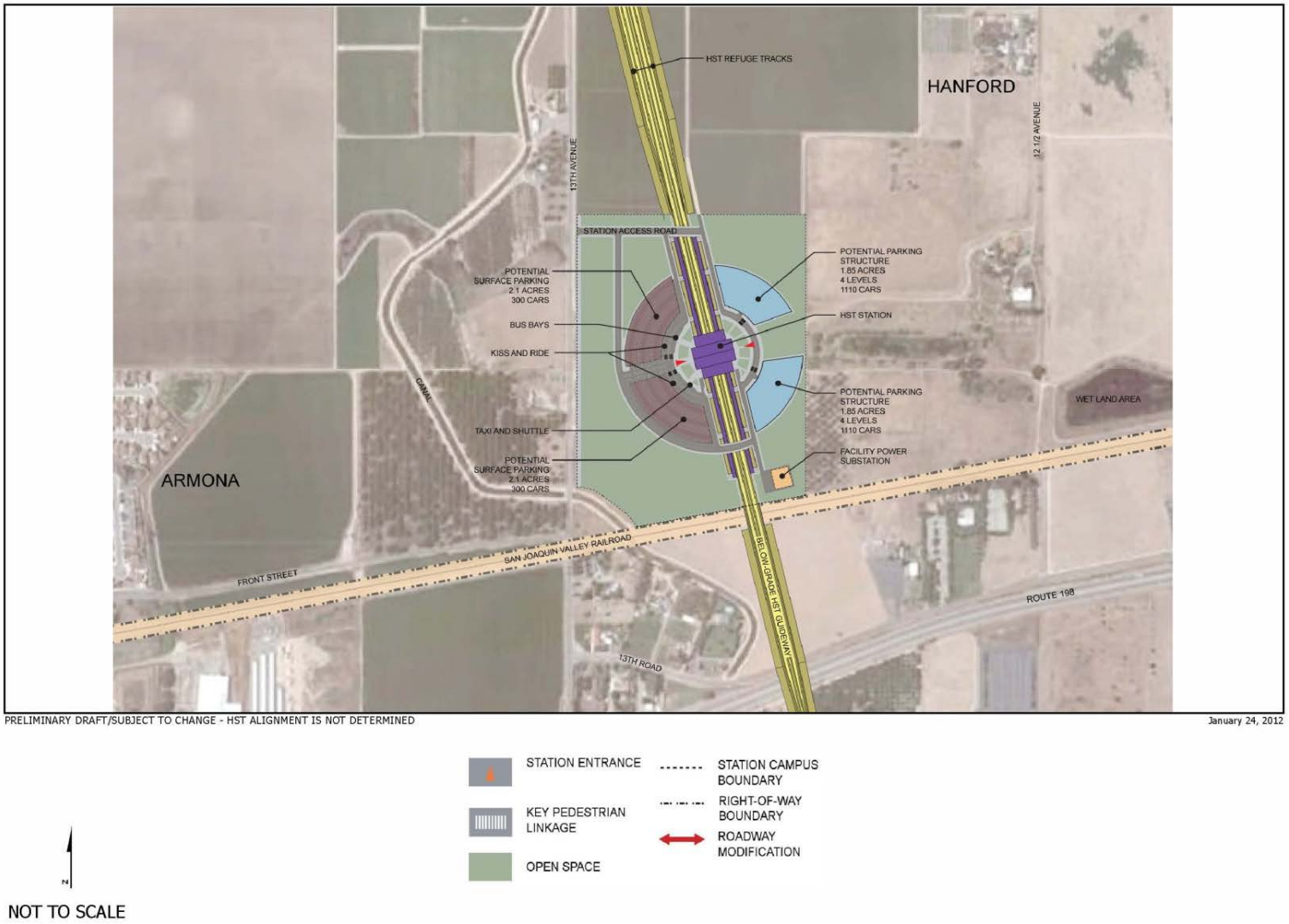

Figure 2-6
Kings/Tulare Regional Station–West Alternative (below-grade option)

2.2.2.3 Bakersfield Station Alternatives

Three options are under consideration for the Bakersfield Station.

Bakersfield Station–North Alternative

The Bakersfield Station–North Alternative would be located at the corner of Truxtun and Union Avenue/SR 204 along the BNSF Alternative (Figure 2-7). The three-level station building would be 52,000 square feet, with a maximum height of approximately 95 feet. The first level would house station operation offices and would also accommodate trains running along the BNSF Railway line. The second level would include the mezzanine; the HST platforms and guideway would pass through the third level. Under this alternative, the station building would be located at the western end of the parcel footprint. Two new boulevards would be constructed to access the station and the supporting facilities.

The 19-acre site would designate 11.5 acres for the station, bus transit center, short-term parking, and kiss-and-ride. An additional 7.5 acres would house two parking structures that together would accommodate approximately 4,500 cars. The bus transit center and the smaller of the two parking structures (2.5 acres) would be located north of the HST tracks. The BNSF Railway line would run through the station at-grade, with the HST alignment running on an elevated guideway.

Bakersfield Station–South Alternative

The Bakersfield Station–South Alternative would be would be similarly located in downtown Bakersfield, but situated on the Bakersfield South Alternative along Union and California avenues, just south of the BNSF Railway right-of-way (Figure 2-8). The two-level station building would be 51,000 square feet, with a maximum height of approximately 95 feet. The first floor would house the concourse, and the platforms and the guideway would be on the second floor. Access to the site would be from two new boulevards, one branching off from California Avenue and the other from Union Avenue.

The entire site would be 20 acres, with 15 acres designated for the station, bus transit center, short-term parking, and kiss-and-ride. An additional 5 acres would support one six-level parking structure with a capacity of approximately 4,500 cars. Unlike the Bakersfield Station–North Alternative, this station site would be located entirely south of the BNSF Railway right-of-way.

Bakersfield Station–Hybrid Alternative

The Bakersfield Station–Hybrid Alternative would be in the same area as the North and South Station alternatives, and located at the corner of Truxtun and Union Avenue/SR 204 on the Bakersfield Hybrid Alternative (Figure 2-9). The station design includes an approximately 57,000 square-foot main station building and an approximately 5,500 square-foot entry concourse located north of the BNSF Railway right-of-way. The station building would have two levels with a maximum height of approximately 95 feet. The first floor would house the concourse, and the platforms and guideway would be on the second floor. Additionally, a pedestrian overcrossing would connect the main station building to the north entry concourse across the BNSF right-of-way.

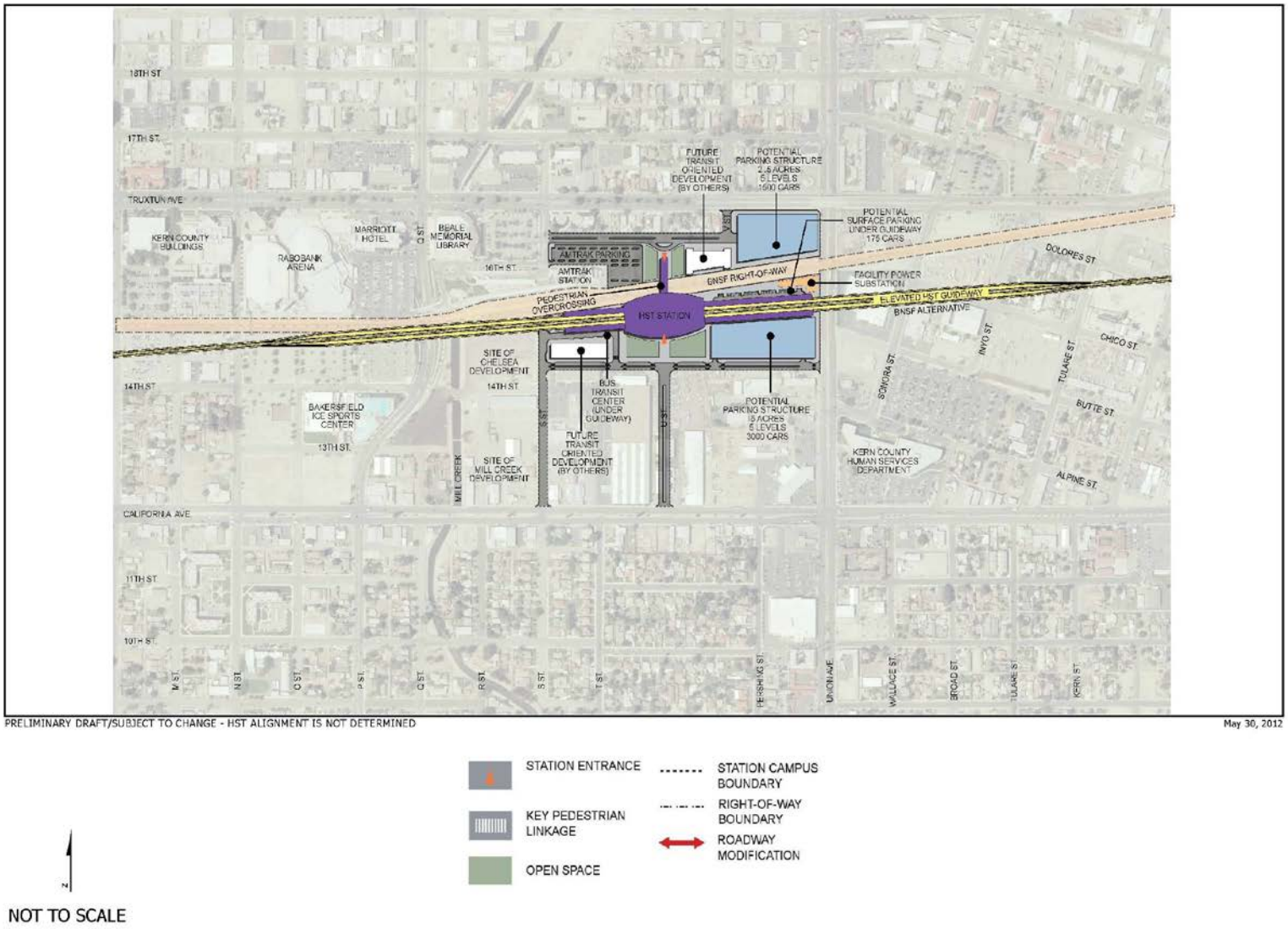

Figure 2-7
Bakersfield Station–North Alternative

Figure 2-8
Bakersfield Station–South Alternative

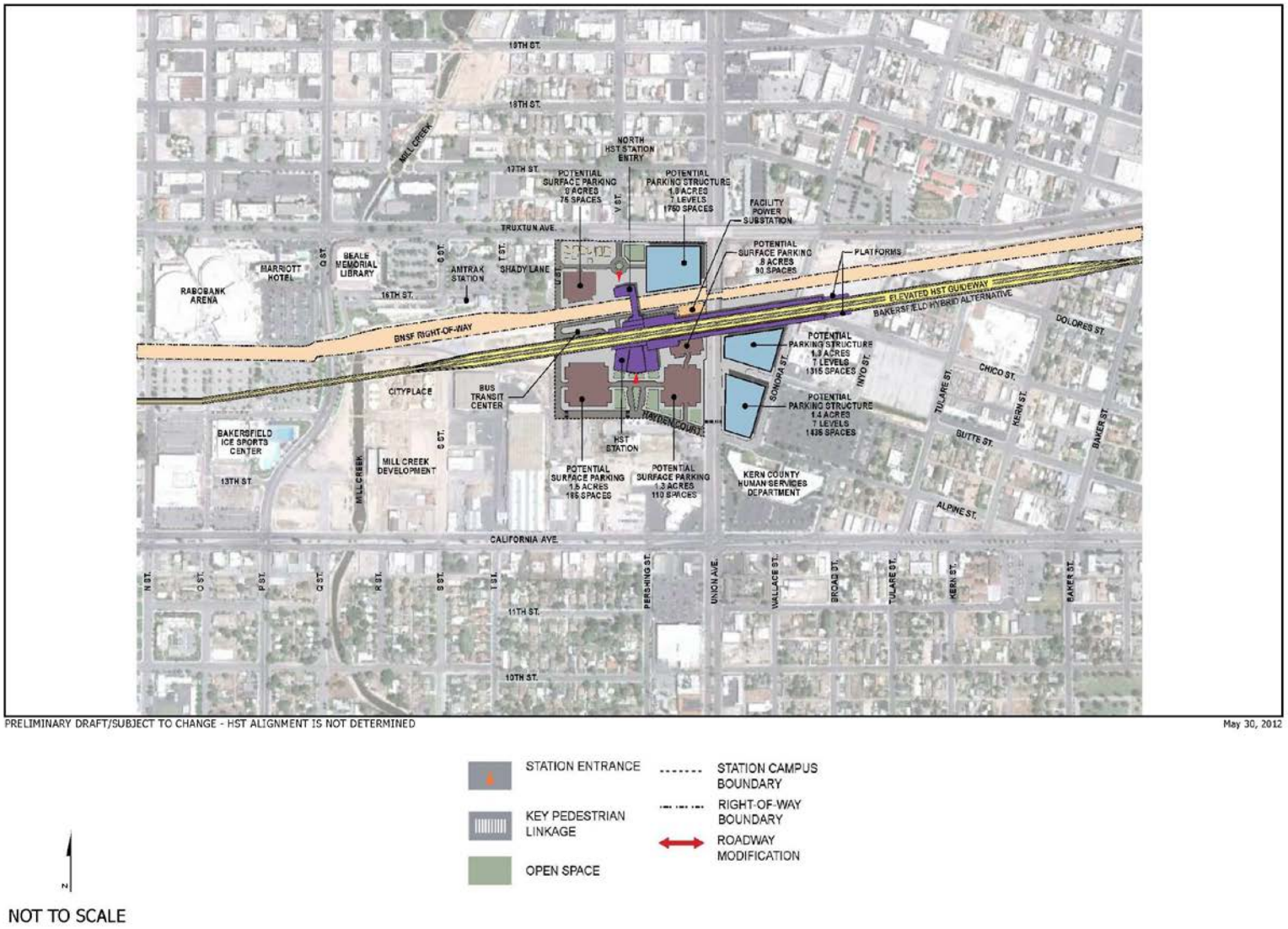

Figure 2-9
Bakersfield Station–Hybrid Alternative

The entire site would be approximately 24 acres, with 15 acres designated for the station, bus transit center, short-term parking, and kiss-and-ride areas. Approximately 4.5 of the 24 acres would support three parking structures with a total capacity of approximately 4,500 cars. Each parking structure would be seven levels; one with a planned capacity of 1,750 cars, another with a capacity of 1,315 cars, and the third with a planned capacity of 1,435 cars. An additional 460 parking spaces would be provided in surface lots covering a total of approximately 4.5 acres of the station site. Access to the station site would be from Truxtun and Union avenues, as well as from Hayden Court. Under this alternative, the BNSF Railway track runs through the station site, and the main station building and majority of station facilities would be sited south of the BNSF Railway right-of-way.

2.2.3 Heavy Maintenance Facility

One HST heavy vehicle maintenance and layover facility would be sited along either the Merced to Fresno or Fresno to Bakersfield HST section. Before the start-up of initial operations, the HMF would support the assembly, testing, commissioning, and acceptance of high-speed rolling stock. During regular operations, the HMF would provide maintenance and repair functions, activation of new rolling stock, and train storage. The HMF concept plan indicates that the site would encompass approximately 154 acres to accommodate shops, tracks, parking, administration, roadways, power substation, and storage areas. The HMF would include tracks that allow trains to enter and leave under their own electric power or under tow. The HMF would also have management, administrative, and employee support facilities. Up to 1,500 employees could work at the HMF during any 24-hour period.

The Authority has determined that one HMF would be located between Merced and Bakersfield; however, the specific location has not yet been finalized. The property boundaries for each HMF site would be larger than the acreage needed for the actual facility because of the unique site characteristics and constraints of each location. Five HMF sites are under consideration in the Fresno to Bakersfield Section (Figure 2-1):

- The Fresno Works–Fresno HMF site lies within the southern limits of the city of Fresno and county of Fresno next to the BNSF Railway right-of-way between SR 99 and Adams Avenue. Up to 590 acres are available for the facility at this site.
- The Kings County–Hanford HMF site lies southeast of the city of Hanford, adjacent to and east of SR 43, between Houston and Idaho avenues. Up to 510 acres are available at the site.
- The Kern Council of Governments–Wasco HMF site lies directly east of Wasco between SR 46 and Filburn Street. Up to 420 acres are available for the facility at this site.
- The Kern Council of Governments–Shafter East HMF site lies in the city of Shafter between Burbank Street and 7th Standard Road to the east of the BNSF Railway right-of-way. This site has up to 490 acres available for the facility.
- The Kern Council of Governments–Shafter West HMF site lies in the city of Shafter between Burbank Street and 7th Standard Road to the west of the BNSF Railway right-of-way. This site has up to 480 acres available for the facility.

2.3 Power

Power for the HST System would be drawn from California's electricity grid and distributed to the trains via an overhead contact system. The project would not include the construction of a separate power source, although it would include the extension of power lines to a series of

power substations positioned along the HST corridor. The transformation and distribution of electricity would occur in three types of stations:

- Traction power substations (TPSSs) transform high-voltage electricity supplied by public utilities to the train operating voltage. TPSSs would be sited adjacent to existing utility transmission lines and the HST right-of-way, and would be located approximately every 30 miles along the route. Each TPSS would be 200 feet by 160 feet.
- Switching stations connect and balance the electrical load between tracks, and switch power on or off to tracks in the event of a power outage or emergency. Switching stations would be located midway between, and approximately 15 miles from, the nearest TPSS. Each switching station would be 120 feet by 80 feet and be located adjacent to the HST right-of-way.
- Paralleling stations, or autotransformer stations, provide voltage stabilization and equalize current flow. Paralleling stations would be located every 5 miles between the TPSSs and the switching stations. Each paralleling station would be 100 feet by 80 feet and located adjacent to the HST right-of-way.

2.4 Project Construction

The construction plan developed by the Authority and described below would maintain eligibility for eligibility for federal American Recovery and Reinvestment Act (ARRA) funding. For the Fresno to Bakersfield Section, specific construction elements would include at-grade, below-grade, and elevated track, track work, grade crossings, and installation of a positive train control system. At-grade track sections would be built using conventional railroad construction techniques. A typical sequence includes clearing, grubbing, grading, and compacting the rail bed; applying crushed rock ballast; laying track; and installing electrical and communications systems.

The precast segmental construction method is proposed for elevated track sections. In this construction method, large concrete bridge segments would be mass-produced at an onsite temporary casting yard. Precast segments would then be transported atop the already completed portions of the elevated track and installed using a special gantry crane positioned on the aerial structure. Although the precast segmental method is the favored technique for aerial structure construction, other methods may be used, including cast-in-place, box girder, or precast span-by-span techniques.

Preconstruction activities would be conducted during final design and include geotechnical investigations, identification of staging areas, initiation of site preparation and demolition, relocation of utilities, and implementation of temporary, long-term, and permanent road closures. Additional studies and investigations to develop construction requirements and worksite traffic control plans would be conducted as needed.

Major construction activities for the Fresno to Bakersfield Section would include earthwork and excavation support systems construction, bridge and aerial structure construction, railroad systems construction (including trackwork, traction electrification, signaling, and communications), and station construction. During peak construction periods, work is envisioned to be underway at several locations along the route, with overlapping construction of various project elements. Working hours and workers present at any time will vary depending on the activities being performed.

The Authority intends to build the project using sustainable methods that:

- Minimize the use of nonrenewable resources.
- Minimize the impacts on the natural environment.
- Protect environmental diversity.
- Emphasize the use of renewable resources in a sustainable manner.

The approximate schedule for construction is provided in Table 2-1.

Table 2-1
Approximate Construction Schedule[a]

Activity	Tasks	Duration
Right-of-way Acquisition	Proceed with right-of-way acquisitions once State Legislature appropriates funds in annual budget	March 2013–March 2015
Survey and Preconstruction	Locate utilities, establish right-of-way and project control points and centerlines, establish or relocate survey monuments	March 2013–October 2013
Mobilization	Safety devices and special construction equipment mobilization	June 2013–July 2014
Site Preparation	Utilities relocation; clearing/grubbing right-of-way; establishment of detours and haul routes; preparation of construction equipment yards, stockpile materials, and precast concrete segment casting yard	July 2013–July 2017 (two site preparation periods)
Earth Moving	Excavation and earth support structures	December 2013–August 2015
Construction of Road Crossings	Surface street modifications, grade separations	December 2013–August 2015
Construction of Aerial Structures	Aerial structure and bridge foundations, substructure, and superstructure	December 2013–December 2017
Track Laying	Includes backfilling operations and drainage facilities	May 2016–December 2017
Systems	Train control systems, overhead contact system, communication system, signaling equipment	March 2018–January 2021
Demobilization	Includes site cleanup	August 2017–June 2022 (two demobilization periods)
HMF Phase 1[b]	Test Track Assembly and Storage	April 2017–November 2017
HMF Phase 2[b]	Test Track Light Maintenance Facility	April 2017–December 2018
Maintenance-of-Way Facility	Potentially collocated with HMF[a]	April 2017–December 2018
HMF Phase 3[b]	Heavy Maintenance Facility	January 2018–July 2019
HST Stations	Demolition, site preparation, foundations, structural frame, electrical and mechanical systems, finishes	Fresno: May 2019–May 2022 Kings/Tulare Regional: TBD[c] Bakersfield: May 2019–May 2022

Notes:

[a] Based on a two-phase implementation of the project: first construction will meet the ARRA funding deadline and be completed in 2017; the remainder of the Initial Operating Segment will be completed by 2022 per the Business Plan and based on anticipated funding flow.
[b] HMF would be sited in either the Merced to Fresno or Fresno to Bakersfield Section.
[c] Right-of-way would be acquired for the Kings/Tulare Regional Station; however, the station itself would not be part of initial construction.

Acronym:

TBD = to be determined

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Chapter 3
Regulatory Setting

3.0 Regulatory Setting

The regulations for hazardous wastes and materials that are most relevant to the proposed project are summarized in this section. Citations on other pertinent federal, state, or local regulations occur throughout the document text and are referenced in Chapter 7.

3.1 Federal

3.1.1 National Environmental Policy Act (42 U.S.C. Section 4321 et seq.)

NEPA requires consideration of potential environmental effects, including potential hazardous material and waste effects, in the evaluation of any proposed federal agency action. NEPA also obligates federal agencies to consider the environmental consequences and costs of their projects and programs as part of the planning process. General NEPA procedures are set forth in the Council on Environmental Quality regulations at 23 Code of Federal Regulations (CFR) Part 771.

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

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

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

The Comprehensive Environmental Response, Compensation and Liability Act provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. This act established the National Priorities List of contaminated sites and the “Superfund” cleanup program.

3.1.4 Clean Water Act - National Pollutant Discharge Elimination System (Section 402[p])

The Clean Water Act (CWA) regulates effluent discharges into the waters of the United States and addresses requirements for addressing spills of pollutants, including hazardous materials, to surface waters and groundwater.

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

The Safe Drinking Water Act regulates discharges of pollutants to underground aquifers.

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

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

3.1.7 Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. Section 136 and 40 CFR Parts 152 to 171)

The Insecticide, Fungicide, and Rodenticide Act regulates the manufacturing, distribution, sale, and use of pesticides.

3.1.8 Hazardous Materials Transportation Act (49 U.S.C. Sections 1801–1819 and 49 CFR Parts 101, 106, 107, and 171–180)

The Hazardous Materials Transportation Act regulates the transport of hazardous materials by motor vehicles, marine vessels, and aircraft.

3.1.9 Emergency Planning and Community Right to Know Act (40 CFR Parts 350–372)

The Emergency Planning and Community Right to Know Act regulates facilities that use hazardous materials in quantities that require reporting to emergency response officials.

3.1.10 Federal Compliance with Pollution Control (Executive Order 12088)

This executive order requires federal agencies to take necessary actions to prevent, control, and abate environmental pollution from federal facilities and activities under control by federal agencies.

3.2 State

3.2.1 California Environmental Quality Act (Section 21000 et seq.) and CEQA Guidelines (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.

3.2.2 California Code of Regulations, Title 14, Section 1724.3, Well Safety Devices for Critical Wells

Governs safety devices required on “critical wells” located within 100 feet of an operating railway.

3.2.3 California Code of Regulations, Title 27, Division 2, Chapter 3, Subchapter 4, Gas Monitoring and Control at Active and Closed Disposal Sites

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

3.2.4 California Code of Regulations, Title 27, Division 2, Chapter 3, Subchapter 5, Closure and Post Closure Maintenance of Landfills

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

3.2.5 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.

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

The Porter-Cologne Act regulates water quality through the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs). This regulation includes oversight of water monitoring and contamination cleanup and abatement.

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

Sometimes called the “Business Plan Act,” the Hazardous Materials Release Response Plans and Inventory law requires facilities using hazardous materials to prepare Hazardous Materials Business Plans.

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

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

3.2.9 Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

The California Safe Drinking Water and Toxic Enforcement Act is similar to the CWA and the Safe Drinking Water Act on the federal level in regulating the discharge of contaminants to groundwater.

3.2.10 California Government Code Section 65962.5

California Government Code Section 65962.5 requires the Department of Toxic Substances Control to compile and maintain lists of potentially contaminated sites throughout California (includes the Cortese Hazardous Waste and Substances Sites Database list).

3.3 Regional

This section addresses county and local hazardous waste regulations. It includes a summary of the local systems that have been set up in response to federal and state laws. In most cases county and municipal jurisdictions overlap.

California Health and Safety Code Section 25503(c) mandates the establishment of an "area plan" for each county. The standards for area plans are codified in 19 California Code of Regulations (CCR) Sections 2720–2728.

3.3.1 Fresno County Certified Unified Program Agency

For Fresno County, the Certified Unified Program Agency (CUPA) is the Department of Public Health, Division of Environmental Health (County of Fresno 2009a). The County's Office of Emergency Services (OES) handles emergency response and planning (County of Fresno 2009b). Fresno County prepared a *Hazardous Waste Management Plan* in 1988, which was subsequently revised 1992. The Fresno County CUPA is responsible for implementing a unified hazardous waste and hazardous materials management regulatory program in Fresno County. The Health and Safety Element of the *Fresno County General Plan* (County of Fresno 2000) contains the Fresno County Operational Area Master Emergency Services Plan. Section B, Fire Hazards, identifies policies to assess risk and manage fire hazard. Section F, Hazardous Materials, has policies to regulate use of hazardous materials, promote recycling, and so on. The agency identifies and provides oversight of businesses that:

- Require Hazardous Materials Business Plans.
- Require California Accidental Release Prevention Plans or Federal Risk Management Plans.
- Operate underground storage tanks (USTs).
- Operate aboveground storage tanks (ASTs).
- Generate hazardous wastes.
- Have onsite treatment of hazardous wastes/tiered permits.

Compliance is achieved through routine inspections of all regulated facilities and investigation of citizen-based complaints and inquiries regarding improper handling and/or disposal of hazardous wastes and hazardous materials. The primary goal of CUPA is hazardous-waste source reduction. CUPA also provides oversight for the remediation of contaminated sites.

3.3.2 Fresno County Office of Emergency Services

The Fresno County OES is a program in the Department of Public Health, Division of Environmental Health System. The Fresno County OES coordinates planning, preparedness, and response and recovery efforts for disasters occurring within the unincorporated areas of the county.

The Fresno County OES coordinates the development and maintenance of the Fresno County Operational Area Master Emergency Services Plan. This plan serves as a guide for the county's response to emergencies and disasters in the unincorporated areas of the county. The purpose of this plan is to ensure the most effective and economical use of all resources (i.e., both material and human resources) for the maximum benefit and protection of affected populations in an emergency or disaster.

Each of the 15 incorporated cities in the County of Fresno maintains its own OES function for its incorporated areas and coordinates with the Fresno County OES regarding disaster preparedness, response, and recovery activities.

3.3.3 Fresno County Department of Public Health, Division of Environmental Health, Emergency Response Team

The emergency response team provides assistance to the public and other agencies by responding to hazardous materials spills and accidents and to emergencies during non-business hours. The emergency response team responds to incidents in all areas for which the Division of Environmental Health is responsible. Personnel specially trained in dealing with these situations analyze the problem and either resolve the matter or stabilize the situation such that it can be handled during regular business hours.

3.3.4 Fresno County Local Enforcement Agency for Solid Waste

The purpose of the Fresno County Local Enforcement Agency (LEA) for solid waste is to protect the health, safety, and well-being of the public and to preserve and improve the quality of the environment by ensuring proper storage and disposal of solid waste; minimizing the presence of disease-transmitting organisms related to solid-waste handling and disposal methods; and responding to public complaints relating to the accumulation, storage, collection, processing, and disposal of solid waste in Fresno County.

The Fresno County Board of Supervisors gave the Environmental Health Division of the Fresno County Department of Public Health the authority to act as the LEA for solid waste in an official designation on March 3, 1992. Pursuant to Public Resources Code Section 43203(a) and CCR Section 18051, 12 incorporated cities in Fresno County have provided letters of affirmation or new resolutions that designate the Fresno County Department of Public Health as the LEA for solid waste.

3.3.5 City of Fresno Fire Department Hazardous Materials Response Team

The City of Fresno Fire Department Hazardous Materials Response Team has implemented an all-hazards approach to emergency response to ensure that the community receives a robust, competent response to all hazardous materials events. The Hazardous Materials Response Team developed a hospital decontamination program and has instructed local hospitals on how to implement the program. As a result of this program, hospital staff are trained to decontaminate the large of people who would seek medical attention should a chemical release occur in this jurisdiction.

3.3.6 Kings County Division of Environmental Health Services

The Kings County Health Department's Division of Environmental Health Services is the designated CUPA for Kings County and is responsible for establishing and updating the Kings County Area Plan. The Kings County Board of Supervisors adopted the original Kings County Area Plan in January 1988 and most recently approved an update to the plan in September 2000 (County of Kings 2010).

This plan is designed to complement—but not duplicate—information already addressed in other regional or local response plans, such as the State of California Emergency Plan, the California Hazardous Materials Incident Contingency Plan, the Local Emergency Planning Committee Region V Hazardous Materials Response Plan, the Kings County Emergency Operations Plan, the Kings County Public Health and Bioterrorism Preparedness Plan, and various other local disaster response and domestic preparedness plans.

Under state law, all industries and agricultural operations that store or handle specified quantities of hazardous materials must provide the Division of Environmental Health Services with a

Hazardous Materials Business Plan that details the locations and quantities of the hazardous materials that they use in their business.

3.3.7 Kings County Office of Emergency Services

The Kings County OES is responsible for writing and maintaining the emergency response plan for the county, providing training, conducting exercises, and coordinating the opening and functioning of the Emergency Operations Center in the event of a major incident or disaster (e.g., a flood, earthquake, or major fire). The Kings County OES also supports the cities of Hanford, Avenal, Lemoore, and Corcoran, and all the political subdivisions of the county in their emergency preparedness and planning.

The Kings County OES works closely with the Governor's OES to prepare for and mitigate many types of emergencies. The OES also works with the Federal Emergency Management Agency to recover from disaster-related incidents and to return to a state of normalcy as quickly as possible.

3.3.8 Tulare County Health and Human Services Environmental Health Division

The Tulare County Business Plan Program requires businesses handling hazardous materials in quantities in excess of specified amounts to submit inventories of those materials to the CUPA (Tulare County Health and Human Services Agency) by means of a Hazardous Materials Business Plan and to develop appropriate employee training and emergency procedures. The CUPA maintains the inventory and emergency contact information submitted from businesses in a computerized data management system and provides this information to emergency response agencies. The governing statutes for the Business Plan Program are Health and Safety Code Chapter 6.95 Article 1, and the regulations at Title 19 CCR Division 2 Chapter 4 (County of Tulare 2009).

Businesses are required to provide emergency response plans and procedures in their Hazardous Material Business Plans. Each emergency response plan is to be scaled appropriately for the size and nature of the business, the damage potential of the hazardous materials present on the site, and the proximity of the facility to residential areas, schools, or other populations. At a minimum, the emergency response plan must address the elements of Title 19 CCR Division 2 Chapter 4 Section 2731.

Tulare County Health and Human Services Agency is also the lead agency for the Tulare County Operational Area. The Tulare County OES is charged with coordinating and managing resources to prepare for, respond to, recover from, and mitigate against disasters of all kinds, including hazardous materials spills and cleanups.

The Tulare County Fire Department provides fire, first-responder emergency, and emergency medical aid services to all unincorporated areas of Tulare County.

3.3.9 CUPAs for Kern County and City of Bakersfield

The CUPAs for Kern County and the City of Bakersfield were developed to consolidate the administration of six specific state hazardous materials programs under one agency. The CUPA for Kern County is the Environmental Health Services Department (County of Kern 2010). The CUPA for the City of Bakersfield is the Bakersfield Fire Department, which works jointly with the Environmental Health Services Department. Under these CUPAs, site inspections for hazardous materials programs (ASTs, USTs, 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. These departments also provide emergency response to hazardous materials events and perform health and environmental risk assessment and substance identification (County of Kern 2010).

3.3.10 Kern County Area Plan for Hazardous Material Incidents

The Kern County Plan for Hazardous Material Incidents, jointly developed by the Kern County CUPA and City of Bakersfield CUPA, meets the requirements regarding the development of both area and business plans as outlined for CUPAs in the California Health and Safety Code Division 20 Chapter 6.11, Sections 25404–25404.8 and Chapter 6.95, Article 1, Sections 25500–25520 and the CCR Title 19, Division 2, Chapter 4, Sections 2620–2734 and Title 27, Division 1, Subdivision 4, Chapter 1, Sections 15100–15620 (County of Kern 2005). The Kern County Plan for Hazardous Material Incidents is intended to cover local, state, and federal capabilities and to provide a graded response that calls up only those responders and resources required by an existing situation. This plan is based on the operational and procedural elements found in the Kern County Emergency Plan and mirrors the contents of that plan (County of Kern 2005). The jurisdictional familiarity and use of this plan will:

- Abate the exposure of the population and environment in a hazardous material incident.
- Assist in confining the effects of a primary incident by the use of coordinated action and limiting the possibility of secondary hazards.
- Ensure that the most-qualified technical specialists are available to assist an incident commander in a timely manner.
- Meet the legislative requirements for the local administering agency's need to publish an area plan.

3.3.11 Kern County Legal Authorities for Development and Administration of CUPAs

The Kern County Area Plan for Hazardous Materials Incidents covers incidents involving the accidental release of hazardous materials, which include but are not limited to the following: petroleum products, toxic chemicals (poisons, pesticides), radioactive substances, explosives, combustible/flammable materials, corrosives, oxidizers, hazardous waste, biological materials, sewage, and other health hazards on land and water, and released to the air. This plan is also designed to manage incidents involving weapons of mass destruction, terrorism, or other intentional releases of hazardous materials.

This document outlines responsibilities for county departments and divisions which have significant roles in responding to or planning for incidents as stated in the Kern County Emergency Plan; provides requirements for those cities under the auspices of the CUPA; reviews state agency capabilities and responsibilities to local government as described in the California Hazardous Materials Contingency Plan; initiates a formal incident notification system within Kern County; and generally ensures that a trained, knowledgeable, well-equipped group of multi-jurisdictional representatives will be available in a timely manner to respond during a significant hazardous materials incident.

This area plan is not intended or designed to be a procedural manual. Appendices have been added to meet specific requirements of the law. The plan is based on the mutual aid concept, which will provide a jurisdiction initially impacted with the level of response required to alleviate the problem with a minimum impact on the environment. Authority for development and

implementation of the Kern County Area Plan for Hazardous Materials Incidents is vested in the following (County of Kern 2005):

- California Health and Safety Code, Division 20, Chapter 6.5, Chapter 6.11; and Chapter 6.95.
- California Vehicle Code Sections 2450–2454 (Hazardous Substances Highway Spill Containment and Abatement Act).
- California Government Code Title 2 Division 1 Chapter 7 (California Emergency Services Act).
- California Emergency Plan (1998).
- California Hazardous Materials Incident Contingency Plan.
- California Oil Spill Contingency Plan.
- Kern County Ordinance Code, Title 2 Administration, Chapter 2.66, Emergency Services.
- Kern County Emergency Plan.
- Kern County Resolution adopting the California Master Mutual Aid Agreement (December 1950).
- Kern County B Hazardous Materials Investigations Task Force Memorandum of Understanding.
- Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III.
- California Code of Regulations Title 19 Division 2 Chapter 1 (Standardized Emergency Management System Regulations).

Chapter 4
Study Methodology

4.0 Study Methodology

This section discusses the study area, the physical setting, the scope of services performed, and the methodologies used for the hazardous materials baseline conditions assessment.

4.1 Study Area

The environmental study area for hazardous wastes and materials for the Fresno to Bakersfield Section, including the alternative alignments (the study area) is defined as a 200-foot (61-meter) corridor on each side of the centerlines of the alternative alignments (Figure 4-1). Schools within 0.25 mile of the construction footprint were assessed. For this Technical Report, URS understands that the Fresno to Bakersfield Section will be approximately 115 miles (185 kilometers) long, starting at approximate Amador street in the city of Fresno and ending at approximately Oswell Street in the city of Bakersfield. This technical report also covers proposed sites of the three station locations for the Fresno to Bakersfield Section of the HST within the 200-foot (61-meter) corridor. Additionally, this technical report covers the project footprint for potential locations of four HMFs.

The study area for this document as defined is the potential affected environment, which includes the following:

- Rail alignments. The *baseline assessment* included existing conditions where right-of-way currently exists or may need to be acquired, including alternative rail alignments from Fresno to Bakersfield.
- Station planning. The *baseline assessment* included areas proposed for station locations for the Fresno Station, the Kings–Tulare Regional Station, and the Bakersfield Station.
- Heavy maintenance facilities. The *baseline assessment* included area proposed for potential HMF locations in Fresno, Hanford, Wasco, and Shafter. Although portions of the HMFs extend beyond the 200-foot study area they are well within the 1-mile (1.6-kilometer) buffer URS used for requesting agency database reports and the extent of each proposed HMF site was assessed using the standard search distances that URS used to qualify any of the potential environmental concern (PEC) sites.
- Vertical construction profile. Potential areas requiring excavation, trenching, or other subsurface work that would require assessment of potential hazardous materials contamination.

The study area for the Fresno to Bakersfield alternative alignments is divided into three segments: Segments B, C, and D. Segment A is part of an alignment that is north of the Fresno to Bakersfield Section and is discussed in a different document. The three segments that are part of this report are:

- Segment B: Fresno. This segment begins in north Fresno at Clinton Avenue, at the southern end of the UPRR Fresno yard, continues through downtown Fresno, and terminates in the vicinity of the township of Bowles, south of Fresno. Although the segment begins at Clinton Avenue, the Authority required that the northern extent of this assessment for hazardous wastes and materials begin at Amador Street and continue south. Alternative alignments include the BNSF alignment alternative.
- Segment C: Rural. This segment begins in the vicinity of Bowles and continues southeast to Hageman Road in the community of Rosedale on the northern outskirts of Bakersfield and

includes the BNSF, the West Hanford Bypass, the Corcoran Bypass, the Allensworth Bypass, and Wasco-Shafter Bypass alignment alternatives.

- Segment D: Bakersfield. This segment begins in the northern outskirts of Bakersfield in the vicinity of Hageman Road, continues east through downtown Bakersfield, and terminates approximately at Oswell Street at the southern edge of the city. Alternative alignments include the BNSF, Bakersfield South, and the Bakersfield Hybrid alignment alternatives.

4.2 Scope of Services and Methodology

This report discusses the potential for hazardous wastes and materials or other existing PECs to affect construction and operation of the Fresno to Bakersfield Section of the statewide California HST system, based on a regulatory agency database search of the study area; applicable federal, state, and local regulations related to hazardous wastes and materials; and a visual evaluation of current selected site conditions (i.e., baseline conditions).

To identify PECs that could affect the study area, published databases containing lists of known and significant hazardous waste/hazardous material sites were reviewed. PECs are defined using the definitions for hazardous waste, material, and substances provided in the California Department of Transportation (Caltrans) initial site assessment guidance document dated 2006 (Caltrans 2006b) and the California Office of State Project Development Procedures and Quality Improvement in Division of Design *Project Development Procedures Manual*; Chapter 18 (Caltrans 2006c):

- *Hazardous waste* has complex state and federal legal definitions. In general, a solid waste is defined as a hazardous waste when it qualifies as a “waste” (i.e., is no longer of use and will be disposed) and when it exhibits a hazardous waste characteristic (toxicity, ignitability, reactivity, and/or corrosivity), or when it has been specifically listed as hazardous in federal or state law or regulation. Hazardous waste is regulated by the U.S. Environmental Protection Agency (U.S. EPA) under the RCRA. Federal hazardous wastes are often referred to as RCRA wastes. California hazardous waste law and regulation is in some cases more stringent than the federal law and, as a result, wastes may be defined as California hazardous wastes but not be RCRA wastes; as such, they may be identified as non-RCRA hazardous wastes.

- *Hazardous material* is a related term that includes hazardous waste and is defined 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. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering 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.

- *Hazardous substance* refers to any substance or mixture of substances that (1) is toxic, (2) is corrosive, (3) is an irritant, (4) is a strong sensitizer, (5) is flammable or combustible, or (6) generates pressure through decomposition, heat, or other means; if the substance or mixture of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children. It also includes certain radioactive substances and certain substances that present an electrical, mechanical, or thermal hazard.

A site was assessed to be a PEC site if it met the criteria for at least one of these three characteristics: the nature of the site's environmental history; the site's proximity to the alternative alignments; and the groundwater flow direction in the vicinity of the site, or a

combination of these factors. The purpose of this assessment was to identify, to the extent feasible, pursuant to the processes described herein, PECs in connection with selected sites within the study area to establish the *baseline conditions* described below.

This assessment consisted of four primary components: (1) regulatory agency records review, (2) historical information review, (3) site reconnaissance, and (4) preparation of this report. The following subtasks were completed as part of this assessment:

- Acquisition and review of a regulatory agency database search report for American Society for Testing and Materials (ASTM) E1527-specified standard environmental record sources and search distances.
- Review of historical information sources including aerial photographs, historical topographic maps, and Sanborn Insurance Company maps to ascertain general uses of selected sites in the study area and vicinity back to 1885.
- Review of reasonably ascertainable government agency files for selected sites considered to have a potential to adversely affect the study area; URS also made inquiries to the SWRCB GeoTracker website (SWRCB 2008) and the Department of Toxic Substances Control (DTSC) EnviroStor website (DTSC 2010) for additional information on the selected sites.
- Site reconnaissance of selected sites in the study area.
- Interviews with local governmental officials about current and past use of selected sites, and whether potential environmental conditions may exist at these specific sites in the study area.

4.3 Regulatory Database Review

URS reviewed readily available records regarding past and current site uses for properties within and adjacent to the study area; contacted applicable agencies regarding PECs; and reviewed the results of an agency database list search for PECs at surrounding and nearby properties. The information obtained during the records review is discussed in the following sections and subsections.

URS contracted with Environmental Data Resources, Inc. (EDR), to conduct a review of applicable regulatory agency lists of known and potential hazardous waste sites; properties or facilities currently under investigation for potential environmental violations; and sites storing or using hazardous materials. URS requested EDR to compile the list of these sites and facilities using a 1-mile (1.6-kilometer) search distance from the nearest alternative alignment centerline. The complete list of reviewed databases is provided in Table 4-1. The EDR database report is included as part of the EDR Environmental Atlas in Appendix A.

The database search involved a review of federal, state, tribal, and EDR proprietary environmental databases for sites with documented use, storage, or release of hazardous materials or petroleum products (Table 4-1). The January 13, 2010, EDR report identified historically contaminated properties; businesses that use, generate, or dispose of hazardous materials or petroleum products in their operations; and active contaminated sites that are currently under assessment and/or remediation (EDR 2010c).

URS further focused its assessment on sites that were on, adjacent to, or appeared to be close enough to the alignment alternatives to negatively affect the study area. URS also selected sites that warranted further evaluation because of the particular conditions of a spill or suspected hydrogeologic conditions.

4.3.1 Standard Historical Environmental Records Sources

URS requested EDR to provide two additional types of historical records of the study area for URS to review:

- Historical topographic maps (EDR 2010b).
- Sanborn fire insurance maps (EDR 2010a and 2010d).

Additionally, URS reviewed:

- Historical aerial photographs compiled from several county-owned collections (see "Aerial Photographic Resources" in Chapter 7).

4.3.2 Screening Criteria

URS reviewed the results of the database search report in the EDR Environmental Atlas to note reported release sites within 1 mile (1.6 kilometers) of the alternative alignment centerlines suspected of having the potential to have adversely affected the study area (i.e., are known to have resulted in, or are expected to result in PECs) (EDR 2010c, 2011). To more fully evaluate sites identified in the database with the potential to negatively affect the study area, screening criteria were applied to evaluate the nature and extent of a given release for each identified site, the distance of the reported release site from the study area, and the position of a reported release site with respect to known or expected local and/or regional groundwater flow direction.

Generally, reported release sites within 0.25 mile (0.4 kilometer) upgradient, 0.125-mile (0.2-kilometer) crossgradient, adjacent downgradient of the centerline of the alternative alignments, or within the 200-foot-wide study area are considered to have the potential for having affected the study area, and were further assessed by reviewing agency records and/or interviewing agency personnel. Sites that were listed in the database search report, but not identified as a release site (for example, a site listed as a hazardous waste generator but not as having had a release), and sites that were listed as being "closed," are not considered to have the potential for having affected the property based on reasonably available information.

Furthermore, using proximity to the alternative alignments, extent of documented contamination, and status of remediation as its basis, URS estimated the relative likelihood (high, medium, or low) for environmentally impacted sites to have potentially affected the study area. Sites estimated with high and medium likelihood to affect the study area were selected for site reconnaissance and additional site assessment. It is conceivable that sites estimated with low likelihood to affect the study area could present situations requiring mitigation; however these "conceivable" scenarios have not been addressed in this Technical Report and will be the focus of future parcel-by-parcel due diligence investigations prior to the property acquisition phase.

4.4 Agency Records Review

During this environmental assessment, state and local regulatory agencies with jurisdiction over the study area were contacted to assess the following information for selected sites:

- The status of relevant environmental permits.
- Whether there have been any violations, or other similar correspondence from such agencies.
- Whether any corrective action or remediation is planned, currently taking place, or completed at the subject property.

- Whether there have been any reported violations or complaints that the subject property is not in compliance with environmental laws, regulations, or standards.
- Whether the subject property is under investigation for such noncompliance.
- Whether the subject property is listed on any of the regulatory databases.
- Whether any other pertinent documentation is on file with such regulatory agencies regarding selected sites in the study area or surrounding sites of concern.

The agency responses are discussed further in the subsections below and in the appropriate sections of this report.

4.4.1 California Regional Water Quality Control Board

URS contacted the RWQCB office in Fresno, California, regarding records on file for selected facilities in the study area. The RWQCB responded by telephone and stated that the RWQCB had files on several sites requested. URS reviewed the available files for the sites at the RWQCB office on March 5, 2010, and discussed the contents with John Whiting of the RWQCB.

4.4.2 California Department of Toxic Substances Control

URS contacted the DTSC regional office in Clovis, California, regarding records on file for selected facilities in the study area. DTSC responded by telephone and stated that DTSC had requested files on several sites. URS reviewed the available files for the sites at the DTSC office on March 3, 2010, and discussed the contents with Thomas Berg of DTSC.

4.4.3 GeoTracker and EnviroStor Databases

As a follow-up to the RWQCB and DTSC inquiries, URS also made inquiries to the SWRCB GeoTracker website (http://www.geotracker.waterboards.ca.gov/) (SWRCB 2008) and the DTSC EnviroStor website (http://www.envirostor.dtsc.ca.gov/public/) (DTSC 2010) for additional information on the selected sites. Information gathered from these sources is discussed further in the appropriate sections of this report.

4.5 Project Site Historic Use Information

URS reviewed readily available historical information pertaining to the study area. These references were reviewed for evidence of activities that would suggest the potential presence of hazardous substances in the study area and to evaluate the potential for the study area to be affected by offsite sources of contamination. The following subsections are a summary of the information reviewed.

4.5.1 Historical Aerial Photographs

The general type of activity and land use can often be discerned from the type and layout of structures visible in an aerial photograph; however, specific elements of a site operation cannot normally be determined from the photographs. With this in mind, URS reviewed historical aerial photographs of the study area compiled from several collections and digitized by the URS geographic information system (GIS) department. URS reviewed aerial photographs for the dates noted in the following locales:

- Fresno County: 1937, 1950, 1957, 1961, 1965, 1967, 1973, 1977 (Fresno County, Maps and Government Information Department, California State University, Fresno [2010]).

- Kings County: 1937, 1940, 1942, 1957, 1961 (Kings County Planning Division, County Development Agency [2010]).
- Tulare County: 1937, 1956, 1961, 1967 (Tulare County Library [2010]).
- Kern County: 1937, 1947, 1952, 1956 (Kern Council of Governments [2010]).

4.5.2 Sanborn Insurance Company Maps

URS requested Sanborn Insurance Company maps of the study area from EDR for any available years. Sanborn maps covering all or part of the urban areas within the study area were provided to URS for review using Sanborn direct technology for the following dates:

- Fresno: 1885, 1888, 1898, 1906, 1918, 1919, 1948, 1950, 1970.
- Sumner: 1888, 1889.
- Corcoran: 1912, 1928, 1942.
- Wasco: 1913, 1926, 1941, 1952.
- Shafter: 1926, 1940, 1945.
- Bakersfield: 1888, 1889, 1890, 1892, 1899, 1905, 1912, 1951, 1949, 1957, 1969.
- East Bakersfield: 1890.

Observations gathered regarding the potential for the study area to be negatively affected by past uses of selected sites (i.e., locations identified during the EDR regulatory database review) are summarized in a table in Appendix B. Copies of the Sanborn Insurance Company Maps are included in Appendix C (CD ROM).

4.5.3 Historical Topographic Maps

As with aerial photographs, the general type of activity and land use can often be discerned from the type and layout of structures visible on historical topographic maps. However, specific elements of a site operation cannot normally be determined from the maps. URS reviewed historical topographic maps provided by EDR for the study area and surrounding areas extending from Fresno to east Bakersfield to assess the earliest recorded development of selected locations (i.e., locations identified during the regulatory database review). Copies of the historical topographic maps are provided in Appendix C (CD ROM).

4.6 Previous Site Assessments

URS reviewed previous site assessments available on the SWRCB GeoTracker website and the DTSC EnviroStor website for selected properties within the study area. Copies of excerpts from selected previous site assessments are included with the site reconnaissance data sheets in Appendix D.

4.7 Site Reconnaissance

Between March 4, 2010, and March 18, 2010, URS staff conducted site reconnaissance at 39 selected PEC sites (39 unique site visits as a result of address and/or name changes) of 121 locations identified in the EDR agency database search. Staff members were not escorted during the time of the site visits. The 39 sites are considered to have the highest likelihood of negatively affecting the HST alternative alignments because of their proximity to the alternatives and/or extent of the current documented impacts (i.e., documented presence of hazardous materials or waste, open investigations, or ongoing remediation).

The purpose of the site reconnaissance was to make observations that would enable the development of conclusions relating to the likelihood of PECs in the study area. Additionally, observations were made to verify conditions identified in the agency database screening process. All accessible and unobstructed exterior areas of the sites or facilities, and interior areas or representative interior areas of the sites where access was granted, were observed as part of this assessment. For larger properties, URS staff conducting the exterior site reconnaissance traversed the periphery of the property or other areas where materials or equipment were stored.

This assessment is an effort to establish *baseline conditions* for the study area. Thirty four sites were selected for site reconnaissance because they were representative of the various alternative alignments. Because of various access constraints, not all 39 sites or facilities could be entered. URS was not granted permission to access several sites or was not granted permission to enter the interior of several facilities. In one case, permission to access the site was granted but no photographs were allowed. In these instances, observations were made from public rights-of-way around the site or facility to evaluate general site conditions and assess the presence of PECs (i.e., monitoring wells or remediation systems).

Copies of the site reconnaissance checklists, selected site photographs, and a photographic log are included in Appendix D.

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Chapter 5
Existing Baseline Conditions

5.0 Existing Baseline Conditions

Under CEQA, *baseline conditions* are defined as the conditions that exist at the time that the Notice of Preparation is filed. This section discusses the existing baseline conditions, the sites with PECs as defined in the Caltrans initial site assessment guidance document dated 2006, and other PECs (Caltrans 2006b) based on the investigation methods described in Section 4.2, which included these primary components: (1) regulatory agency records review; (2) historical information review; and (3) a limited number of site reconnaissance. Although PEC sites are typically found in commercial and industrial areas, they also occur in rural areas. Therefore, contaminated sites could occur in any of the three segments investigated. Most of the California HST system alternative alignments would be within existing rights-of-way, and because of this land-use history, additional unknown contamination from spills, accidental releases, and so on, would be possible. An in depth, parcel-by-parcel investigation was not conducted for this report, consequently, some unavoidable hazardous waste and hazardous material impacts are expected under the alternative alignments.

During the development of transportation projects, common impacts from contaminated sites include the unanticipated costs associated with excavating (or pumping), transporting, disposing of, or treating onsite contaminated soil, groundwater, or hazardous materials; the schedule delays associated with sampling, removing, treating, and/or disposing of contaminated media; and worker-safety issues.

If unanticipated contaminated soil is encountered during excavation at a project site, the contaminated soil not only poses a safety concern to site workers but also requires additional work to determine the type of chemical contamination and the limits of its the aerial and vertical extent of the contamination. Unanticipated construction delays and costs can occur because of the need to implement mitigation measures (e.g., coordinate with regulatory agencies, conduct soil sampling to characterize chemical concentrations) and from the cost of onsite or offsite treatment and disposal, or both.

5.1 Physiography and Regional Geologic Setting

All three segments (segments B, C, and D) of the Fresno to Bakersfield Section are in the Great Valley geomorphic province, which in the region surrounding the section is characterized by relatively flat topography. At the latitude of the proposed Fresno, Kings-Tulare Regional, and Bakersfield HST stations, the valley is approximately 54, 70, and 45 miles (87, 113, and 72 kilometers) wide, respectively. The Fresno to Bakersfield Section is in the San Joaquin Valley, which is formed by the Great Valley geocline, which is a large, elongated, northwest-trending asymmetric structural trough. The northwest-trending axis of the geocline is closer to the western side of the valley, with the regional dip of the formations on the eastern side being less than that of the formations on the western side. The valley is bordered by the Pacific coast ranges to the west, the Klamath Mountains and Cascade Range to the north, the Sierra Nevada to the east, and San Emigdio and Tehachapi mountains on the south. The trough continues southward from the Sacramento–San Joaquin Delta region, where it is called the San Joaquin Valley.

The structural trough has a long, stable eastern shelf supported by metamorphic and igneous rocks of the west-dipping Sierran slope. The basement rocks of the western edge of the structural trough are composed of Jurassic metamorphic, ultramafic, and igneous rocks of the Franciscan formation. This structural trough began receiving sediments in the Late Jurassic epoch (208 to 144 million years ago [MA]). It has been filled with sediments derived from both marine and continental sources.

The thickness of the valley sediments ranges from thin veneers along the valley edges to greater than 40,000 feet (12,200 meters) in the central portion of the valley. These sedimentary deposits range in age from Jurassic (190 to 135 MA) to Holocene (0 to 0.01 MA) epochs, with the older deposits (Jurassic to Eocene (57.8 to 36.6 MA) comprising the marine sequence, and the younger deposits (Eocene to Holocene age) comprising the continental sequence. The marine deposits were formed in offshore shallow ocean shelf and basin environments. Continental sediments were derived from mountain ranges surrounding the valley and were deposited in lacustrine, fluvial, and alluvial environments (Norris & Webb 1990).

Based on review of the California Department of Conservation, Division of Mines and Geology publication, *A General Location Guide for Ultramafic Rocks in California: Areas More Likely to Contain Naturally Occurring Asbestos,* Open-File Report 2000-19, the study area is approximately 30 miles (50 kilometers) west of the nearest known ultramafic rock outcroppings (California Department of Conservation 2000). Therefore, naturally occurring asbestos (NOA) is not considered a substantial concern for the Fresno to Bakersfield alternative alignments.

5.1.1 Segment B: Fresno

Within the HST Segment B – Fresno alignment, in the vicinity of the proposed Fresno Station, the HST traverses across well-drained soils associated with low alluvial terraces. The San Joaquin–Exeter-Ramona association consists of sandy loams to loams that are shallow to moderately deep, to a hardpan and deep sandy loams and loams (USDA 1971). This soil association extends from the station to within the vicinity of Calwa City. From the vicinity of Calwa City, soils transition to somewhat excessively drained to moderately well-drained soils of young alluvial fans. The Hanford-Delhi-Hesperia association extends from Calwa City south, to the southern limit of the segment. These soils consist of deep, well-drained sands to fine sandy loams modified partly by wind.

5.1.2 Segment C: Rural

HST Segment C – Rural crosses relatively flat topography from north of Bowles to the west of Rosedale. The segment traverses the Hanford-Delhi-Hesperia association, described above, to the vicinity of Conejo. From Conejo to the south, the HST crosses somewhat excessively drained to poorly drained soils of the Basin Rim, including from north to south the Fresno-El Peco and the Trover-Calhi associations. Both soil associations consist of somewhat poorly drained, fine sandy loams that are saline-alkali rich (thus, potentially susceptible to corrosivity). Trover-Calhi soils are moderately deep or deep to compact with silt, and Fresno-El Peco are shallow to moderately deep to a hardpan.

Within the vicinity of Laton, north of the Kings River outwash plain, the HST traverses soils of the eastside valley alluvial plain, specifically the Grangeville-Chino association, which is deep to very deep and consists of somewhat poorly drained sandy loams to loams. Within Kings County, south of the Kings River, mapped soils are associated with alluvial fans and floodplains typical of the San Joaquin Valley (USDA 1986).

Within the vicinity of Hanford, soils consist of very deep, nearly level, well-drained soils of the Nord series. South of Hanford, soils transition to the Kimberlina-Garces series, a very deep, nearly level, well-drained saline-alkali soil.

In the vicinity north of Corcoran, west of where the HST alignment passes adjacent to the Corcoran Irrigation District Reservoir, soils consist of the Armona-Lakeside–Grangeville soil series. These are saline-alkali soils that typically have a perched water table and are in basins and on topographically low alluvial fans, alluvial plains, basin rims, and floodplains (USDA 1988). The

Armona-Lakeside-Grangeville–type soils are typically very deep, nearly level, and somewhat to poorly drained.

In Tulare County, the HST alignment crosses Gambogy-Biggriz soil associations, which consist of mixed alluvium derived mainly from granitic rock sources (USDA, California Department of Conservation, and Tulare County 2003). These soils are typically very deep, poorly to somewhat poorly drained, and have high steel and moderate concrete corrosivity potential. The shrink-swell potential is considered moderate.

Within the vicinity of the Taylor Canal, the HST alignment traverses Gepford-Houser-Armona soil associations, which consist of very deep, somewhat poorly and poorly drained soils that formed in alluvium derived from granitic sources. A high water table is present in the Gepford and Armona soils. Areas with these soils are considered to be artificially drained because of the protection from flooding and pumping from the water table.

In the area near the town of Alpaugh, the HST traverses Nahrub-Lethent-Posochanet soil associations, which are very deep, somewhat poorly and moderately well-drained soils. These soils form in mixed alluvium on basin rims, fan remnants, and fan skirts. They are considered to have very slow to slow permeability.

Near Allensworth, the HST crosses Garech-Atesh-Kimberlina soil associations, which extend to the southern limit of Tulare County. These soils are considered moderately well to well-drained and formed where native soils were reclaimed by farming practices in alluvium derived from granitic sources. A duripan, which could be ripped and/or shattered, can improve permeability, available water capacity, and internal drainage.

In Kern County, the HST traverses soils associated with alluvial plains, basin rims, and floodplains of the eastern part of the San Joaquin Valley (USDA 1988). From the vicinity to the north of Pond and to the west of Bakersfield near Greenacres, these soils include the following soil associations with a brief description provided of each:

- Garces-Panoche: deep, nearly level, well-drained silt loam and clay loam.
- Kimberlina-Wasco: deep, nearly level, well-drained, fine sandy loam and sandy loam.
- McFarland: deep, nearly level, well-drained loam.
- Milham: deep, nearly level, well-drained sandy loam.

5.1.3 Segment D: Bakersfield

HST Segment D–Bakersfield crosses nearly level terrain from the west of Greenacres to Bakersfield. Soils in this area consist of Kimberlina-Wasco series which is described above. To the east of Bakersfield and extending to within the vicinity of Edison, the HST traverses the Delano-Chanac series which formed in alluvium derived of granitic rock. This series is generally deep, nearly level to hilly, and well-drained. The soil consists of sandy loam and clay loam.

5.2 Hydrology

All three segments of the Fresno to Bakersfield HST alternative alignments are in the Tulare Lake Hydrologic Region (HR) (DWR 2003).

5.2.1 Description of the Region

The Tulare Lake HR covers approximately 10.9 million acres (4.41 million hectares) and includes all of Kings and Tulare counties and most of Fresno and Kern counties. The region corresponds to approximately the southern one-third of RWQCB District 5. 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).

5.2.2 Groundwater Development

The region 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 (2.16 million hectares), or 49% of the entire HR area. Groundwater has historically been important to both urban and agricultural uses, accounting for 41% of the region's total annual supply and 35% of all groundwater use in the state. Groundwater use in the region represents about 10% of the state's overall supply for agricultural and urban uses (DWR 1998).

The aquifers are generally quite thick in the San Joaquin Valley subbasins with groundwater wells commonly exceeding 1,000 feet (300 meters) in depth. The maximum thickness of freshwater-bearing deposits (4,400 feet [1,300 meters]) occurs at the southern end of the San Joaquin Valley. Typical well yields in the San Joaquin Valley range from 300 gallons per minute (gpm) (1,140 liters per minute) to 2,000 gpm (7,571 liters per minute), with yields of 4,000 gpm (15,140 liters per minute) possible. The smaller basins in the mountains surrounding the San Joaquin Valley have thinner aquifers and generally lower well yields averaging less than 500 gpm (1,890 liters per minute) (DWR 2003).

The cities of Fresno, Bakersfield, and Visalia have groundwater recharge programs to ensure that groundwater will continue to be a viable water supply in the future. Extensive groundwater recharge programs are also in place in the South Valley where water districts have recharged several million acre-feet for future use and transfer through water-banking programs.

The extensive use of groundwater in the San Joaquin Valley has historically caused subsidence of the land surface primarily along the west side and south end of the valley (DWR 2003).

5.3 Surface Water

A brief description of the regional surface water conditions are presented here. This *baseline assessment* does not include wetlands assessment specifically, which are the focus of a concurrent study.

The project study area is entirely within the Tulare Lake Basin. Major surface water features in the Tulare Lake Basin include the Kings, Kaweah, Tule, and Kern rivers. These rivers flow westward from the Sierra Nevada and provide the majority of natural surface water supply in the basin. The downstream reaches of these rivers, many of which have been altered, cross the alternative alignments within the South Valley Floor watershed. Because of storage and diversions upstream, east of the project study area, the downstream reaches of these rivers are often dry. Elevations within the South Valley Floor watershed range from 154 feet to 4,131 feet (47 meters to 1,259 meters) (Jones & Stokes 2008).

Smaller streams, creeks, and canals are also present on the valley floor, some of which cross the alternative alignments. Surface water and groundwater are pumped to and from these rivers and numerous canals that deliver irrigation water to and from agricultural fields throughout the region. The canals are packed earth or concrete-lined and generally lack the meanders, vegetation, biota, and other features of natural streams. With the exception of the Corcoran Reservoir, no significant lakes or reservoirs are adjacent to or within the 200-foot-wide right-of-way along the alternative alignments, although small farm ponds are relatively common.

5.4 Sites with Potential Environmental Concerns

The degree of contamination in most of the hazardous waste/material sites in the study area is relatively minor in extent and could be effectively mitigated through typical design and construction practices. URS identified 121 PEC sites and other general conditions that could require further assessment based on one or more of the conditions discussed in Section 4.5. The 121 PEC sites are listed in Table 5-1. The locations of the PEC sites are shown on Figure 5-1. URS determined that 44 individual sites had a "medium" or "high" likelihood of affecting the study area and performed a site reconnaissance at these sites, mainly due to their location within the proposed project footprint or proximity to the proposed right-of-way. Because several of the sites were found to be duplicate listings during the site reconnaissance (because of changes in name and/or address), the site reconnaissance actually involved 39 site visits. URS found that all but 7 of the 39 sites or facilities (referred to as "sites" hereafter) were in various stages of environmental investigation, mitigation, or remediation (Table 5-2; Figure 5-1). Although multiple environmental concerns may exist at several sites, the primary environmental concerns at the 39 sites (and the number of sites associated with each concern) are as follows:

- Large-scale refineries: 3.
- Closed landfill sites with gas and or leachate control or monitoring: 4.
- Active nonhazardous waste transfer and recycling station (under investigation): 1.
- Sites with open or pending U.S. EPA or DTSC investigations (not yet classified by the agency): 3.
- Sites or facilities known to handle asbestos-containing materials (ACMs) (no onsite storage): 1.
- Sites or facilities with soil and/or groundwater affected by petroleum hydrocarbons: 9.
- Sites or facilities with soil and/or groundwater affected by perchloroethylene (PCE), trichloroethylene (TCE), and/or heavy metals: 7.
- Sites or facilities with soil and/or groundwater affected by pesticides or other agricultural chemicals: 5.
- Sites or facilities on or adjacent to the alternative alignments known to handle extremely hazardous materials (no incidents or violations reported): 6.

Besides these sites, URS identified several general PECs that might affect all or some of the proposed project corridor. These situations, discussed further in Section 5.5, include the following:

- The potential presence of lead-based paint (LBP) on structures or buildings that might require renovation or demolition during construction.
- The potential presence of ACMs in structures that might require renovation or demolition.
- The potential presence of residual pesticides where construction would occur on current or former agricultural land.
- The potential presence of polychlorinated biphenyls (PCBs) in soil near former transformer locations or in existing transformers or other electrical equipment.

- The potential presence of aerially deposited lead (ADL) where construction would be adjacent to roadways.

These conditions are discussed in more detail in Section 5.5.

Sites with the greatest potential to affect the project alignments and warrant a "high" priority ranking are the major hazardous waste sites and hazardous material sites that are listed on the National Priority List (NPL) database, DTSC's Site Mitigation and Brownfield Reuse Program's EnviroStor database (EnviroStor database) (formerly the State Priority List database), or the solid waste landfill (SWLF) databases, although the overall environmental characteristics of the study area vicinity were also considered.

Other types of PEC sites, such as sites with leaking underground storage tanks (LUSTs) or small or unknown sites, can also present the potential for impacts from hazardous wastes and materials. These sites have been given a "medium" priority ranking were they were evident from information gathered. However, the degree of impact cannot be determined without a site-specific environmental assessment and investigation. These site-specific investigations to address LUSTs and small or unknown contaminated sites need to be considered in the project-level pre-design evaluations that would be tied to more-detailed planning efforts for alignment plans and profiles. The following sections summarize issues at some of the notable sites on the list of 39 sites shown in Table 5-2. Table 6-2 lists the number of NPL, EnviroStor, and SWLF hazardous waste/material sites sorted by occurrence in the alignment segments.

It is conceivable that sites estimated with "low" likelihood to affect the study area could present situations requiring mitigation; however these "conceivable" scenarios have not been addressed in this Technical Report and will be the focus of future parcel-by-parcel due diligence investigations prior to the property acquisition phase.

5.4.1 Segment B: Fresno

The alternative alignments in this corridor consist of various combinations of the existing BNSF Railway and UPRR lines. The alternative alignments pass through areas that have been in commercial or industrial use since the late 1800s, or earlier. Therefore, these alignment alternatives have some potential to encounter hazardous waste/material sites that are not described here or listed in Table 5-1. Commercial or industrial-use areas suggest higher potential for impacts from PCBs, ACMs, and LBP risks, or potential ADL contamination if the alternative alignment is parallel to a freeway or highway. Additionally, there is increased potential for pesticide contamination if the area was developed predominately for agriculture. The most notable sites in Segment B are summarized below based on their "medium" to "high" priority ranking, or conditions observed during the site reconnaissance.

VOPAK USA Inc. (site 3, Table 5-1; Figure 5-1). This site is adjacent to the BNSF Alternative Alignment. The RWQCB is the lead agency for the site. The former handler was engaged in the treatment, storage, and disposal of hazardous waste. Reportedly, soil and soil-vapor surveys in 1996 indicated the presence of PCE. According to EDR, several monitoring wells were installed in 1996, and the monitoring results showed PCE in the underlying groundwater. A soil-vapor extraction (SVE) system was installed in 1998 and was run until 2004. Four new offsite SVE wells were installed in late 2008. An SVE system is currently being installed downgradient of the site to remediate soils affected by volatile organic compounds (VOCs) migrating off the site. The case status is reported as "open – remediation." The site and structures were vacant at the time of the site reconnaissance.

California Diesel Repair (also known as [aka] the former Anderson Clayton site) (sites 35 and 36, Table 5-1; Figure 5-1). The BNSF Alternative Alignment passes through this site. U.S.

EPA is the lead agency, operating under a Preliminary Assessment/Site Investigation (PASI) grant. The results of onsite soil sampling have documented release of petroleum products to shallow soils. Impacts on groundwater have occurred, and these impacts may pose a threat to drinking water supplies.

The U.S. EPA completed a preliminary assessment on September 9, 2009. Information in the preliminary assessment report indicates that the U.S. EPA has determined that no further assessment is warranted. DTSC and the RWQCB may require additional investigation. The case status is reported as "inactive – needs evaluation."

Former Anderson Clayton (aka California Diesel Repair) (sites 35 and 36, Table 5-1; Figure 5-1). Gasoline contamination is reported to be present at the site. The RWQCB is the lead agency. The extent of the contamination has not been determined. A work plan for a site assessment was requested in December 2008. The case status has been reported as "open – site assessment" since September 1987.

Former Burlington Northern Santa Fe Ice House (site 38, Table 5-1; Figure 5-1)**.** The BNSF Alternative passes through the site. Soils and groundwater beneath the site are reported to contain hexavalent chromium. DTSC is the lead agency. According to EDR, ice was produced at the site from around 1911 until the late 1960s. The ice plant was decommissioned between October 1969 and March 1971. Brine tanks were reported to have been used at the ice-making plant. Chromium has been detected in soil and groundwater samples collected at the site. The case began in January 2002. The site was assessed in October 2004. The case status has been reported as "open – remediation" since 2007.

Former FMC Corporation (site 40, Table 5-1; Figure 5-1). The BNSF Alternative passes 200 feet (61 meters) west the site and passes through areas reported to be affected by agricultural chemical contamination. U.S. EPA, RWQCB, and DTSC are the lead agencies.

FMC operated an agricultural chemical formulation plant at this site. In the past, wash and rinse water produced during chemical formulation and support operations, along with stormwater runoff, was discharged to surface impoundments, an open field, and dry wells. These discharges resulted in contaminating several areas. Onsite soils and groundwater have been contaminated with a wide variety of agricultural chemicals, including dichlorodiphenyltrichloroethane (DDT), endrin, toxaphene, dieldrin, and ethion. The site is fenced and posted, and access is controlled. The site is also the source area for part of the South Fresno Regional Groundwater Plume (OU-2). A plume is a body of contaminated groundwater originating from a specific source and influenced by certain factors such as local groundwater flow patterns and the character of the aquifer. A detailed discussion of the source area of the contamination in soil and groundwater and maps showing the approximate extent of the contaminant plume in groundwater are included in Appendix D with the Field Data Sheets for the FMC Corporation site and the South Fresno Regional Groundwater Plume (OU-2) site.

Weir Floway Inc. (site 42, Table 5-1; Figure 5-1). The BNSF Alternative passes through the site, including the areas currently under remediation. The site contaminants are reported to be petroleum hydrocarbons, TCE, and chromium. DTSC is the lead agency.

In 1991, while preparing to erect a metal building on an existing foundation, a 300-gallon (1,136 liters) UST was discovered. This discovery prompted an investigation to determine the extent of petroleum waste associated with past tank releases. The investigation determined that the soil underlying parcels 12 and 13 had been affected with petroleum waste constituents from various past operations. The investigation also determined that chromium and TCE are present in groundwater underlying and downgradient of parcel 18. According to EnviroStor, the case has

been closed since March 2000. However, the site is also the source area for the Vendo plume, which is part of the South Fresno Regional Groundwater Plume (OU-1).

Professional Asbestos Removal Corp; (aka PARC Environmental) (site 52, Table 5-1; Figure 5-1), The BNSF Alignment passes through the site. PARC removes and disposes of various hazardous waste materials, including ACMs. The facility has multiple violations including Transporters - General, Generators - Pretransport, Generators – General. A letter of intent to initiate enforcement action (4/12/2004) and a final compliance order (6/4/2004) were issued by DTSC.

Truck City (site 54, Table 5-1; Figure 5-1), The BNSF Alignment passes through the site. The site soils and groundwater have been affected by diesel. Drinking water is affected. The RWQCB status is “Open - site assessment and pollution characterization is underway.

South Fresno Regional Groundwater Plume (site 59, Table 5-1; Figure 5-1). The BNSF Alternative passes through the site. The plume is in the industrial area of south Fresno and appears to be the result of releases from multiple sources. DTSC and RWQCB are the lead agencies. Many of the surrounding facilities have been in operation since WWII, and some properties have been used for industrial purposes since the early 1900s. DTSC has been working with several potential responsible parties (RPs) to investigate this comingled groundwater plume.

Hazardous substances present in groundwater beneath the site include VOCs, metals, and pesticides. Vendo and Weir Floway are the RPs for site OU 1, which encompasses the area north of the intersection of Church Avenue and South East Avenue, west of the eastern boundary of the BNSF right-of-way, east of Van Ness Avenue, north of Golden State Boulevard, and south of Woodward Avenue. FMC Corporation is the RP for site OU 2, which encompasses the area north of FMC, east of the eastern boundary of the BNSF right-of-way, west of South Gearhart Street, and south of Woodward Avenue.

Cedar Avenue Recycling and Transfer Station (CARTS): Orange Avenue Disposal Site (site 57, Table 5-1; Figure 5-1)**.** The BNSF Alternative passes east of the CARTS site and the Fresno HMF is located east and south of the CARTS. CARTS accepts construction/demolition material, green materials, industrial/inert waste, mixed municipal waste, and wood waste. According to Fresno County, CARTS is a low-priority site.

Low-level groundwater contamination from chromium, cadmium, and carbon tetrachloride has been detected. Contamination levels are slightly elevated in groundwater. The site is surrounded by a landfill (Orange Avenue Disposal Site) and other possible groundwater contamination sources. The adjacent landfill is owned and operated by the current owners of CARTS. Groundwater contamination levels are reported to be only slightly greater than the regulatory agency maximum contaminant levels (MCLs). Soil contamination levels are less than the regulatory agency primary remediation goals.

Orange Avenue Disposal Site (site 57, Table 5-1; Figure 5-1). This site is an approximately 39-acre (16-hectare) solid-waste landfill in Fresno, on the corner of South Orange Avenue and East Muscat Avenue. The site has been undergoing closure; oversight is being provided by the Integrated Waste Management Board, Fresno County Environmental Health as the lead agency for closure. The RWQCB has been providing oversight for groundwater investigation activities since the early 1990s.

The contaminants are diesel and other nonpetroleum hydrocarbon VOCs. The facility reached capacity in mid-2007 and the landfill's last day of accepting waste was June 26, 2007. The case status has been reported as “open – site assessment, pollution characterization.”

5.4.2 Segment C: Rural

Alignment alternatives through rural and agricultural areas have less potential to encounter hazardous wastes or materials as compared with alignment alternatives in more-urban areas. However, there is increased potential for pesticide contamination if the areas were developed predominately for agriculture, and the potential for ADL contamination exists if the respective alignment is parallel to a freeway or highway.

Chestnut Avenue Sanitary Landfill (site 73, Table 5-1; Figure 5-1)**.** The BNSF Alternative passes adjacent to the northeast corner of the site. The site is listed as a former solid-waste facility, with no violations found. The RWQCB is the lead agency. Possible groundwater contamination was reported in 1965. No further information was available for the site.

Hanford Facility (aka Baker Commodities, Inc.) (site 77, Table 5-1; Figure 5-1). The BNSF Alternative passes through the site. Baker Commodities is a disposal service for large-animal carcasses, such as dairy cattle. According to EDR, the site is listed on the databases for USTs and ASTs. The site is reported to treat waste derived from the process of dispatching animal carcasses and wash water waste, with no violations reported.

Pry's Ag Services Inc. (site WH-3, Table 5-1; Figure 5-1). Ag chemicals stored and used in the West Hanford Bypass footprint of the east-side grade separation. No violations reported.

Warmerdam Farms Inc. (site WH-4, Table 5-1; Figure 5-1). Ag chemicals stored and used in the West Hanford Bypass west-side grade separation footprint. No Violations reported.

Johnson's Auto and Tractor (site WH-8, Table 5-1; Figure 5-1). The site is a Historical Cortese and LUST site located at the corner of 14th Avenue and 6th Street in Armona, adjacent south of the long SJVRR footprint appendage of the West Hanford Bypass.

Zonneveld Dairies Inc. (site WH-10, Table 5-1; Figure 5-1). The site appears to be an equipment storage location and processing area for cattle feed-possibly Ag Chemicals stored on site. The site is within the West Hanford Bypass footprint for the grade separation at 12th Avenue and Jackson Avenue.

Hadley Yocum-Lakeside Bar (site WH-11, Table 5-1; Figure 5-1). The site is a Historical Cortese and LUST site. The site is within, and adjacent to, the east side of the West Hanford Bypass grade separation at Kansas Avenue. Open Site Assessment- LUST site with groundwater monitoring, a Corrective Action Plan/Remedial Action Plan for drinking water aquifer affected by gasoline.

Corcoran Sanitary Landfill (site 79, Table 5-1; Figure 5-1). The BNSF Alternative passes west of this site. The site is reported to be a closed solid-waste disposal site. No other information was available from EDR, EnviroStor, or the SWRCB GeoTracker website (SWRCB 2008).

Puregro-Corcoran (site 80, Table 5-1; Figure 5-1). Adjacent west of the Corcoran Sanitary Landfill, the BNSF Alternative passes west the site. DTSC is the lead agency. The site is reported to be contaminated by dichlorodiphenyldichloroethylene (DDE), DDT, toxaphene, phenoxyacid herbicides, and sodium chlorate. The 10-acre (4.0-hectare) site formerly contained a fertilizer and pesticide mixing and retail operation. Equipment and structures related to the operation have been removed, except for one metal warehouse building.

Buried waste and spillage of materials contributed to the contamination of the site soils and groundwater. Investigations identified that DDT, toxaphene, and nitrates are contaminating soils beneath the site. Elevated levels of nitrates and arsenic were detected in groundwater. Buried waste and contaminated surface and subsurface soils were excavated and disposed of off the

site, and the surface impoundment was closed. The site is reported to have been remediated to conditions appropriate for industrial/commercial use. A groundwater pilot study involving phytoremediation was conducted and determined to be ineffective for the site. As of 2007, additional groundwater investigations have been conducted to assess the health risks of the site groundwater.

Santa Fe Railway Property–Wasco (site 91, Table 5-1; Figure 5-1). The BNSF Alternative adjacent to the site. DTSC is the lead agency. Soils beneath the site were reportedly contaminated by releases of DDT and metabolites as a result of agribusiness operations between 1954 and 1963. Approximately 10,000 cubic yards (7,646 cubic meters) of soil contaminated by DDT, DDD, and DDE were excavated and disposed of off the site. The site was divided into a consolidation area with limited future use and an unrestricted use area. A "Covenant to Limit Use of Property" recorded by the Kern County Recorder's Office limits use of a 140-foot by 220-foot (42.7-meter by 67.1-meter) portion of the property to industrial or commercial use.

Brown and Bryant–Shafter Facility (site 98, Table 5-1; Figure 5-1). The BNSF Alternative passes adjacent to the west side of the site. Agricultural chemicals are reported to contaminate surface and subsurface soils and soil gas beneath the site. DTSC is the lead agency. The approximately 15-acre (6.1 hectare) site was used until December 1989 to blend and repackage liquid fertilizers, insecticides, herbicides, fumigants, and defoliants. DTSC requested Santa Fe (landowner of 1/3 of the site) to extend the west site fenceline farther west to prevent public exposure of offsite soil contamination. U.S. EPA subsequently issued a 106 Order to Santa Fe requiring the company to assess the site and develop plans to stabilize and winterize the site to prevent further public exposure potential. During two phases of remedial investigations conducted in 1995 and 1997, subsurface soil and soil gas contamination was discovered at depths of over 200 feet (61 meters). A draft Remedial Action Plan for the site was published in September 2008. Reportedly, a baseline risk assessment is being finalized and a work plan for the Remedial Action Plan is being prepared. Numerous additional agency violations exist at the site.

Burlington Northern and Santa Fe Railway (site 99, Table 5-1; Figure 5-1). The BNSF site is associated and co-joined with the Brown and Bryant facility noted above. BNSF owns a portion of the Brown and Bryant site; no violations were noted.

5.4.3 Segment D: Bakersfield

The alternative alignments in this corridor pass through areas that have been in commercial or industrial use since the late 1800s, or earlier, including active refineries with a history of impacted soil and groundwater.

Tosco Corporation–Bakersfield Refinery (site 102, Table 5-1; Figure 5-1). Both the BNSF Alternative and the Bakersfield South Alternative pass through this site. Tosco operated a crude oil refinery at this site. This facility is immediately adjacent to the Texaco Refinery (see below). The facility has not been operational for several years. Wastes generated from the refinery were either buried on the site or discharged to four unlined disposal ponds.

Discharges to the disposal ponds include flare pit condensate, tank farm condensate, process area drains, coke scrubber blowdown, boiler blowdown, and cooling tower blowdown; dilute spent caustic, hydrocracker, and phenolic sour water; desalter water; classifier water; and tank farm drains. Chemicals associated with these discharges include phenols, hexavalent and trivalent chromium, sulfides, cyanides, chlorides, and oil. The RWQCB investigations have also documented the presence of benzene and toluene in groundwater beneath the facility.

The RWQCB is continuing its efforts to characterize contamination from the facility. The RWQCB has determined that plume migration has been controlled at the site. This determination will be re-evaluated when the RWQCB becomes aware of significant changes at the facility. The most-current report available for the site is dated January 19, 2010.

Texaco Refinery (site 103, Table 5-1; Figure 5-1). Both the BNSF Alternative and the Bakersfield South Alternative pass through this site. The facility is immediately adjacent to the Tosco Refinery. The RWQCB is the lead agency. 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.

Wastes generated from the refinery have been buried on the site or discharged to a disposal pond. Spillage and leakage have also been observed during inspections. Extensive work has been performed, and Texaco agreed to complete the contamination assessment. As of May 28, 2009, remediation is ongoing. The facility has numerous outstanding agency (DTSC) violations including Generators–General, LDR–General; Treatment, Storage, Disposal–General.

The potential severity of impacts from releases of hazardous wastes or materials at the NPL, EnviroStor, and SWLF sites on the construction, operation, and maintenance of the Fresno to Bakersfield Section of the California HST system alternative alignments is discussed further in Section 6.2.

5.5 General Environmental Concerns

General environmental concerns include lead-based paint, ACMs, pesticides, PCBs, ADL, and NOA.

5.5.1 Lead-Based Paint

URS did not conduct a survey for LBP as part of the baseline assessment, but during the site reconnaissance of the 39 sites, URS observed paint conditions at the sites where structures are present.

LBP is recognized as a potential health risk because of the known toxic effects of lead exposure on the central nervous system, kidneys, and blood stream. Lead exposure occurs primarily through the ingestion of LBP. Concern for LBP is primarily related to residential structures, though the concern may also apply to commercial structures. The risk of lead toxicity in LBP varies according to the condition of the paint and the year of its application. The risk of lead toxicity in LBP varies based on the condition of the paint and the year of its application. The U.S. Department of Housing and Urban Development (HUD) has identified the following risk factors:

- Age of the paint on a residential structure.
  - The maximum risk is from paint applied before 1950.
  - There is severe risk from paint applied before 1960.
  - There is moderate risk from deteriorated paint applied before 1970.
  - There is a slight risk from paint that is intact but applied before 1977.
  - Paint applied in 1977, or later, is not expected to contain lead.

- The condition of the painted surfaces.
- The presence of children and certain types of household goods in the building.
- Previously reported cases of lead poisoning in the building or area.

The U.S. Department of Housing and Urban Development has defined LBP as any paint that contains more than 0.5% lead by weight.

Besides the locations visited during the site reconnaissance, URS observed many other structures along the alternative alignments that may have been constructed before 1970 and where LBP may be present. Also, residue from the removal of yellow thermoplastic and yellow-painted traffic stripes and pavement markings may contain lead chromate, according to Caltrans Standard Special Provision 14-001 (Caltrans 2009). The paint that URS observed during the site visits ranged from good condition (i.e., no peeling, flaking, or cracking) to poor and deteriorating condition.

5.5.2 Asbestos-Containing Materials

URS did not conduct an asbestos survey as part of the baseline assessment; however, during the site reconnaissance URS undertook a preliminary visual asbestos assessment at all locations visited that contained structures. This preliminary visual asbestos assessment included observations regarding the types of building materials present and the potential for those materials to contain asbestos (based on the building construction date). Also, multiple roadway and railroad overcrossing structures are present along the corridor, and these structures may contain asbestos.

Although the use of asbestos in the manufacture of most building materials has not been fully prohibited by federal law, the use of asbestos in building materials has for the most part been discontinued since the late 1970s. Thus, depending on the date of construction, many of the structures along the alternative alignments, including concrete bridge abutments, may have been built with structural and building materials that contain asbestos. At the sites with structures where URS performed site reconnaissance, the interior building materials that could be ACMs included floor tiles and mastic; wallboard and joint compound; wall, ceiling, and pipe insulation; and acoustic ceiling panels. Exterior building materials included transite siding, roofing materials, window sealants, patching material, concrete bridge construction materials, and transite pipe.

5.5.3 Pesticides

Historical aerial photographs and topographic maps document the existence of agricultural development near the proposed alignments that dates back to at least 1937. Therefore, the use of agricultural chemicals, such as pesticides, is highly likely to have occurred in the vicinity of the proposed alternative alignments, and this use represents a PEC for the project alignments. A pesticide is any substance or mixture of substances that is intended to prevent the presence of, destroy, repel, or mitigate any pest. The term pesticide applies to insecticides, and various other substances used to control pests, including herbicides. Examples of the health risks posed by pesticides include cancer, nervous system damage, hormone or endocrine disruption, and eye or skin irritation. Any current or former agricultural lands or landscapes adjacent to or within the study area may have been subject to regular applications of fertilizers, pesticides, or other chemicals for maintenance. However, given the product testing performed by the EPA prior to commercial use and the subsequent regulation of product application by various agencies, routine application of these materials would not generally accumulate to levels sufficient to cause concern.

URS staff observed aerial spraying of agricultural chemicals on sites adjacent to the study area while performing the baseline assessment. These adjacent sites contained vineyards, orchards, or other crops. The direct application of these chemicals was not observed at any of the sites; however, agricultural chemicals are manufactured and/or stored at several of the sites that URS visited. 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.

5.5.4 Polychlorinated Biphenyls

Electrical transformers, hydraulic equipment, capacitors, and similar equipment may contain PCBs in hydraulic or dielectric insulating fluids within the units. The federal TSCA has generally prohibited the domestic manufacture of PCBs since 1976; therefore, only equipment manufactured before 1976 has the potential to contain PCBs.

During the site visits, URS observed pad-mounted transformers, pole-mounted transformers, underground transformers, stationary hydraulic equipment, mobile hydraulic equipment, and drums of new and used hydraulic fluid stored at multiple locations in the study area. The age of the equipment was not obvious, but several units appeared to be of vintage design. URS observed a very limited number of the transformers in the study area during the site reconnaissance. None of the transformers observed had any discernible leaks. None of the units observed were labeled as containing PCBs.

No information was readily available to assess whether the ballasts in the interior fluorescent lighting of the structures in the study area had recently been changed. Also, no information was available about the disposal of ballasts; however, given the dates of construction of the older buildings, it is possible that some of the ballasts contain PCBs. At the structures where URS was granted access, no signs of leaking or damaged ballasts were observed.

5.5.5 Aerially Deposited Lead

Historical aerial photographs and topographic maps document the existence of multiple roadways that date back to at least 1937 in the vicinity of the proposed alignments. Areas around freeways, highways, and major thoroughfares have the potential to be affected by ADL from vehicular emissions. In the more-urbanized highway corridors in California, exposed soils have been found to be contaminated with lead, primarily as a result of historical emissions from automobile exhausts. Results of in-situ sampling and laboratory testing from other unrelated projects have shown that some of the soil contains concentrations of lead in excess of state regulatory thresholds, and thus any waste generated from the disturbance of soil in these locations would be regulated as a hazardous waste (DTSC 2005). Because SR 99 (formerly U.S. Highway 99), SR 43, and multiple city and county roads have existed for decades in areas adjacent to the alternative alignments in the study area, soil in the immediate vicinity of the alignments is likely contaminated with ADL, and the alignment grade crossings may be contaminated as well.

5.5.6 Naturally Occurring Asbestos

NOA is found in serpentine rock and is a potential contamination issue. NOA is a fibrous mineral that often takes the form of long, thin fibers; however, NOA can degrade from weathering or excavation activities into microscopic fibers and become airborne. If NOA does not become airborne, it does not pose a threat, but when suspended in the air and inhaled, the thin fibers can irritate tissues and resist the body's natural defenses.

The study area is approximately 30 miles (48 kilometers) west of the nearest known ultramafic rock outcroppings (California Department of Conservation 2000). Therefore, NOA is not considered a substantial concern for the alternative alignments in the Fresno to Bakersfield Corridor.

5.5.7 Landfills

Landfills within 0.25 mile of the study area were analyzed for their potential to release methane gas, which may present an explosion risk (Table 5-3). These sites include historical burn dumps,

closed landfills, and an active municipal landfill. Typically, old burn dumps pose a limited landfill gas risk, because the organic material that would normally decompose to form methane has been burned and cannot further decompose. However, the risk would vary based on the degree to which each site was burned; whether additional waste was placed (legally or illegally); and whether the waste was burned before landfill gas had the chance to be generated. Under current regulations, all operating and most closed landfills are required to have landfill gas migration control systems and monitoring programs. Additionally, most active and many closed landfills have landfill gas capture and treatment/destruction systems. Therefore, the likelihood of methane landfill gas impacting an area beyond the landfill property is low.

The BNSF Alternative contacts a portion of the Chestnut Avenue Sanitary Landfill; the footprint for the Kings County–Hanford HMF Site contacts a portion of the Hanford Inert Landfill; and the grade crossing near Hanford contacts a portion of the Hanford Municipal Disposal Site. None of these three sites has active remediation cases or violations on record. California Code of Regulations, Title 27, Division 2, Chapter 3, Subchapter 5, Closure and Post Closure Maintenance of Landfills provides post closure maintenance guidelines; regulates post closure land use requiring protection of public health and safety and the built environment; as well as the prevention of gas explosions. Construction on the site must maintain the integrity of the final cover, drainage and erosion control systems, and gas monitoring and control systems. All post-closure land use within 1,000 feet of a landfill site must be approved by the local enforcement agency.

5.5.8 Oil and Gas Wells

The Fresno to Bakersfield Section of the HST passes through Division of Oil, Gas, and Geothermal Resources (DOGGR) District 4 and District 5. As of 2009, Kern County in District 4 was California's top oil-producing county, with 81% of the state's 52,144 active oil wells, or about 42,236 active producing wells. By comparison, Fresno, Kings and Tulare counties have a total of 2,179 active oil wells as of 2009 (DOGGR 2009). In addition there are thousands of inactive and abandoned wells in these four counties. These active and inactive oil wells are mostly in Kern County. The BNSF Alternative and the Bakersfield South Alternative also pass through two active oil refinery properties, and traverse multiple oil and natural gas pipelines.

Locations of oils wells (both active and abandoned) were plotted from 2012 data obtained from DOGGR. The data showed a total of 56 oil and gas wells within 1/8 mile of the BNSF and alternative alignments as follows:

- BNSF 3 wells
- Allensworth Bypass 1 well
- Wasco-Shafter Bypass 8 wells
- Bakersfield North 16 wells
- Bakersfield South 7 wells
- Bakersfield Hybrid 21 wells

Of this total, only two active oil wells, one water injection well, and two abandoned wells occur within the project footprint, and a 50-foot buffer around the footprint. The wells are all in the Bakersfield metropolitan area, with one active well on the BNSF Alternative, and the others on the Bakersfield South Alternative. All work within 100 feet of an oil well site would be coordinated with the California Department of Conservation. Active wells would need to be capped and abandoned or relocated. Appurtenant facilities such pipelines would also potentially need to be relocated if they fall within the footprint. Contractors would use safe and explosion-proof equipment during project construction in areas where explosion hazards exist, and would test for gases regularly. In addition, a spill prevent plan would be in place and spill containment equipment would be at the site during removal of decommissioning of any wells.

Hazards associated with constructing and operating the HST near established oil and gas fields, oil and gas wells, pipelines and refineries primarily involves the release of hazardous gases, such as methane, carbon dioxide, and hydrogen sulfide.

5.6 Airports, Airstrips, and Heliports

Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace, in addition to providing navigable airspace criteria for airports, also provides imaginary surface criteria for heliports.

On the state level, the Caltrans Division of Aeronautics regulates the siting and operation of private-use airfields and heliports. The mission of Caltrans in aviation is to foster and promote the development of a safe, efficient, dependable, and environmentally compatible air transportation system. The state's regulation of aviation began in 1947 with the California Aeronautics Commission, which eventually became the Caltrans Division of Aeronautics. The State Aeronautics Act, Public Utilities Code Section 21001 et seq., is the foundation for Caltrans' aviation policies.

Aviation system planning provides for the integration of aviation into transportation system planning on a regional, statewide, and national basis. The Division of Aeronautics administers noise regulation and land use planning laws that foster compatible land use around airports and encourages environmental mitigation measures to lessen noise, air pollution, and other impacts caused by aviation.

Using the Geographic Names Information System database), URS identified 12 active public and private airports, airstrips, or heliports within 2 miles (3 kilometers) of the nearest centerline of the alternative alignments for the Fresno to Bakersfield Section of the HST system and only one located less than 0.1 mile (0.2 kilometer) from any alignment alternative (USGS 2010). The Federal Aviation Administration does not consider any of the 12 facilities to be a "Commercial Service—Primary Airport" (FAA 2010). One facility, Fresno-Chandler Downtown Airport, is listed as a "Reliever Airport." Three facilities, Hanford Municipal Airport, and Wasco Airport are listed as "General Aviation." Corcoran Airport is listed as a "Public-Use Airport." Three of the remaining facilities are private airstrips, and four are medical center/hospital heliports. One facility is a Pacific Gas and Electric Company service center heliport.

A list of these facilities and their respective approximate distances and directions from the centerline of the nearest alternative alignment is provided in Table 5-4. The locations of these facilities are shown on Figure 5-2.

5.7 Educational Facilities

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. Twenty-nine educational facilities (defined as colleges, high schools, elementary schools, preschools, or nursery schools) are within 0.25 mile of the construction footprint of three alignment alternatives, as shown in Table 5-5. Figure 5-3 shows the names and locations of these schools. Twenty-one educational facilities were identified within 0.25 mile of the BNSF Alternative. Four are identified within 0.25 mile of the Hanford West Bypass Alternatives. Fourteen of these are within 0.25 mile of the Bakersfield South Alternative and twelve are within 0.25 mile of the Bakersfield Hybrid Alternative. No schools are in proximity to any of the HMF alternative sites.

5.8 Wildlands

Based on statewide fire hazard severity zone (FHSZ) maps available from the California Department of Forestry and Fire Protection, no portions of the study area for the Fresno to Bakersfield Corridor are in areas that are generally subject to impacts from wildland fire (CalFire 2007). Parcels of land that were historically developed but are now vacant or fallow farmland were not considered to be “wildlands” for the purpose of this report. Relatively infrequent grass fires have occurred during the dry season on small parcels in the study area, so the placement of structures in fire-prone areas requires special consideration (CalFire 2007) (Figure 5-4).

Chapter 6
Hazardous Waste/Material Impacts and Mitigation Measures

6.0 Hazardous Waste/Material Impacts and Mitigation Measures

This section discusses the impact analysis and mitigation strategies; the construction phase impacts from existing PECs; the use, storage, and handling of hazardous materials during the construction phase; impacts on and mitigation for airports, airfields, and heliports; potential impacts on and mitigation for educational facilities; and hazardous waste generation.

6.1 Impact Analysis and Mitigation Strategies

The methodology for this impact analysis incorporates the hazardous materials site screening protocols from FRA's *CREATE Railroad Property Special Waste Procedures* (FRA 2006) and Caltrans' initial site assessment guidance document (Caltrans 2006b).

Impacts related to hazardous wastes and hazardous materials are generally analyzed qualitatively by considering the proximity of features (PEC sites, airports, and wildland areas) and operations (routine and upset hazardous materials transport, use, and disposal) in relation to the project alternatives. The analysis considers how the proximity and conditions of these features would potentially affect the construction and operation of project alternative alignments.

The analysis is generally divided into two subject areas: potential impacts associated with hazardous wastes and materials (i.e., PEC) sites and potential impacts associated with other hazards, as described in the CEQA Guidelines Appendix G Section VII Hazards and Hazardous Materials. The methodology used in this report combines objective information (e.g., locations of hazardous materials sites, airports) with qualitative hazard assessment and applies professional judgment to consider whether impacts would result.

Consistent with the mitigation strategies prepared for the Statewide Program EIR/EIS for the California High-Speed Train System, this analysis assumes a commitment to use both design practices that minimize impacts and best practices and mitigation strategies that substantially lessen or avoid impacts associated with hazardous wastes or materials. Program-level mitigation strategies from the Statewide Program EIR/EIS include:

- Investigation of soils for contamination and preparation of environmental site assessments (ESAs) when necessary.
- Preparation of a survey for LBP and ACMs before demolition of buildings or structures for project construction.
- Acquisition of necessary permits if ground dewatering is required (e.g., dewatering during excavation, trenching, or tunneling).
- Completion of Phase II environmental site assessments (ESAs) (e.g., a hydrogeologic investigation) to identify specific mitigation measures when indicated by project-level ESAs. Completion of Phase II ESAs in conformance with the *Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process* (ASTM 2001).
- Preparation of a site management program/contingency plan before construction to address known and potential hazardous material issues.
- Measures to address management of contaminated soil and groundwater, including:
  - A site-specific health and safety plan, including measures to protect construction workers and the general public.

- Procedures to protect workers and the general public in the event that unknown contamination or buried hazards are encountered.
- Where appropriate, more-detailed mitigation, or alternate methods more applicable to the proposed alignment, to be identified based on project-level analysis.

6.1.1 Environmental Consequences

Both the nature and severity of the potential impacts and the possibility of avoiding the impacts by modifying the project alternatives or by using best practices were assessed for the selected PEC sites (including airports, airstrips, and heliports) and educational facilities identified during the baseline assessment, using the protocol listed in Table 6-1.

6.1.2 Mitigation

As defined in the *California High-Speed Train Project-Level Environmental Impact Report/Environmental Impact Statement, Project-Level Environmental Analysis Methodologies* (Version 2), the Fresno to Bakersfield HST Section environmental team will assess the need for mitigation for all adverse impacts by performing one or more of the following (Authority 2009):

- Review the mitigation strategies described in the CEQA Findings of Fact (November 2005) and the ROD (November 2005) for the Statewide Program EIR/EIS and develop project-level measures consistent with strategies to avoid or minimize impacts. Also review the hazardous waste/material technical documents and environmental document sections for the Bay Area to Central Valley EIR/EIS (Authority and FRA 2008).
- Identify mitigation measures for avoidance and minimization of impacts and incorporate into project designs to reduce impacts.
- Develop a mitigation monitoring and reporting plan for both construction and operation of the California HST System that addresses identification of hazardous materials and mitigation measures.

Project impacts and mitigation measures are assessed in Section 6.3.

6.1.3 Cumulative Impacts

The Fresno to Bakersfield Section environmental team assessed the potential for cumulative impacts using Caltrans' cumulative impact analysis guidance document, which is applicable to non-highway projects, and by performing the following steps to identify and assess cumulative impacts (Caltrans 2005):

- Determine if a cumulative impact analysis will be required for hazards and hazardous materials.
- Define the geographic boundary of the study area to be addressed in the cumulative impact analysis.
- Determine the method for cumulative impact analysis.
- Prepare a list of past, present, and reasonably foreseeable projects to include in the cumulative impact analysis (if using the project list method) or appropriate plan(s) (if using the plan method).
- Describe the current health and the historical context of each resource.

- Identify the cumulative impacts.
- Identify mitigation.
- Document the results. (The section environmental team cumulative lead will describe the reasonably foreseeable actions considered in the cumulative impact analysis as part of the cumulative impacts section of the EIR/EIS).

Cumulative impacts and mitigation measures are summarized in Section 6.4.

6.2 Overview of Impacts from Existing PECs

The potential severity of the impacts from hazardous waste/material releases from existing PEC sites on the construction, operation, and maintenance of the proposed California HST System alternative alignments would depend on two factors: the nature and severity of the contamination and the construction, operation, and maintenance activities that would likely occur near the PEC sites.

The PEC sites that pose the greatest concern are those with soil or groundwater contamination in or adjacent to the HST rights-of-way or those where the HST right-of-way is adjacent to freeway and highway rights-of-way so that ADL may be a concern. Also, PEC sites with groundwater contamination near areas where excavation will be necessary would be of concern, although impacts would be unlikely because the depth to groundwater is greater than 100 feet (30.5 meters) below ground surface along most of the Fresno to Bakersfield alternative alignments.

PEC sites with groundwater contamination would be of concern because dewatering during excavation, trenching, or tunneling could alter local subsurface hydraulic gradients and draw groundwater contamination into excavated areas, trenches, or tunnels. Also, fuel or chemical vapors could move through the vadose zone to excavated areas (during construction) or to underground structures associated with the rail line, such as vaults and manholes (during project operation). These impacts could occur near contaminated sites, depending on the nature and extent of the contamination.

The cleanup or remediation associated with the presence of a hazardous waste/material site in the study area could result in additional construction costs. These additional costs could make a major difference in the practicality or feasibility of an alternative. Generally, remediation of a given site is negotiated during property acquisition and remediation is conducted by the property owner prior to transfer of the property.

Most of the California HST System alternative alignments would be within existing rights-of-way, and because of this land-use history, additional unknown contamination from spills, accidental releases, and so on, would be possible. Consequently, some unavoidable hazardous waste and hazardous material impacts are expected under the alternative alignments.

This impact analysis assumes that impacts related to exposure to hazardous wastes or hazardous materials could occur during project construction, project operation, or both. The project-level comparison of alternatives in this analysis assesses the relative degree to which sites known to contain hazardous wastes or hazardous materials could constrain the alternatives by requiring costly disposal conditions and site cleanup and remediation. The number of such sites gives some indication of the overall level of potential impact; more sites generally imply more potential impacts. In this analysis, each type of listing (i.e., NPL, EnviroStor, and SWLF) was given equal weight. Table 6-2 lists the number of NPL, EnviroStor, and SWLF hazardous waste/material sites sorted by occurrence in the alignment segments.

This site-count, project-level impact analysis does not provide a detailed assessment of the nature or extent of any hazardous wastes or hazardous materials that may be present at the identified sites. Nor does this analysis specify the degree or specific nature of the potential impacts under the various alignment alternatives. However, the analysis results are useful for comparing alternatives and identifying areas where avoidance may be possible.

6.3 Project Impacts and Mitigation Assessment

Potential impacts are assessed in this subsection. The regulations for hazardous wastes and materials that are most relevant to the proposed project are summarized in Chapter 3.

6.3.1 Impact 1: Potential Impacts related to Routine Transport, Use, or Disposal of Hazardous Materials and Hazardous Wastes

Hazardous materials will be used in construction, operation, and maintenance of the HST and a certain amount of waste will be generated during construction and operation.

Hazardous materials are substances that are flammable or combustible, explosive, toxic, noxious, corrosive, or radioactive, or are oxidizers or irritants. Potentially hazardous materials are commonly used in railway construction, operation, or maintenance and are therefore transported to or from the respective alignment alternatives, station locations, or maintenance facilities; they include, but are not limited to, the following types of materials:

- Acids and caustics.
- Compressed gases.
- Caulking.
- Adhesives and glues.
- Degreasers.
- Refrigerants.
- Oils and lubricants.
- Batteries and battery acid.
- Fuels and additives.
- Herbicides and pesticides.
- Wood preservatives.
- Paints, varnishes, and shellacs.
- Paint strippers.
- Solvents and thinners.
- Mineral spirits.

The anticipated quantity usage and storage volumes have not been calculated. It is intended as a guideline, not a comprehensive list of all materials that would be transported, stored, or used in or around HST railway construction and operations (FRA 2010). Materials that are likely to be stored in quantities greater than 5-gallon (19-liter) containers include fuels, oils and lubricants, antifreeze, and some solvents.

The use of hazardous materials would increase in the project vicinity during the construction and operation phases of the HST system. The increased use of hazardous materials could, in turn, result in an incremental increased in hazardous waste generation. Additionally, hazardous waste generation would likely occur during excavation or other activities that result in currently in-situ contaminated media becoming waste after the property acquisition phase or during construction; however, it is likely that only a small portion of the material encountered at these sites will be characterized as hazardous waste. This waste generation may include soil or groundwater contaminated by petroleum hydrocarbons, pesticides, herbicides, asbestos, heavy metals or other hazardous materials. Waste generation may also include demolition materials that contain friable or non-friable asbestos and/or lead.

Proper hazardous waste disposal, regardless of the method selected, often affects the environment. Waste management strategies that seek to prevent pollution by reducing waste generation at its source are considered the most desirable approach. The Pollution Prevention Act of 1990 established pollution prevention as a national objective. This priority should be reflected in the goals of waste minimization for

the HST system, thereby reducing the quantity of hazardous wastes that needs to be transported (U.S. EPA 1990). The estimated waste generated during the construction and operation phases of the HST is provided in Table 6-3.

6.3.1.1 Impact 1 Analysis: No Project Alternative

The No Project Alternative represents the state's transportation system (highway, air, and conventional rail) as it existed from 1999 to 2000, and its status after programs or projects currently programmed for implementation are completed, and after completion of projects that are expected to be funded by 2020. The No Project Alternative addresses the geographic area serving the same intercity travel market as the proposed high-speed train (generally from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego). The No Project Alternative satisfies the statutory requirements under CEQA and NEPA for an alternative that does not include any new action or project beyond what is already committed (Authority and FRA 2008).

The No Project Alternative assumes that other entities would complete projects including improvements to local, state, and interstate transportation systems and airports designated in existing plans and programs. It is assumed that no additional hazardous-waste- or hazardous-material-related impacts would occur beyond those addressed in the environmental documents for currently programmed projects or for those that are expected to be funded by 2030. The assumption has also been made that any hazardous waste/material impacts would be mitigated as part of those projects (Authority and FRA 2008). Therefore, the No Project Alternative is assumed to have no hazardous waste/material impacts.

6.3.1.2 Impact 1 Analysis: BNSF and Corcoran Elevated Alternatives

Hazardous materials present no substantial hazard to the community when properly handled, transported, and stored according to the manufacturers' guidelines and regulatory agency rules and regulations.

Demolition of existing structures within the project right-of-way would likely require the transportation of ACMs, LBP, and, potentially, other chemical wastes, such as PCBs, from the project site to appropriate disposal sites. Additionally, before the construction of project facilities at the existing PEC sites discussed in Section 6.2.1, remediation (i.e., cleanup) of contaminated soil would generate hazardous waste for shipping to appropriate offsite disposal facilities. Furthermore, remediation of soil contaminated by ADL along freeways, highways, and major thoroughfares in more-urbanized corridors would generate soil classified as hazardous waste for shipping to offsite disposal facilities. The transport of these hazardous wastes would be subject to state and federal regulations regarding the transportation of hazardous materials. Compliance with existing regulations would protect the public from exposure to substantial hazards.

SR 99, SR 43, SR 198, and the BNSF and Union Pacific rail corridors are the major transportation corridors that would be used for transporting hazardous materials and/or wastes associated with the proposed project. The transport of hazardous materials and wastes is regulated by federal agencies through the Hazardous Materials Transportation Act (HMTA) (U.S. EPA 1975), which regulates the transport of hazardous materials by motor vehicles. Caltrans and other state agencies effect regulation through the Hazardous Waste Control Act (DTSC 1997), which regulates the identification, generation, transportation, storage, and disposal of materials deemed hazardous by the State of California. Additionally, the Fresno County, Kings County, Tulare County, and Kern County CUPAs provide for the proper management of all hazardous waste in the respective counties (see Section 3.3).

Enforcement of the HMTA is shared by each of the following administrations under delegations from the Secretary of the U.S. Department of Transportation (DOT):

- Research and Special Programs Administration is responsible for container manufacturers, reconditioners, and retesters and shares authority over shippers of hazardous materials.

- Federal Highway Administration (FHWA) enforces all regulations pertaining to motor carriers.
- FRA enforces all regulations pertaining to rail carriers.
- Federal Aviation Administration (FAA) enforces all regulations pertaining to air carriers.
- Coast Guard enforces all regulations pertaining to shipments by water.

Hazardous materials regulations are subdivided by function into four basic areas:

- Procedures and/or Policies 49 CFR Parts 101, 106, and 107.
- Material Designations 49 CFR Part 172.
- Packaging Requirements 49 CFR Parts 173, 178, 179, and 180.
- Operational Rules 49 CFR Parts 171, 173, 174, 175, 176, and 177.

The Hazardous Materials Table (49 CFR Part 172.101) designates specific materials as hazardous for the purpose of transportation. It also classifies each material and specifies requirements pertaining to its packaging, labeling, and transportation. Hazard communication consists of documentation and identification of packaging and vehicles. This information is communicated in the following formats:

- Shipping papers (Part 172, Subpart C).
- Package marking (Part 172, Subpart D).
- Package labeling (Part 172, Subpart E).
- Vehicle placarding (Part 172, Subpart F).

Final regulations implementing the HMTA statute may be found in Title 49 of the CFR. Parts 101, 106, 107, and 171–180 contain regulations important to the U.S. Department of Energy.

The State of California has adopted DOT regulations for the intrastate movement of hazardous materials. In addition, the State of California regulates the transportation of hazardous waste originating in and passing through the state. The regulations that govern these activities are in Title 26 of the CCR. Federal and state regulatory programs apply in California. The two state agencies with primary responsibility for enforcing federal and state hazardous materials transportation regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and Caltrans. CHP enforces hazardous material and hazardous waste labeling and packing regulations to prevent leakage and spills of material in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are the responsibility of CHP, which conducts regular inspections of licensed transporters to ensure regulatory compliance. Caltrans oversees emergency chemical spill identification teams at as many as 72 locations throughout the state that can respond quickly in the event of a spill.

CHP licenses common carriers pursuant to California Vehicle Code Section 32000. This section requires the licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds (227 kilograms) of hazardous materials at one time, and every carrier, if not for hire, who carries more than 1,000 pounds (454 kilograms) of hazardous material of the type requiring placards. Every hazardous material package type used by a hazardous materials shipper must undergo tests that imitate some of the possible rigors of travel. Every package is not put through every test. However, most packages must be able to be remain intact under running water for a time without leaking; be able to be dropped, fully loaded, onto a concrete floor; be compressed from both sides for a period of time; be subjected to low and high pressure; and be frozen and heated alternately.

Additionally, the DOT has developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. These regulations specify packaging requirements for different types of materials. The U.S. Postal Service has developed additional regulations for the transport of hazardous materials by mail. U.S. EPA has also promulgated regulations for the transport of hazardous wastes. These regulations apply only to designated hazardous waste and not to hazardous commodities unless they are spilled and become wastes. These more-stringent requirements include tracking

shipments with manifests to ensure that wastes are delivered to their intended destinations. In California, CHP, Caltrans, and DTSC play a role in enforcing hazardous materials transportation requirements. These measures ensure that construction workers, the general public, and the environment are not exposed to substantial hazards.

Through adherence to these existing laws and regulations, impacts with regards to the routine transport, use, or disposal of hazardous materials and wastes would not be substantial and no mitigation would be needed.

6.3.1.3 Impact 1 Analysis: West Hanford Bypass Alternative

There are no features or conditions associated with the West Hanford Bypass Alternative that increase the likelihood of hazardous conditions with respect to the routine transport, use, or disposal of hazardous materials. Therefore, hazard conditions for the West Hanford Bypass Alternative are consistent with the hazard conditions for the BNSF Alternative with respect to the routine transport, use, or disposal of hazardous materials.

Through adherence to existing laws and regulations, impacts with regards to the routine transport, use, or disposal of hazardous materials and wastes would not be substantial

6.3.1.4 Impact 1 Analysis: Corcoran Bypass Alternative

Alternative alignments through rural and agricultural areas have less potential to encounter hazardous wastes or materials as compared with alignment alternatives in more-urban areas. However, there is increased potential for pesticide contamination if the area is developed predominately for agricultural and the potential for ADL contamination if the respective alignment is parallel to a freeway or highway. Therefore, hazard conditions for the Corcoran Bypass Alternative are consistent with hazard conditions for the BNSF Alternative with respect to the routine transport, use, or disposal of hazardous materials.

Through adherence to existing laws and regulations, impacts with regards to the routine transport, use, or disposal of hazardous materials and wastes would not be substantial.

6.3.1.5 Impact 1 Analysis: Allensworth Bypass Alternative

There are no features or conditions associated with the Allensworth Bypass Alternative that increase the likelihood of hazardous conditions with respect to the routine transport, use, or disposal of hazardous materials. Therefore, hazard conditions for the Allensworth Bypass Alternative are consistent with hazard conditions for the BNSF Alternative with respect to the routine transport, use, or disposal of hazardous materials, and impacts would not be substantial.

Through adherence to existing laws and regulations, impacts with regards to the routine transport, use, or disposal of hazardous materials and wastes would not be substantial.

6.3.1.6 Impact 1 Analysis: Wasco-Shafter Bypass Alternative

There are no features or conditions associated with the Wasco-Shafter Bypass Alternative that increase the likelihood of hazardous conditions with respect to the routine transport, use, or disposal of hazardous materials. Therefore, hazard conditions for the Wasco-Shafter Bypass Alternative are consistent with the hazard conditions for the BNSF Alternative with respect to the routine transport, use, or disposal of hazardous materials.

Through adherence to existing laws and regulations, impacts with regards to the routine transport, use, or disposal of hazardous materials and wastes would not be substantial.

6.3.1.7 Impact 1 Analysis: Bakersfield South Alternative

The Bakersfield South Alternative closely parallels the BNSF Alternative. The access, egress, and transportation corridors used to service the Bakersfield South Alternative are the same as for the BNSF Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to the routine transport, use, or disposal of hazardous materials are analogous.

Through adherence to existing laws and regulations, impacts with regards to the routine transport, use, or disposal of hazardous materials and wastes would not be substantial.

6.3.1.8 Impact 1 Analysis: Bakersfield hybrid Alternative

The Bakersfield Hybrid Alternative closely parallels the Bakersfield South Alternative. The access, egress, and transportation corridors used to service the Bakersfield Hybrid Alternative are the same as for the Bakersfield South Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to the routine transport, use, or disposal of hazardous materials are analogous.

Through adherence to existing laws and regulations, impacts with regards to the routine transport, use, or disposal of hazardous materials and wastes would not be substantial.

6.3.2 Impact 2: Potential Impacts related to Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment

Hazardous materials are substances that are flammable or combustible, explosive, toxic, noxious, corrosive, or radioactive, or are oxidizers or irritants. A hazardous material spill or release can pose a risk to life, health or property. An incident can result in the evacuation of a few people, a section of a construction operation, or an entire construction site.

A number of federal laws regulate hazardous materials, including Title III of SARA, RCRA, HMTA, the Occupational Safety and Health Act, TSCA, and the Clean Air Act. Title III of SARA regulates the packaging, labeling, handling, storage, and transportation of hazardous materials. The law requires facilities to furnish information about the quantities and health effects of materials used at the facility, and to promptly notify local and state officials whenever a significant release of hazardous materials occurs (FEMA 2010).

Aside from accidents possibly occurring on job sites involving workers or observers, offsite accidents during hazardous materials/waste transport to or from the job sites could expose individuals and the environment to risks at some distance from the project site. Although transportation accidents are infrequent, accidents could occur during shipment of hazardous commodities (such as gasoline, diesel, or compressed gases) for construction and operation. Accidents could also occur during the transportation of hazardous waste materials generated during construction or during the cleanup of existing contaminated sites before construction prior to the property acquisition phases.

In the event of an onsite or offsite accident, collision, or derailment, hazardous materials/wastes may be released into the environment. In the case of some chemicals, toxic fumes may be carried away from the accident site. Fire and explosion are also a possibility. Although the state enforces standard accident and hazardous materials recovery training and procedures, which are followed by private state-licensed, certified, and bonded transportation companies and contractors, the project site's location along interstate rail and highway corridors creates a risk of exposure.

6.3.2.1 Impact 2 Analysis: No Project Alternative

If the No Project Alternative were chosen, there would be no incremental increase in impacts induced by the HST System construction or operation beyond those that already exist as a result of improvements to local, state, and interstate transportation systems and airports designated in existing plans and programs.

6.3.2.2 Impact 2 Analysis: BNSF and Corcoran Elevated Alternatives

The HST System project will not be transporting, storing, or disposing of hazardous materials in quantities greater than needed to support standard operation thereby minimizing potential exposure of the public, project work staff, and the environment.

However, releases or spills can occur from the improper storage of hazardous materials, improper handling of hazardous materials, negligence, train derailment, vehicle or rail collision or similar accidents, seismic activity, or inclement weather. Additional types of potential hazardous material releases along rail corridors can also include, but are not limited to, valve leakage or safety valve releases, which carry the potential of releasing hazardous material in the form of liquids or gases. The degree of impact from a hazardous-material-related release or spill is dependent on the proximity of the spill to population densities, concentrated development, and environmentally sensitive areas.

The pathways through which the community or the environment (e.g., local air quality, biota) could be exposed to hazardous materials include dermal contact, ingestion from air emissions and dust; inadvertent transport of hazardous materials from the release sites as a result of improper containment or decontamination procedures; or lack of containment during inclement weather, including stormwater runoff; and percolation into the soil substrate.

Planning for hazardous materials spills is essential. Before beginning work with hazardous substances, all individuals would have adequate training for cleaning up small spills, and the appropriate types and amounts of spill cleanup materials and personal protective equipment (PPE) will be immediately available. Hazardous material users will consult the material safety data sheet (MSDS) for the specific material they plan to work with and consider response options beforehand in case of a spill or release.

California Health and Safety Code Section 25503(c) mandates the establishment of an “area plan” for each county. The standards for area plans are codified in Title 19 of the CCR Sections 2720–2728. The county CUPA is responsible for implementing a unified hazardous materials and hazardous wastes management regulatory program in the respective county. Included in these programs are development of hazardous waste management plans and emergency service plans.

Federal agencies regulate the transport of hazardous materials/wastes by motor vehicles, and Caltrans and other state agencies regulate the identification, generation, transportation, storage, and disposal of materials deemed hazardous by the State of California through the Hazardous Waste Control Act. Additionally, the Fresno County, Kings County, Tulare County, and Kern County CUPAs provide for the proper management of all hazardous waste in the respective counties (see Section 3.3).

The guidelines and regulations for storing hazardous materials are extensive. Different quantities of materials have different requirements as do the individual materials being stored. Laws and regulations vary depending on the location and specific materials. Storage of hazardous material is generally regulated pursuant to the CCR Title 8 Section 5189 and Section 5192. All employers with hazardous chemicals in their workplaces must prepare and implement a written hazard communication program, ensure that all containers are labeled, provide employees with access to MSDSs, and conduct an effective training program for all potentially exposed persons pursuant to OSHA 29 CFR Section 1910.120.

Chapter 6.95 of the California Health and Safety Code requires any business handling or storing in excess of 55 gallons (210 liters) of liquid or 500 pounds (227 kilograms) of solid hazardous material or 200 cubic feet (5.66 cubic meters) of gas to submit hazardous materials management business plans. These plans

are to provide emergency responders with emergency contact information, site-specific chemical inventories, and vicinity as well as facility maps. Facilities storing materials that are “acutely” hazardous and in excess of the quantities in Title 19 of the CCR must submit a more comprehensive risk management plan, which includes offsite consequences analysis, maintenance, training programs, and an executive summary.

Avoidance and Minimization Measures

All facilities subject to regulation in general accordance with 40 CFR Part 112A must prepare a spill prevention, containment, and control (SPCC) plan. This 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. The intention behind the SPCC regulation is prevention as opposed to after-the-fact reactive measures commonly described in contingency plans.

In the event of an incident or accident that results in a leak, spill, or other type of release, site cleanup levels are regulated by federal and state mandates under guidance provided in the following:

- U.S. EPA Regional Screening Levels (RSLs).
- U.S. EPA Soil Screening Guidance (SSG).
- U.S. EPA Region 9 Preliminary Removal Goals.
- Federal Drinking Water Standards and Health Advisories.
- Risk Assessment Information System.
- From the California Environmental Protection Agency (Cal-EPA) website, http://www.oehha.ca.gov/water/phg/allphgs.html, the California Office of Environmental Health Hazard Assessment (OEHHA) presents public health goals for water, acute reference exposure levels (RELs) for air, chronic RELs for air. Also a link to Proposition 65 safe harbor levels is included.
- California Human Health Screening Levels for residential and industrial soil and soil gas.
- Section 5 and Appendix B of OEHHA’s "Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil" document contain soil and soil gas screening numbers.

CCR Title 22 Section 66261.20-24 contains technical descriptions of characteristics for classifying a hazardous waste. The use of hazardous materials and disposal of hazardous wastes are subject to numerous laws and regulations at all levels of government. Persons who generate, transport or offer to transport, treat, store, or dispose of hazardous waste generally must have an identification (ID) number, which is used to identify the hazardous waste handler and to track the waste from its point of origin to its final disposal (“from cradle to grave”) pursuant to the Hazardous Waste Control Act, California Health and Safety Code Section 25100 et seq.).

Most hazardous waste falls into two types in California: waste regulated by the federal government under the Resource Conservation and Recovery Act is known as "RCRA waste"; waste regulated by California law alone is known as "non-RCRA" or "California-only" waste. All hazardous waste (RCRA and non-RCRA) in California is regulated under state statutes and regulations. A business generating more than 1 kilogram of RCRA acutely hazardous waste per month or more than 100 kilograms of other RCRA waste per month must have a federal ID number. A business generating 100 kilograms, or less, of RCRA waste or 1 kilogram, or less, per month of acutely hazardous waste, and meeting certain other requirements, is exempt from having a federal ID number. This business is termed a “conditionally exempt small-quantity generator” or CESQG.

DTSC issues ID numbers for generators, transporters, and treatment, storage, and disposal facilities (TSDFs) that handle hazardous wastes not regulated under RCRA. As stated above, this status is determined by the type of waste that is generated and the rate at which it is generated. The U.S. EPA issues federal (RCRA) ID numbers.

The law requires that most hazardous waste be transported from hazardous waste generators to permitted recycling, or to TSDFs by registered hazardous waste transporters, and that each shipment be accompanied by a hazardous waste manifest. The manifest is the document that provides information for "cradle-to-grave" tracking of the hazardous waste.

These regulations act as a blueprint for reducing potential losses from natural and human-caused hazards. In addition, the general plans of the respective counties indicate that communitywide disaster-response plans will be designed to facilitate rescue and evacuation operations in the event of disasters, including those involving hazardous wastes. These measures would ensure that construction workers, the general public, and the environment are not exposed to a significant hazard.

Some or all of the following steps will help reduce the incidence and impacts of leaks and spills in the construction, operation, and maintenance phases of the HST project:

Worker Education

- Maintain awareness that different materials pollute in different amounts (i.e., liquid petroleum hydrocarbons versus powdered pesticides). Make sure that all employees know what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks through Hazardous Waste Operations and Emergency Response (HAZWOPER) training and project-specific health and safety plans.
- Hold regular meetings (daily or as needed) as required by the project-specific health and safety plan to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to train employees in spill prevention and cleanup.
- Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- To the extent that the work can be accomplished safely, contain and immediately clean up spills of oil, petroleum products, substances listed under 40 CFR Parts 110, 117, and 302, and sanitary and septic wastes.
- Store hazardous materials and wastes in covered containers with secondary spill and leak containment; protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Designate responsible individuals to oversee and enforce control measures.
- Cover spills and protect from stormwater run on during rainfall to the extent cleanup activities are not compromised.
- Do not bury or wash spills with water.

Semi-Significant Spills

- Control semi-significant spills with the aid of the first-responder and other personnel such as laborers and the foreman. This response may require the cessation of all other activities.

- Clean up spills immediately. Contain spread of the spill. Notify the project foreman immediately. If the spill occurs on paved or impermeable surfaces, clean up using "dry" method (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
- If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:

- The services of a spills contractor or a HazMat team will be obtained immediately. Construction, operations, or maintenance personnel should not attempt to clean up until the appropriate and qualified staff has arrived at the job site.
- Local emergency response will be notified by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
- Notification will be given first by telephone and followed up with a written report.
- The Governor's Office of Emergency Services Warning Center will be notified.
- The National Response Center for spills of federal reportable quantities will be notified by the contractor, in conformance with the requirements in 40 CFR Parts 110, 119, and 302.
- Other agencies will be notified as needed, including, but not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, California Occupational Safety and Health Administration (Cal-OSHA).

6.3.2.3 Impact 2 Analysis: West Hanford Bypass Alternative

There are no features or conditions associated with the West Hanford Bypass Alternative that increase the likelihood of hazardous conditions with respect to the routine transport, use, or disposal of hazardous materials. Therefore, hazard conditions for the West Hanford Bypass Alternative are consistent with the BNSF Alternative hazard conditions with respect to the hazardous materials released to the environment in the event of an accident or derailment.

Mitigation measures for the West Hanford Alternative are consistent with those for the BNSF Alternative.

6.3.2.4 Impact 2 Analysis: Corcoran Bypass Alternative

Alternative alignments through rural and agricultural areas have less potential to encounter hazardous wastes or materials as compared with alternative alignments in more-urban areas. However, there is increased potential for pesticide contamination if the area is developed predominately for agricultural purposes and potential for ADL contamination if the respective alignment is parallel to a freeway or highway. Therefore, hazard conditions for the Corcoran Bypass Alternative are consistent with the BNSF Alternative hazard conditions with respect to hazardous materials released to the environment in the event of an accident or derailment.

Mitigation measures for the Corcoran Bypass Alternative are consistent with those for the BNSF Alternative.

6.3.2.5 Impact 2 Analysis: Allensworth Bypass Alternative

There are no features or conditions associated with the Allensworth Bypass Alternative that increase the likelihood of hazardous conditions with respect to the routine transport, use, or disposal of hazardous materials. Therefore, hazard conditions for the Allensworth Bypass Alternative are consistent with the BNSF Alternative hazard conditions with respect to hazardous materials released to the environment in the event of an accident or derailment.

Mitigation measures for the Allensworth Bypass Alternative Alignment are consistent with those for the BNSF Alternative Alignment.

6.3.2.6 Impact 2 Analysis: Wasco-Shafter Bypass Alternative

There are no features or conditions associated with the Wasco-Shafter Bypass Alternative that increase the likelihood of hazardous conditions with respect to the routine transport, use, or disposal of hazardous materials. Therefore, hazard conditions for the Wasco-Shafter Bypass Alternative are consistent with the BNSF Alternative hazard conditions with respect to the hazardous materials released to the environment in the event of an accident or derailment.

Mitigation measures for the Wasco-Shafter Alternative are consistent with those for the BNSF Alternative.

6.3.2.7 Impact 2 Analysis: Bakersfield South Alternative

The Bakersfield South Alternative closely parallels the BNSF Alternative. The access, egress, and transportation corridors used to service the Bakersfield South Alternative are the same as those for the BNSF Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to hazardous materials released to the environment in the event of an accident or derailment are analogous.

Mitigation measures for the Bakersfield South Alternative are consistent with those for the BNSF Alternative.

6.3.2.8 Impact 2 Analysis: Bakersfield hybrid Alternative

The Bakersfield Hybrid Alternative closely parallels the Bakersfield South Alternative. The access, egress, and transportation corridors used to service the Bakersfield Hybrid Alternative are the same as those for the Bakersfield South Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to hazardous materials released to the environment in the event of an accident or derailment are analogous.

Mitigation measures for the Bakersfield Hybrid Alternative are consistent with those for the Bakersfield South Alternative.

6.3.3 Impact 3: Potential Impacts related to Construction near PEC Sites

Implementation of demolition or construction activities is expected to result in earthmoving or excavation activities in areas of known or potential soil and/or groundwater contamination. Sites with known or suspected contamination (e.g., PEC sites) would be investigated during right-of-way acquisition. Generally, PEC sites would be remediated by the property owner prior to acquisition of the property and construction on the site, depending on the arraignment negotiated during property acquisition. Construction of portions of the HST still may occur at or near PEC sites with ongoing remediation activities. Construction activities could encounter contaminants or interfere with the 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 such as soil containment areas. Construction could also increase the risk of damaging or interfering with groundwater remediation facilities such as extraction and monitoring wells, pumps, or pipelines. In addition, construction at sites with existing contamination could result in the generation of contaminated waste materials from the project. Impacts could include potential localized spread of contamination; exposure of construction workers and/or the public to chemical compounds in soils, soil gases, and groundwater; exposure of workers, the public, and the environment to airborne chemical compounds migrating from the demolition or construction areas; potential accidents during transportation of contaminated soils or groundwater; potential accidents during remediation as a result of operational failure of treatment systems; and potential interference with ongoing remediation activities.

Historical aerial photographs and topographic maps document the existence of agricultural development dating back to at least 1885 in the proximity of the proposed alignments. Therefore, the use of agricultural chemicals, such as pesticides and/or herbicides, is likely to have occurred in the vicinity of the proposed alignment alternatives and this use represents a PEC for the project alignments. The greatest likelihood for disturbance of residual agricultural chemicals is in rural areas, or areas along the alignment alternatives where agricultural chemicals were stored, mixed, or handled in association with crop application by various means including dusting operations.

Historical aerial photographs and topographic maps also document the existence of multiple highways and other roadways that date back to at least 1885 in the vicinity of the proposed alignments. Areas around freeways, highways, and major thoroughfares have the potential to be contaminated by ADL from vehicular emissions. ADL will most likely be encountered along SR 99 (former U.S. Highway 99), SR 43, and multiple well-used city and county roads.

6.3.3.1 Impact 3 Analysis: No Project Alternative

If the No Project Alternative were chosen, there would be no incremental increase in impacts induced by the HST System construction or operation beyond those that already exist as a result of improvements to local, state, and interstate transportation systems and airports designated in existing plans and programs. Thus impacts from the HST System project would not be substantial.

6.3.3.2 Impact 3 Analysis: BNSF and Corcoran Elevated Alternatives

As described above, construction on or near PEC sites could expose workers and the public to increased risk of exposure to hazardous materials, interfere with ongoing remediation activities, or result in the discovery of previously unknown contamination.

The project-related effects of hazardous-waste-containing chemical compounds would generally be limited to the immediate areas where the materials would be excavated, handled, and stored because exposure would most likely be in these areas. For this reason, the individuals most at risk would be the construction workers, operations personnel, or others in the immediate vicinity during excavation, transportation, or storage of the hazardous wastes, or during construction. The routes through which these individuals could be exposed include inhalation, ingestion, dermal contact, or injection.

Prevention and Mitigation Measures

Discovery of Previously Unknown Contamination

If previously unknown or uncharacterized soil and/or groundwater contamination is found to exist on the site during excavation and/or as a result of any assessment, work is to cease immediately in the contaminated area and a work plan to determine the lateral and vertical extent of the contamination will be developed. Once the extent of contamination has been assessed, a feasibility study to determine the appropriate type of remediation and a remedial action plan will be prepared. A review of these plans and

studies will be conducted by the appropriate regulatory agencies. For any proposed remedial action to be approved, it must be shown to be protective of human health and the environmental. Construction contingency plans and a site health and safety plan will be prepared as necessary. Undertaking these measures will serve to protect the health and safety of project workers as well as residents and businesses near the project.

Interference with Ongoing Remediation Activities

The Authority or its contractors will coordinate with the lead agency of all PEC sites undergoing remediation in the study area, and will ensure that remediation activities are not impeded and that the project does not prevent compliance with the site's remedial action plans. The Authority or its contractor will prepare a Site Management Program/Contingency Plan (SMP/CP) prior to construction to address known and potential hazardous material issues; the SMP/CP will include the following:

- Measures to address the management of contaminated soil and groundwater.
- A Site-Specific Health and Safety Plan, including measures to protect construction workers and the general public.
- Procedures to protect workers and the general public in the event that unknown contamination or buried hazards are encountered.

6.3.3.3 Impact 3 Analysis: West Hanford Bypass Alternative

There are no features or conditions associated with the West Hanford Bypass Alternative that increase the likelihood of hazardous conditions with respect to the disturbance of contaminated soil/groundwater at existing or future PEC sites. The planned West Hanford Bypass Alternative right-of-way is along a less-developed corridor with fewer existing PEC sites. The number of potential sites, as well as the degree to which those sites may be contaminated, is greatly reduced when compared to the more-developed property along the BNSF Alternative (Section 6.2.1).

Although the potential for occurrence is reduced on the West Hanford Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the disturbance of contaminated soil/groundwater at existing or future PEC sites are the same as those for the BNSF Alternative.

6.3.3.4 Impact 3 Analysis: Corcoran Bypass Alternative

Alignment alternatives through rural and agricultural areas have less potential to encounter hazardous wastes or materials as compared with alignment alternatives in more-urban areas. However, there is increased potential for pesticide contamination if the area is developed predominately for agricultural purposes and the potential for ADL contamination if the respective alignment is parallel to a freeway or highway. Compared with the BNSF Alternative, the planned right-of-way is along a less-developed corridor with fewer existing PEC sites (Section 6.2.1), and the hazard conditions for the Corcoran Bypass Alternative would be less than for the BNSF Alternative with respect to the disturbance of contaminated soil/groundwater at existing or any future PEC sites.

Although the potential for occurrence is reduced on the Corcoran Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the disturbance of contaminated soil/groundwater at existing or PEC sites are the same as those on the BNSF Alternative.

6.3.3.5 Impact 3 Analysis: Allensworth Bypass Alternative

There are no features or conditions associated with the Allensworth Bypass Alternative that increase the likelihood of hazardous conditions with respect to the disturbance of contaminated soil/groundwater at

existing or any future PEC sites. Because the planned right-of-way is along a less-developed corridor with fewer existing PEC sites (Section 6.2.1), the hazard conditions for the Allensworth Bypass Alternative are less than those for the BNSF Alignment with respect to the disturbance of contaminated soil/groundwater at existing or any future PEC sites.

Although the potential for occurrence is reduced on the Allensworth Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the disturbance of contaminated soil/groundwater at existing or future PEC sites are the same as those for the BNSF Alternative.

6.3.3.6 Impact 3 Analysis: Wasco-Shafter Bypass Alternative

There are no features or conditions associated with the Wasco-Shafter Bypass Alternative that increase the likelihood of hazardous conditions with respect to the disturbance of contaminated soil/groundwater at existing or future PEC sites. The planned Wasco-Shafter Bypass Alternative right-of-way is along a less-developed corridor with fewer existing PEC sites. The number of potential sites, as well as the degree to which those sites may be contaminated, is greatly reduced when compared to the more-developed property along the BNSF Alternative (Section 6.2.1).

Although the potential for occurrence is reduced on the Wasco-Shafter Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the disturbance of contaminated soil/groundwater at existing or future PEC sites are the same as those for the BNSF Alternative.

6.3.3.7 Impact 3 Analysis: Bakersfield South Alternative

The Bakersfield South Alternative closely parallels the BNSF Alternative. The access, egress, and transportation corridors used to service the Bakersfield South Alternative are the same as for the BNSF Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to disturbance of contaminated soil/groundwater at existing or any future PEC sites are analogous.

Mitigation measures for the Bakersfield South Alternative are consistent with those for the BNSF Alternative Alignment.

6.3.3.8 Impact 3 Analysis: Bakersfield hybrid Alternative

The Bakersfield Hybrid Alternative closely parallels the Bakersfield South Alternative. The access, egress, and transportation corridors used to service the Bakersfield Hybrid Alternative are the same as for the Bakersfield South Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to disturbance of contaminated soil/groundwater at existing or any future PEC sites are analogous.

Mitigation measures for the Bakersfield Hybrid Alternative are consistent with those for the Bakersfield South Alternative.

6.3.4 Impact 4: Potential Impacts related to Increased Exposure to Asbestos as a Result of Building Demolition from Project Development

Development of the proposed project would demolish structures and could cause the release of asbestos fibers. Depending on the date of construction, many of the structures along the alternative alignments, including concrete bridge abutments, may have been built with structural and building materials that contain asbestos. At the sites with structures where URS performed site reconnaissance, the interior building materials that could be ACMs included floor tiles and mastic; wallboard and joint compound;

wall, ceiling, and pipe insulation; and acoustic ceiling panels. Exterior building materials included transite siding, roofing materials, window sealants, patching material, concrete bridge construction materials, and transite pipe.

6.3.4.1 Impact 4 Analysis: No Project Alternative

If the No Project Alternative were chosen, there would be no incremental increase in impacts induced by the HST System construction or operation beyond those that already exist as a result of improvements to local, state, and interstate transportation systems and airports designated in existing plans and programs. Thus, impacts from the HST System project would not be substantial.

6.3.4.2 Impact 4 Analysis: BNSF and Corcoran Elevated Alternatives

Existing buildings or other structures in the project area could have been constructed with ACM. When construction of the HST begins, a number of these structures could be demolished resulting in the potential release of asbestos fibers into the environment and potential health impacts on workers or community members.

Avoidance and Minimization Measures

Before demolition activities of residential, institutional, industrial, or commercial structures, the demolition contractor will determine whether the structure(s) proposed for demolition contains asbestos that is friable (i.e., brittle) during demolition or disposal pursuant to TSCA, 15 U.S.C. Section 2601 et seq., and 40 CFR Part 763, Subpart G. If the contractor is a state or local government employer whose employees perform construction activities identified in 29 CFR 1926.1101(a), they must comply with the OSHA standards in 29 CFR 1926.1101 and submit notifications required for alternative control methods to the Director, National Program Chemicals Division (7404), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460. If custodial activities are not associated with the construction activities identified in 29 CFR 1926.1101(a), the contractor must comply with the OSHA standards in 29 CFR 1910.1001.

If the structure contains friable asbestos, a contractor who is state-certified for asbestos removal will comply with the above regulations, acquire the appropriate permits from local agencies, and remove the asbestos. Depending upon the amount and type of asbestos to be removed, advanced notification to the appropriate local agencies (i.e., the San Joaquin Valley Air Pollution Control District) and DTSC may be required before asbestos is disturbed or removed. Notification requirements may also include notifying local residents and/or construction workers in the proximity where asbestos work is being done. Determining the existence of ACMs and removing them safely is important to preserve the long-term health of construction workers associated with potentially contaminated structures or sites. General personal protection practices include, but are not limited to, the following:

- The ACM work area will be restricted to authorized, trained, and properly protected personnel.
- The contractor will post "Asbestos Health Hazard" danger signs at all entrances to the work area.
- The contractor will be responsible for worker protection measures, including protective clothing, respirators, and other equipment.
- The contractor will have a written OSHA Hazard Communication Program in effect on the project site as required by 29 CFR Section 1926.59.
- The contractor will have a written contingency/emergency plan in effect on the project site.
- The contractor will have a written safety program for all employees in effect on the project site.

- The contractor will implement engineering controls as needed, including but not limited to, dust mitigation with water spray, perimeter monitoring with dust meters, and so on.

6.3.4.3 Impact 4 Analysis: West Hanford Bypass Alternative

Alignment alternatives through rural and agricultural areas have less potential to encounter structures with ACMs as compared with alignment alternatives in more-urban areas. Because the planned right-of-way is along a less-developed corridor, the hazard conditions for the West Hanford Bypass Alternative are less than those for the BNSF Alternative with respect to the demolition of structures that could cause the release of asbestos fibers.

Although the potential for occurrence is reduced on the West Hanford Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the demolition of structures that could cause the release of asbestos fibers are the same as those for the BNSF Alternative Alignment.

6.3.4.4 Impact 4 Analysis: Corcoran Bypass Alternative

Alignment alternatives through rural and agricultural areas have less potential to encounter structures with ACMs as compared with alignment alternatives in more-urban areas. Because the planned right-of-way is along a less-developed corridor, the hazard conditions for the Corcoran Bypass Alternative are less significant than those for the BNSF Alternative with respect to the demolition of structures that could cause the release of asbestos fibers.

Although the potential for occurrence is reduced on the Corcoran Bypass Alternative, the mitigation measures for hazard conditions with respect to the demolition of structures that could cause the release of asbestos fibers are the same as those for the BNSF Alternative.

6.3.4.5 Impact 4 Analysis: Allensworth Bypass Alternative

Alignment alternatives through rural and agricultural areas have less potential to encounter structures with ACMs as compared with alignment alternatives in more-urban areas. Because the planned right-of-way is along a less-developed corridor than for the corresponding BNSF Alternative, the hazard conditions for the Allensworth Bypass Alternative are less than those for the BNSF Alignment with respect to the demolition of structures that could cause the release of asbestos fibers.

Although the potential for occurrence is reduced on the Allensworth Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the demolition of structures that could cause the release of asbestos fibers are the same as those for the BNSF Alignment.

6.3.4.6 Impact 4 Analysis: Wasco-Shafter Bypass Alternative

Alignment alternatives through rural and agricultural areas have less potential to encounter structures with ACMs as compared with alignment alternatives in more-urban areas. Because the planned right-of-way is along a less-developed corridor, the hazard conditions for the Wasco-Shafter Bypass Alternative are less than those for the BNSF Alternative with respect to the demolition of structures that could cause the release of asbestos fibers.

Although the potential for occurrence is reduced on the Wasco-Shafter Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the demolition of structures that could cause the release of asbestos fibers are the same as those for the BNSF Alternative.

6.3.4.7 Impact 4 Analysis: Bakersfield South Alternative

The Bakersfield South Alternative closely parallels the BNSF Alternative. The urbanization and industrialization near to the Bakersfield South Alternative are the same as that of the BNSF Alternative. Therefore, the impacts with respect to disturbance of ACMs are similar.

Mitigation measures for the Bakersfield South Alternative are consistent with those for the BNSF Alternative.

6.3.4.8 Impact 4 Analysis: Bakersfield Hybrid Alternative

The Bakersfield Hybrid Alternative closely parallels the Bakersfield South Alternative. The urbanization and industrialization near to the Bakersfield Hybrid Alternative are the same as that of the Bakersfield South Alternative. Therefore, the impacts with respect to disturbance of ACMs are similar.

Mitigation measures for the Bakersfield Hybrid Alternative are consistent with those for the Bakersfield South Alternative.

6.3.5 Impact 5: Potential Impacts related to Increased Exposure to Lead and LBP as a Result of Building Demolition from Project Development

LBP is recognized as a potential health risk because of the known toxic effects of lead exposure on the central nervous system, kidneys, and blood stream. Lead exposure occurs primarily through the ingestion of LBP. Concern for LBP is primarily related to residential structures, though the concern may also apply to commercial structures. The risk of lead toxicity in LBP varies according to the condition of the paint and the year of its application. The risk of lead toxicity in LBP varies according to the condition of the paint and the year of its application. Also, residue from the removal of yellow thermoplastic and yellow painted traffic stripes and pavement markings may contain lead chromate, according to Caltrans Standard Special Provision 14-001 (Caltrans 2009).

6.3.5.1 Impact 5 Analysis: No Project Alternative

If the No Project Alternative were chosen, there would be no incremental increase in impacts induced by the HST System construction or operation beyond those that already exist as a result of improvements to local, state, and interstate transportation systems and airports designated in existing plans and programs. Thus impacts from the HST System project would not be substantial.

6.3.5.2 Impact 5 Analysis: BNSF and Corcoran Elevated Alternatives

LBP could become separated from building materials during the demolition process. Separated paint can be classified as a hazardous waste if the lead content exceeds 1,000 parts per million and would need to be disposed of accordingly. Additionally, LBP chips can pose a hazard to workers and adjacent sensitive land uses. Both federal OSHA and California OSHA (29 CFR Part 1926.62 and 8 CCR Section 1532.1, respectively) regulate all worker exposure during construction activities that affect LBP.

The OSHA-specified method of compliance includes respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, training, and so on. Since multiple residences and commercial buildings near the alignment alternatives were built before the 1979 regulations that limited the use of lead, it is reasonable to assume that surfaces may have been treated with LBP. In addition, it is possible that painted surfaces on existing structures were applied before 1978 when the Consumer Products Safety Commission lowered the allowable concentration of lead in paints to 0.5% by weight. Therefore, some painted building material surfaces may contain unhealthy amounts of lead. If lead is found, the potential exposure of construction workers to LBP would have potentially adverse health effects (Cal-OSHA 1993).

Avoidance and Minimization Measures

Potential exposure of construction workers to LBP will be minimized through disclosure of the potential presence of LBP for demolition and renovation of structures that were constructed before 1979. Interim Final Rule, which is found in 29 CFR Part 1926.62, covers construction work where employees may be exposed to lead during activities such as demolitions, removal, surface preparation for re-painting,

renovation, cleanup and routine maintenance. Before any demolition of structures constructed before 1979, the demolition contractor will conduct an LBP survey to determine the level of risk posed to construction workers from exposure to the paints that are present. Results of the LBP survey will be documented with the applicable county agencies. Any recommendations made in that survey related to the paints present at the project site will be implemented before the demolition of the painted surfaces.

If a determination is made that LBP is present in a building slated for demolition, the demolition contractor will implement an LBP abatement plan, which will include the following components:

- A site-specific work plan that includes a site-specific health and safety plan, as needed.
- Containment of all work areas to prohibit offsite migration of paint chip debris. A properly fitting HEPA (high-efficiency particulate air) respirator will be worn while working. Cleanup must be with a HEPA vacuum. (Contents of the vacuum will be hazardous waste.) Protective clothing will be worn and the work area sealed with 6-millimeter plastic.
- Certain tasks, particularly manual demolition of structures (i.e., drywall), dry manual scraping or sanding, heat-gun applications, and abrasive blasting, are considered by OSHA to be higher risk and respiratory protection will be provided for workers until air monitoring proves exposures are below the permissible exposure limit (PEL).
- Peeling and stratified LBP on building surfaces and on nonbuilding surfaces will be removed to the degree necessary to safely and properly complete demolition activities according to the survey recommendations.
- Lead cleanup activities will be conducted in accordance with OSHA's lead standard, particularly the worker protection and hygiene provisions. As a general rule, plastic sheeting, burlap, or other appropriate material will be used to contain lead dust, paint chips, and debris. Care will be taken to clean up any dust, paint chips, or debris that may remain after the containment material is picked up. In some cases, vacuuming with a HEPA vacuum or wet-washing may be necessary to clean up the work area.

This process will limit unnecessary exposure to construction workers present at the project site.

6.3.5.3 Impact 5 Analysis: West Hanford Bypass Alternative

Alignment alternatives through rural and agricultural areas have less potential to encounter structures with LBP as compared with alignment alternatives in more-urban areas. Because the planned right-of-way is along a less-developed corridor, the hazard conditions for the West Hanford Bypass Alternative are less than those for the BNSF Alternative with respect to the demolition of structures that could cause exposure to lead and lead-based paint.

Although the potential for occurrence is reduced on the West Hanford Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the demolition of structures that could cause exposure to lead and LBP are the same as those for the BNSF Alternative.

6.3.5.4 Impact 5 Analysis: Corcoran Bypass Alternative

Alignment alternatives through rural and agricultural areas have less potential to encounter structures with LBP as compared with alignment alternatives in more-urban areas. Because the planned right-of-way is along a less-developed corridor, the hazard conditions for the Corcoran Bypass Alternative are less than those for the BNSF Alternative with respect to the demolition of structures that could cause exposure to lead and LBP.

Although the potential for occurrence is reduced on the Corcoran Bypass Alternative, the mitigation measures for hazard conditions with respect to the demolition of structures that could cause exposure to lead and LBP are the same as those for the BNSF Alternative.

6.3.5.5 Impact 5 Analysis: Allensworth Bypass Alternative

Alignment alternatives through rural and agricultural areas have less potential to encounter structures with LBP as compared with alignment alternatives in more-urban areas. Because the planned right-of-way is along a less-developed corridor, the hazard conditions for the Allensworth Bypass Alternative are less than those for the BNSF Alternative with respect to the demolition of structures that could cause exposure to lead and LBP.

Although the potential for occurrence is reduced on the Allensworth Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the demolition of structures that could cause exposure to lead and LBP are the same as those for the BNSF Alternative.

6.3.5.6 Impact 5 Analysis: Wasco-Shafter Bypass Alternative

Alignment alternatives through rural and agricultural areas have less potential to encounter structures with LBP as compared with alignment alternatives in more-urban areas. Because the planned right-of-way is along a less-developed corridor, the hazard conditions for the Wasco-Shafter Bypass Alternative are less than those for the BNSF Alternative with respect to the demolition of structures that could cause exposure to lead and lead-based paint.

Although the potential for occurrence is reduced on the Wasco-Shafter Bypass Alternative because of the rural route, the mitigation measures for hazard conditions with respect to the demolition of structures that could cause exposure to lead and LBP are the same as those for the BNSF Alternative.

6.3.5.7 Impact 5 Analysis: Bakersfield South Alternative

The Bakersfield South Alternative closely parallels the BNSF Alternative. The urbanization and industrialization near the Bakersfield South Alternative are the same as that for the BNSF Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to disturbance of LBP are analogous.

Mitigation measures for the Bakersfield South Alternative are consistent with those for the BNSF Alternative.

6.3.5.8 Impact 5 Analysis: Bakersfield hybrid Alternative

The Bakersfield Hybrid Alternative closely parallels the Bakersfield South Alternative. The urbanization and industrialization near the Bakersfield Hybrid Alternative are the same as that for the Bakersfield South Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to disturbance of LBP are analogous.

Mitigation measures for the Bakersfield Hybrid Alternative are consistent with those for the Bakersfield South Alternative.

6.3.6 Impact 6: Potential Impacts related to Handling of Hazardous Materials, Substances, or Waste within 0.25 Mile (0.40 Kilometer) of an Existing or Proposed School

Twenty-nine educational facilities (defined as colleges, high schools, elementary schools, preschools, or nursery schools) are within 0.25 mile (0.40 kilometer) of the construction footprint of three alignment alternatives. Twenty-one educational facilities were identified within 0.25 mile (0.40 kilometer) of the

BNSF Alternative. Four are identified within 0.25 mile (0.40 kilometer) of the Hanford West Bypass Alternative (Table 5-5). Fourteen of these are within 0.25 mile of the Bakersfield South Alternative and twelve are within 0.25 mile of the Bakersfield Hybrid Alternative. Hazardous materials are substances that are flammable or combustible, explosive, toxic, noxious, corrosive, radioactive, or are oxidizers or irritants. Potentially hazardous materials and items containing potentially hazardous materials commonly used in railway construction, operation, or maintenance will be used or stored in the respective alignment right-of-way, in some cases within 0.25 mile (0.40 kilometer) of schools (considered sensitive receptors).

6.3.6.1 Impact 6 Analysis: No Project Alternative

If the No Project Alternative were chosen, there would be no incremental increase in impacts induced by the HST System construction or operation beyond those that already exist as a result of improvements to local, state, and interstate transportation systems and airports designated in existing plans and programs. Thus, impacts from the HST System project would not be substantial.

6.3.6.2 Impact 6 Analysis: BNSF and Corcoran Elevated Alternatives

There are twenty-one educational facilities identified within 0.25 mile (0.40 kilometer) of the BNSF Alternative. (Table 5-5). Potentially hazardous materials and items containing potentially hazardous materials commonly used in railway construction, operation, or maintenance will be used or stored in the respective alignment right-of-way. Additionally, demolition of the existing structures within the project site could require the removal of ACM and LBP from the project site.

Any hazardous materials usage within the alternative alignment would be subject the federal, state, and local regulations and policies described above. The county and municipal codes require any business that stores hazardous materials to provide either a hazardous materials inventory statement or a hazardous materials management plan to the CUPA agencies of the respective city or county. Additionally, the CUPA agencies require a business plan in accordance with state regulations (California Health and Safety Code, Section 25100 et seq.).

Furthermore, California Public Resources Code Section 21151.4. states “An environmental impact report shall not be certified or a negative declaration shall not be approved for any project involving the construction or alteration of a facility within 0.25 mile (0.40 kilometer) of a school that might reasonably be anticipated to emit hazardous air emissions, or that would handle an extremely hazardous substance 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, that may pose a health or safety hazard to persons who would attend or would be employed at the school, unless both of the following occur: (1) The lead agency preparing the environmental impact report or negative declaration has consulted with the school district having jurisdiction regarding the potential impact of the project on the school, and (2) The school district has been given written notification of the project not less than 30 days prior to the proposed certification of the environmental impact report or approval of the negative declaration.”

Therefore, the affected school would be able to comment on the project and express any related concerns that may result in potential prescriptive actions, such as limits on the materials used, or restrictions on the transport and storage of such materials.

Also, the California Air Resources Board (CARB), the San Joaquin Valley Air Pollution Control District, and the various county agencies specify air monitoring for large- and small-scale construction projects, contaminated soil and groundwater remediation projects, and demolition projects. Onsite monitoring regulations are summarized at the CARB website, http://www.arb.ca.gov/homepage.htm, for the following components of air-borne contamination, among others:

- Visible emissions.
- Fugitive dust.

- Particulate matter.
- Organic solvents.
- Storage of organic liquids.
- Transfer of gasoline and diesel fuel to vehicles.
- Transfer of gasoline and diesel fuel to fuel storage tanks.
- Open burning.

Examples of other engineering controls that will be applied to contain any offsite emissions that might affect an adjacent school may also include but not be limited to: emission control for diesel off-road equipment and diesel generators; dust control through wetting or covering; short- and long-term ambient air monitoring in neighborhoods near and down-wind from the construction or maintenance sites; and field olfactometry measuring and quantifying odor strength in the ambient air.

Because the project would comply with this and all other federal, state, and local regulations related to the transport, handling, and disposal of hazardous waste, the effect of HST construction and operation related to routine transport and handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school would have negligible impacts.

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 during construction would largely be negligible because of the generally small quantities of materials transported or used at any given time and because of the precautions required by regulations. However, in the most unlikely and extreme case, such a release could result in moderate impacts.

Avoidance and Minimization Measures

Adherence to state and federal regulations for the transport, handling, and disposal of hazardous waste would result in negligible impacts and no specific mitigation is required. Moderate impacts could occur with respect to a leak or spill of extremely hazardous materials due to accident or collision. To avoid this situation, no 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) would be used within 0.25 mile of a school.

6.3.6.3 Impact 6 Analysis: Hanford West Bypass Alternative

Four educational facilities were identified within 0.25 mile (0.40 kilometer) of the Hanford West Bypass Alternative (Table 5-5). The transportation, use, and storage of hazardous materials/waste for the Hanford West Bypass Alternative are the same as those for the BNSF Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to educational facilities within 0.25 mile (0.40 kilometer) of the alternative alignment are analogous, and mitigation would be the same.

6.3.6.4 Impact 6 Analysis: Corcoran Bypass Alternative

No educational facilities are within 0.25 mile (0.40 kilometer) of the Corcoran Bypass Alternative. Thus, no impact would occur, and no mitigation is required.

6.3.6.5 Impact 6 Analysis: Allensworth Bypass Alternative

No educational facilities are within 0.25 mile (0.40 kilometer) of the Allensworth Bypass Alternative. Thus, no impact would occur, and no mitigation is required.

6.3.6.6 Impact 6 Analysis: Wasco-Shafter Bypass Alternative

No educational facilities are within 0.25 mile (0.40 kilometer) of the Wasco-Shafter Bypass Alternative. Thus, no impact would occur, and no mitigation is required.

6.3.6.7 Impact 6 Analysis: Bakersfield South Alternative

Fourteen educational facilities were identified within 0.25 mile (0.40 kilometer) of the Bakersfield South Alternative (Table 5-5). The transportation, use, and storage of hazardous materials/waste for the Bakersfield South Alternative are the same as those for the BNSF Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to educational facilities within 0.25 mile (0.40 kilometer) of the alternative alignment are analogous, and mitigation would be the same.

6.3.6.8 Impact 6 Analysis: Bakersfield hybrid Alternative

Twelve educational facilities were identified within 0.25 mile (0.40 kilometer) of the Bakersfield South Alternative (Table 5-5). The transportation, use, and storage of hazardous materials/waste for the Bakersfield Hybrid Alternative are the same as those for the Bakersfield South Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to educational facilities within 0.25 mile (0.40 kilometer) of the alternative alignment are analogous, and mitigation would be the same.

6.3.7 Impact 7: Potential Impacts related to Hazardous Material Sites Compiled pursuant to Government Code Section 65962.5

Government Code Section 65962.5(a) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code." Section 65962.5(a)(3) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: information received by the Department of Toxic Substances Control pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposals on public land."

Section 65962.5(a)(4) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: sites listed pursuant to Section 25356 of the Health and Safety Code." Section 65962.5(a)(5) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following sites included in the Abandoned Site Assessment Program (formerly identified in the CalSites database, now part of the EnviroStor database)" (DTSC 2010).

From EDR database search reports and DTSC online listed sites and facilities databases (EnviroStor), URS identified 32 sites that fit the criteria discussed above. The identified DTSC sites are included in the 121 PEC sites that were reviewed during the baseline conditions assessment for sites with the potential to negatively affect the study area (Table 5-1).

6.3.7.1 Impact 7 Analysis: No Project Alternative

If the No Project Alternative were chosen, there would be no incremental increase in impacts induced by the HST System construction or operation beyond those that already exist as a result of improvements to local, state, and interstate transportation systems and airports designated in existing plans and programs. Thus impacts from the HST System project would not be substantial.

6.3.7.2 Impact 7 Analysis: BNSF and Corcoran Elevated Alternatives

All 32 DTSC sites identified are in the study area close to the BNSF Alternative and generally located in the developed, industrialized areas of Fresno, Hanford, Corcoran, Wasco, Shafter, and Bakersfield (Table 5-1; Figure 5-1). Three of these DTSC sites may also affect the Bakersfield South Alternative. It should be noted that while these sites have been tentatively identified as meeting DTSC criteria for sites identified pursuant to Government Code Section 65962.5, this assessment was not intended to be a definitive investigation of potential contamination in the study area. Therefore, the recommendations provided are not necessarily inclusive of all the possible conditions. This assessment is not an evaluation of the efficiency of the use of any hazardous materials in the study area. Neither soil nor groundwater sampling was undertaken during this investigation. Given that the scope of services for this investigation was limited, it is possible that currently unrecognized or unreported contamination and other impacted sites that would meet DTSC criteria for sites identified pursuant to Government Code Section 65962.5 might exist in the study area for this alternative alignment.

Federal, state, and local regulations and policies discussed above, including the Comprehensive Environmental Response, Compensation and Liability Act, All-Appropriate Inquiry, California Public Resources Code Section 21151.4, and the Certified Uniform Program administered by the respective city and county agencies, would require the following ESA procedures (due-diligence) for future development on or near a potentially hazardous or contaminated site:

- Phase I ESA. It is recommended that all development within the project area consider a case-by-case, parcel-level Phase I. The site assessment plan will be submitted to the Authority for approval. The parcel-level site assessment plan will include all standards for an All-Appropriate Inquiry put forth by the U.S. EPA (40 CFR Part 312) and performed to ASTM standards (ASTM E1527-05). Results of the site assessment will be submitted to the Authority with recommendations for future actions.

- Phase II ESA. If the Phase I uncovers questionable conditions, a Phase II sampling study will be required. The study will collect the necessary samples. These can include soil, groundwater, or other materials that may contain hazardous materials, such as structural materials. A written report will be prepared detailing the results, applicable regulations, recommendations, and cost projections, if needed, and delivered to the Authority for review.

- Phase III ESA. If the Phase II concludes the site(s) are contaminated, a Phase III will be conducted. A Phase III will generally include a management plan that establishes design and implementation of mitigation or remediation. Cleanup may include excavation, disposal, bio-remediation, or any other treatment of conditions subject to regulatory action. All necessary reports, regulations, and permits will be followed to achieve cleanup of the site.

Activities that could cause the disturbance of contaminated soil/groundwater during HST System construction or contamination remediation have been described in this report under Impact 3, Mitigation Measures. In lieu of remediating the identified sites, design and engineering controls could be implemented to avoid the contaminated sites if the extent of the contamination and the components or logistics of remediation are prohibitive. Engineering controls to re-design structural features of the HST system, such as aboveground spans that avoid contaminated locations, could be installed. Relocation of the alignment alternative to avoid the areas of contamination is also a possible mitigation alternative.

Avoidance and Minimization Measures

Adherence to these regulations would result in identification of these sites and cleanup would be conducted before right-of-way acquisition. No specific mitigation is required.

6.3.7.3 Impact 7 Analysis: West Hanford Bypass Alternative

Four DTSC sites were identified in the study area near the West Hanford Bypass Alternative. The West Hanford Bypass Alternative closely mirrors the BNSF Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to the sites identified pursuant to Government Code Section 65962.5 and disturbance of contaminated soil/groundwater are analogous, and no mitigation is required.

6.3.7.4 Impact 7 Analysis: Corcoran Bypass Alternative

No DTSC sites were identified in the study area near the Corcoran Bypass Alternative. Thus, no impact would occur, and no mitigation is required.

6.3.7.5 Impact 7 Analysis: Allensworth Bypass Alternative

No DTSC sites were identified in the study area near the Allensworth Bypass Alternative. Thus, no impact would occur, and no mitigation is required.

6.3.7.6 Impact 7 Analysis: Wasco-Shafter Bypass Alternative

No DTSC sites were identified in the study area near the Wasco-Shafter Bypass Alternative. Thus, no impact would occur, and no mitigation is required.

6.3.7.7 Impact 7 Analysis: Bakersfield South Alternative

Three DTSC sites were identified in the study area near the Bakersfield South Alternative. The Bakersfield South Alternative closely parallels the BNSF Alternative. The access, egress, and transportation corridors used to service the Bakersfield South Alternative are the same as those for the BNSF Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to the sites identified pursuant to Government Code Section 65962.5 and disturbance of contaminated soil/groundwater are analogous, and no mitigation is required.

6.3.7.8 Impact 7 Analysis: Bakersfield hybrid Alternative

Three DTSC sites were identified in the study area near the Bakersfield South Alternative. The Bakersfield Hybrid Alternative closely parallels the Bakersfield South Alternative. The access, egress, and transportation corridors used to service the Bakersfield Hybrid Alternative are the same as those for the Bakersfield South Alternative. Therefore, the conditions for assessing the significance criteria and conducting the impact analysis with respect to the sites identified pursuant to Government Code Section 65962.5 and disturbance of contaminated soil/groundwater are analogous, and no mitigation is required.

6.3.8 Impact 8: Potential Public Safety Impacts related to Airport Land Use Plans or Public Airports or Private Airstrips within 2 Miles (3 Kilometers) of the Project

6.3.8.1 Impact 8 Analysis: All Alignment Alternatives

URS identified 12 active public and private airports, airstrips, or heliports within 2 miles (3 kilometers) of the nearest centerline of the alignment alternatives for the Fresno to Bakersfield Section of the HST system; only 1 of these sites is less than 0.1 mile (0.2 kilometer) from any alignment alternative (Table 5-4, Figure 5-2). Salyer Farms Airport is 0.08 mile (0.13 kilometer) west of the Corcoran Bypass Alternative (and 0.35 mile [0.56 kilometer] east of the BNSF Alternative). No inactive or historical airports, airstrips, or heliports were identified within 2 miles (3 kilometers) of any of the alignment alternatives.

Based on available information gathered during the baseline conditions assessment, no past or existing releases of hazardous substances or petroleum products into structures, soil, and/or groundwater beneath any of the airport, airstrip, or heliport properties were identified. With the exception of the Salyer Farms Airport, no crop-dusting-related activities were identified at any of these facilities during the limited assessment. Activities involving the use of hazardous materials at these facilities can generally be associated with the routine fueling, maintenance, and repair of aircraft and other airport-related vehicles.

6.3.8.2 Impact 8 Mitigation Measures

Unless currently uncharacterized conditions for these or other facilities are discovered in subsequent assessments, no mitigation is required.

6.3.9 Impact 9: Impacts related to Interference with Adopted Emergency Response Plans or Emergency Evacuation Plans

The study area for the Fresno to Bakersfield Section is defined as a 200-foot (61-meter) corridor on each side of the centerlines of the alignment alternatives. URS has assumed that the Fresno to Bakersfield Section would be approximately 115 miles (185 kilometers) long. This length covers the proposed sites of the three station locations and the project footprint for four potential locations for the heavy maintenance facility.

The project area is in an area of central California that has the potential for residents to encounter both man-made and natural hazards. Human-made hazards include the potential release of hazardous materials; the potential for biological, nuclear, and chemical attacks from foreign and domestic terrorism; and the potential for structure or grass fires started by humans. Natural hazards include flooding, seismic activity, extreme weather conditions, and structure or fires that start from natural causes.

6.3.9.1 Impact 9 Analysis: No Project Alternative

If the No Project Alternative were chosen, no incremental increase in impacts would be induced by the HST System construction or operation beyond those that already exist as a result of improvements to local, state, and interstate transportation systems and airports designated in existing plans and programs. Thus, no substantial impacts would result.

6.3.9.2 Impact 9 Analysis: All Other Alignment Alternatives

Lane or road closures during the construction and operation of the project have the potential to affect SR 99 and SR 43, which generally run parallel to the project alignments, and SR 41, SR 46, SR 58, SR 137, and SR 198, which intersect the project alignments at various locations. Additionally, California "J" county routes in Fresno, Kings, Tulare, and Kern counties as well as other county roads would be affected where they are near the alignment alternatives. Within the generally urban areas of Fresno, Hanford, Corcoran, Wasco, Shafter, and Bakersfield, lane closures of city streets have the potential to adversely affect traffic flow, particularly during rush hour.

These routes are the main thoroughfares used by emergency response services during an emergency and, if the situation warrants, during an area evacuation. Implementation of the project could result in a temporary reduction of the number of lanes along these roadway segments in the area and impede the flow of traffic. During the construction activities, the project could include short-term, single-lane closures along these routes, which could slow evacuation.

Construction activities, closures, and detour routes would be coordinated with emergency service providers and city and county emergency operations staff to minimize disruptions and delays. When needed, contractors will acquire the requisite permits for lane or road closure from one of the appropriate agencies:

- Caltrans.
- Fresno County Public Works and Planning – Road Maintenance and Operations Division.
- City of Fresno Traffic Engineering Traffic Permits and Plan Checks Section.
- Kings County Road Department.
- Tulare County Resource Management Agency Traffic Division.
- Kern County Roads Department.
- City of Bakersfield Public Works Department – Streets Division.

The construction contractors will be required to design, construct, and maintain structures, roadways, and facilities to comply with applicable local, regional, state and/or federal requirements related to emergency access and evacuation plans. Construction activities which may temporarily restrict vehicular traffic will be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures.

The contractor would properly plan, use, place and maintain traffic control devices in use at the construction site. In general, blocking a traffic lane requires the use of a flashing-arrow board. Solar flashing-arrow boards are required in residential areas, especially at night, to minimize noise problems. In certain lane closures, the use of high-level warning flags along with other devices is acceptable if installed in accordance with the provisions set forth in the *California Manual on Uniform Traffic Control Devices,* issued by Caltrans (Caltrans 2006a).

6.3.10 Impact 10: Potential Exposure of People or Structures to Loss, Injury, or Death Involving Wildland Fires

The statewide FHSZ maps available from the California Department of Forestry and Fire Protection indicate that no portions of the study area for the Fresno to Bakersfield Section are in areas generally subject to impacts from wildland fire (CalFire 2007). Parcels of land that were historically developed but are now vacant or fallow farmland were not considered to be “wildlands” for the purpose of this report. Relatively infrequent grass fires have occurred during the dry season on small parcels in the study area, so the placement of structures in fire-prone areas requires special consideration (CalFire 2007), but no mitigation is required.

6.4 Cumulative Impacts: Hazardous Wastes and Materials

Under NEPA, a cumulative impact is one that results from the incremental impact of an action on the environment when it is added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes the actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR Section 1508.7). A cumulative impact includes the total effect on a natural resource, ecosystem, or human community from past, present, or reasonably foreseeable future activities or from the actions of federal, nonfederal, public, and private entities. Cumulative impacts may also derive from the effects of natural processes and events, depending on the specific resource. Cumulative impacts include the total of all impacts on a particular resource that have occurred, are occurring, and will likely occur as a result of the direct and indirect impacts of a federal activity. Accordingly, there may be different levels of cumulative impacts on different environmental resources.

Under CEQA, cumulative impacts are defined as two or more individual affects that, when considered together, are considerable or compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable, probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines Section 15355).

A project's contribution to a cumulative impact may be considered less than significant if it is implementing a plan or program designed to avoid the cumulative impact (CEQA Guidelines Section 15064[h]) or if it will implement or fund its fair share of a mitigation measure designed to alleviate the cumulative impact (CEQA Guidelines Section 15130[a]). Under CEQA, the discussion of cumulative impacts should reflect the severity of the impacts and their likelihood of occurrence, but the discussion may be less detailed than the analysis of the project's individual effects. The discussion should be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which other identified projects contribute, rather than on the attributes of the other projects that do not contribute to the cumulative impact (CEQA Guidelines Section 15130[b]).

Cal-EPA's OEHHA is responsible for developing and maintaining the Environmental Protection Indicators for California (EPIC). The latest update to the environmental indicators relating to solid and hazardous wastes in 2005 shows that the total amount of hazardous waste shipped for treatment, storage, and disposal has fluctuated over the past decade, with the lowest amounts shipped in 1996 and 1997, and the highest in 2001. The amount of hazardous waste generated per unit of economic activity has continued to decline over the past decade. In addition, more than 75% of hazardous wastes shipped offsite were destined for disposal in landfills or recycling in 2003. The amount of hazardous waste disposed of in landfills has varied over the past 10 years but has increased overall, as has the amount being recycled. The Environmental Protection Indicators for California update notes that there has been no clear trend related to hazardous material spills or soil cleanup at hazardous waste sites (Cal-EPA 2005).

The study area for the cumulative analysis of hazardous wastes and materials extends to 1 mile (1.6 kilometers) on either side of the alternative alignments and encompasses the areas of the stations and heavy maintenance facility where potential project impacts from hazardous materials would be greatest. Nineteen other present and reasonably foreseeable future projects are in this area; most of these projects are roadway and other infrastructure improvements. Other projects that may include longer-term handling of hazardous materials include a trucking yard and fueling station in Fresno, an expansion of an existing sewage treatment facility in Shafter, and a concrete and asphalt recycling facility in Bakersfield.

Construction could also disturb oil wells and landfills or their surrounding environments. The potential for a methane gas release as a result of altered subsurface conditions that could lead to an increased explosion risk is of moderate intensity. Compliance with existing regulations would minimize the potential explosion risk.

The project would result in an incremental increase in the transportation, storage, use, and disposal of hazardous materials, mainly construction materials (e.g., fuels, oils, mechanical fluids, other chemicals). This incremental increase could result in spills and the need for waste disposal. The use of hazardous materials may also increase incrementally during operation of the proposed project, but this incremental increase would likely be less than the increase during construction. Transportation, storage, use, and disposal of hazardous materials during construction and operation of the proposed project and other present and reasonably foreseeable future projects would be required to comply with applicable federal, state, and local statutes and regulations. To the extent that these projects comply with the regulations, the potential for people and the environment to be exposed to hazardous materials would be minimized. Therefore, the cumulative impact of hazardous materials and wastes is negligible and the contribution of the Fresno to Bakersfield Section of the HST System to this impact would be negligible.

6.5 Waste Disposal for HST Construction and Operation

Statewide, California landfills are heavily affected by over 4 million tons of construction and demolition (C&D) debris each year. The California Integrated Waste Management Board and California's Department of General Services plan to reduce C&D wastes in landfills through implementation of higher C&D waste diversion (recycling) requirements on large capital projects (Burgoyne 1999). Effective methods of

recycling can also be cost-effective. Contractors can store, recycle and reuse C&D materials on the site; this represents one of the most-efficient methods of recycling and saves transportation, storage, and some processing costs (CalRecycle 2010).

The HST project construction, operation, and maintenance phases of the project have the potential to generate large quantities of C&D debris and other material. Waste from the demolition and clearing for construction as well as multiple fluids generated from operation and maintenance phases are some of the wastes suitable for reuse or recycle. Some potential uses for recycled materials include aggregate for concrete and fill material for portions of the rail line. By recycling substantial amounts of C&D wastes and operation and maintenance wastes, the project would generate a much-smaller volume of waste product for disposal. Estimated types of materials and waste generation volumes that are planned for recycling are listed in Table 6-3. Consistent with CalRecycle 2010 resource conservation guidelines, anticipated recyclables for the HST System include, but are not limited to:

- Concrete.
- Asphalt.
- Nonhazardous soil.
- Nonhazardous water.
- Used oil and oil filters.
- Used hydraulic fluid.
- Contaminated fuel.
- Antifreeze.
- Ferrous and nonferrous metals.
- Scrap pipe, culvert, and wire.
- Used batteries.
- Bricks.
- Paper and cardboard.
- Unused paint and solvents.
- Glass and plastic.
- Brush and wood products.

Anticipated nonrecyclable materials for the HST project construction, operation, and maintenance phases include an estimated 6.9 million gallons (26 million liters) of sanitary waste annually (Table 6-3). This waste will be disposed of through local or regional wastewater treatment facilities. Since this waste will be conveyed primarily by pipeline, no other transportation or processing impact is expected beyond the initial waste system installation. Treated or reclaimed wastewater is directed to ponds to percolate into the ground. A portion of the reclaimed wastewater is also supplied directly to nearby farmers to irrigate fodder and fiber crops, such as alfalfa and cotton. Bio-solids are further treated and mixed with other materials, making a product that is sold in the market as fertilizer.

Landfill disposal sites are classified by the types of waste that they can receive. In California, Class I sites may accept hazardous and nonhazardous wastes; Class II sites may accept “designated” and nonhazardous wastes; and Class III sites may accept nonhazardous wastes.

Landfill and waste management personnel in Fresno, Kings, Tulare, and Kern counties provided URS with landfill capacity calculations for Class II and Class III disposal sites (summarized in Table 6-4). The combined total estimated capacity for nonhazardous demolition debris at these sites is approximately 160 million cubic yards (122 million cubic meters) (Table 6-4). An estimated 100,000 cubic yards (76,455 cubic meters) of nonhazardous, nonrecyclable demolition debris will be generated during the construction phase of the HST (Table 6-3). Therefore, the estimated HST construction impact is approximately 0.06% of the total overall estimated capacity of the disposal sites. Thus, the existing waste disposal facilities have sufficient capacity to address nonhazardous Class II and Class III solid waste and construction debris.

Class I disposal sites in Kings and Kern counties have an estimated capacity of approximately 16 million cubic yards (12 million cubic meters) to address solid and liquid RCRA wastes that may be generated during the construction, operation, and maintenance phases of the HST System (Table 6-4). An estimated 40,000 cubic yards (30,582 cubic meters) of contaminated soil from remediation of existing PEC sites and an estimated 2,500 cubic yards (1,911 cubic meters) of ACMs from preconstruction right-of-way demolition will be generated. An estimated 620 cubic yards (474 cubic meters) of nonhazardous, nonrecyclable chemical waste and nonrecyclable chemical containers from operation and maintenance will be generated in the first year of operation (Table 6-3). Therefore, the estimated HST impact is less than 0.01% of the total overall estimated capacity of the disposal sites. Thus, the existing waste disposal facilities have sufficient capacity to address Class I solid and liquid RCRA wastes.

Landfill and waste management personnel provided capacity data and proposed date of closure information for available disposal sites in Fresno, Kings, Tulare, and Kern counties. The locations of the active waste disposal sites are summarized in Table 6-4. The disposal sites are shown on Figure 6-1.

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Chapter 7
References

7.0 References

7.1 Aerial Photographic Resources

California State University, Fresno, Maps and Government Information Department, California State University, Fresno, Fresno, CA. Collection reviewed January 15, 2010.

Kern Council of Governments, 1401 19th Street, Bakersfield, CA. 2008 Kern COG Aerial Imagery. Collection was reviewed February 4, 2010.

Kings County Planning Division, County Development Agency, 1400 West Lacey Boulevard, Building 6 Hanford, CA. Aerial Imagery Collection. Collection reviewed January 28, 2010.

Tulare County Library, 200 West Oak Avenue, Visalia, CA. Aerial Photography Collection 1937 to 1977. Collection reviewed February 11, 2010.

7.2 Published Resources

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Tables

Table 4-1
EDR Agency Database Search Results

Databases	Number of Sites Identified
Federal Records	
U.S. Environmental Protection Agency (U.S. EPA) National Priority List (NPL) for Superfund Sites	1
U.S. Proposed NPL Sites (Proposed NPL)	0
Federal Superfund Liens (NPL LIENS)	0
U.S. NPL Deletions (Delisted NPL)	0
U.S. EPA Comprehensive Environmental Response, Compensation, and Liability Index System (CERCLIS)	16
U.S. EPA CERCLIS – No Further Remedial Action Planned (CERCLIS-NFRAP)	13
U.S. EPA Resource Conservation and Recovery Act (RCRA) Corrective Action Sites (CORRACTS)	5
U.S. EPA RCRA Permitted Treatment, Storage, and Disposal Facilities (TSDFs)	5
U.S. EPA RCRA Registered Large-Quantity Generators of Hazardous Waste (RCRA-LQG)	7
U.S. EPA RCRA Registered Small-Quantity Generators of Hazardous Waste (RCRA-SQG)	166
U.S. EPA RCRA Registered Conditionally Exempt Small-Quantity Generators of Hazardous Waste (RCRA-CESQG)	0
U.S. Engineering Controls Sites List (US ENG CONTROLS)	1
U.S. Sites with Institutional Controls (US INST CONTROL)	1
U.S. EPA Emergency Response Notification System (ERNS)	12
Hazardous Materials Information Reporting System (HMIRS)	60
U.S. Listing of Brownfield Sites (US BROWNFIELDS)	1
Formerly Used Defense Sites (FUDS)	1
U.S. EPA Superfund (CERCLA) Consent Decrees (CONSENT)	1
U.S. EPA Records of Decision (ROD)	1
Federal Toxic Chemical Release Inventory System (TRIS)	4
FIFRA/TSCA Tracking System–FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act)/TSCA (Toxic Substances Control Act) (FTTS)	2
FIFRA/TSCA Tracking System Administrative Case Listing (HIST FTTS)	2
Section 7 Tracking Systems–Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act (SSTS)	4
PCB Activity Database System (PADS)	2
Facility Index System/Facility Registry System (FINDS)	241

Table 4-1
EDR Agency Database Search Results

Databases	Number of Sites Identified
State and Local Records	
State Response Sites (RESPONSE)	9
State Site Mitigation and Brownfield Reuse Program Database (EnviroStor)	60
State Solid-Waste Information System of Permitted Solid-Waste Disposal Facilities or Landfills (SWF/LF)	16
State Leaking Underground Storage Tank Incident Reports (LUST)	311
State Spills, Leaks, Investigation and Clean-up Cost Recovery Listing (SLIC)	26
State Leaking Underground Storage Tanks on Indian Land (INDIAN LUST)	0
State Active Underground Storage Tank Facilities (UST)	289
State Aboveground Petroleum Storage Tank Facilities (AST)	65
State Underground Storage Tanks on Indian Land (INDIAN UST)	0
State Voluntary Cleanup Program Properties (VCP)	2
State Voluntary Cleanup Priority Listing on Indian Land (INDIAN VCP)	0
State Emissions Inventory Data (EMI)	103
EnviroStor Permitted Facilities Listing (HWP) http://www.envirostor.dtsc.ca.gov/public/search.asp	11
State Waste Management Unit Database System (WMUDS/SWAT)	10
State Listing of Recycling Facilities (SWRCY)	27
State Registered Waste Tire Haulers Listing (HAULERS)	4
State Report of the Status of Open Dumps on Indian Lands (INDIAN ODI)	0
U.S. and State Clandestine Drug Labs (CDL)	5
State Historical Hazardous Waste Sites (HIST Cal-Sites)	11
State School Property Evaluation Program (SCH)	8
State Toxic Pits Cleanup Act Sites (Toxic Pits)	6
California Facility Inventory Database of historical active and inactive UST locations (CA FID UST)	278
State Hazardous Substance Storage Container Database of Historic UST Sites (HIST UST)	398
State SWEEPS UST Listing (SWEEPS UST)	359
State-Certified Processors Database (PROC)	4
State Registered Hazardous Waste Transporter Database (HWT)	4

Table 4-1
EDR Agency Database Search Results

Databases	Number of Sites Identified
State Environmental Liens Listing (LIENS)	0
State Deed Restriction Listing (DEED)	2
State of California Hazardous Materials Incident Report System (CHMIRS)	27
State Land Disposal Sites Listing (LDS)	2
State Military Cleanup Sites Listing (MCS)	0
State Bond Expenditure Plan (CA Bond Exp. Plan)	8
State Hazardous Waste and Substances Sites (Cortese)	7
State Proposition 65 Database (Notify 65)	11
State Waste Discharge System (WDS) List	27
State Drycleaners List	3
State Well Investigation Program (WIP)	1
California Environmental Protection Agency Hazardous Waste Information System (HAZNET)	359
Manufactured Gas Plants: A collection of potential manufactured gas plants from searched business directories	11

Source: EDR 2010c.
Note: Sites may be listed in more than one database.

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Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
1	Peerless Pumps	1000595609	1755 Broadway, Fresno, CA 93716	Map-3, EDR-27, Pg 3-175 of 415	Extremely Hazardous Substance Handler (EPCRA) - no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	400 ft NE and downgradient of BNSF Alignment	No	Low - Based on downgradient position and lack of incidences and violations
2	Lamoure's Cleaners	S106175697	1304 G Street, Fresno, CA 93706	Map-3, EDR-27, Pg 3-257 of 415	Dry cleaning and laundry services; DTSC: no violations reported; Fresno County CUPA: closed UST facility - no closure report.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	RCRA-SQG; Dry Cleaners; Fresno County CUPA	Adjacent to the west and upgradient of BNSF alignment	No	Low - Based on lack of incidences and violations
3	VOPAK USA Inc. (aka UNIVAR USA; aka Van Waters & Rogers, Inc.)	1000136187 S103624220	1152 G Street, Fresno, CA 93706	Map-3, EDR-27, Pg 3-281 of 415	Handler is engaged in the treatment, storage or disposal of hazardous materials and hazardous waste; facility has received notices of violations: Transporters - General, Generators - General, Financial Record Review, Compliance Evaluation Inspections; Facility Status Open - Remediation, RWQCB lead. Soil and soil vapor surveys in 1996 indicated the presence of PCE. Several monitoring wells were installed in 1996 and showed PCE in the underlying groundwater. In 1998 a vapor extraction system was installed and ran until 2004. Four new offsite SVE wells were installed during late 2008. An SVE system is currently being installed downgradient of the site to remediate soils impacted by VOCs migrating offsite.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/19/10	SLIC; RCRA-TSDF; RCRA-SQG; HAZNET; ENVIROSTOR; HWP	Adjacent to the west and upgradient of BNSF alignment	Yes	High - Based on proximity to alignment and unresolved soil and groundwater issues
4	Greyhound Bus Depot	S106175454	1033 Broadway (1033 H Street), Fresno, CA 93721	Map-3, EDR-27, Pg 3-296 of 415	Diesel; RWQCB; Open - preliminary site assessment workplan submitted.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	LUST	Adjacent to the east and downgradient of BNSF Alignment	Yes	Medium - Based on proximity to alignment and unresolved soil and groundwater issues
5	PG&E G Street Substation	S101480254	1131 G Street, Fresno, CA 93706	Map-3, EDR-27, Pg 3-301 0f 415	Open - Site Assessment; DTSC lead; the site is adjacent to a former mfg gas plant; however, was not part of the former plant. A PEA conducted found elevated levels of mercury, TPH, copper and vanadium. Site status is backlogged pending removal of mercury and TPH impacted soils. (Note: according to DTSC representatives, this work was completed in February 2010).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/19/10	HIST Cal-Sites; SLIC; ENVIROSTOR	200 feet SW and upgradient of BNSF alignment	No	Low - Based on status of remediation
6	PG&E Gas Plant Fresno 325 3A (aka Fresno #2; aka Gas Plant SQ-FK-FRS-2)	1000196845 1012008193	Block of F Street, between Mariposa and Fresno Street; and block of F Street and G Street between Tulare Street and Fresno Street, Fresno, CA 93706	Map-3, EDR-27, Pg 3-309 of 415	PG&E began manufacturing gas on this site in 1883 using coal to gas methods. Between 1890 and 1892, the coal-gas plant was dismantled and replaced with two oil burning water-gas generators. The plant was shut down in 1919. Site screening: 5/15/2007 DTSC completed a reassessment for U.S.EPA under the PA/SI grant. Known COCs = PAHs and metals (lead).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/19/10	CERCLIS; ENVIROSTOR; Manufactured Gas Plants	200 feet SW and upgradient of BNSF alignment	Yes	Medium - Based on proximity to alignment, upgradient position, and unresolved soil and groundwater issues
7	Fresno County Jail	U003788518	1155 M Street, Fresno, CA 93721	Map-3, EDR-39, Pg 3-363 of 415	Gasoline: RWQCB; Open - Site Assessment.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	2,200 ft NE and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
8	James Repair Shop	S106229766	1762 B Street, Fresno, CA 93711	Map-3, EDR-40, Pg 3-64 of 415	Gasoline; RWQCB; Open - Site Assessment; pollution characterization; soil only.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	2,175 ft SW and upgradient of BNSF alignment	No	Low - Based on distance

Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
9	Premier Valley Foods, Inc.	S103634292	1625 Tulare Street, Fresno, CA 93706	Map-3, EDR-27, Pg 3-323 of 415	Extremely Hazardous Substance Handler (EPCRA) - no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	Adjacent to the west and upgradient of BNSF alignment	No	Low - Based on lack of incidences; violations; and small quantities of materials handled
10	Level 3 Communications	S105124238	305 W. Napa, Fresno, CA 93706	Map-3, EDR-32, Pg 3-342 of 415	Extremely Hazardous Substance Handler (EPCRA) - no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	1,000 ft SW and upgradient of BNSF alignment	No	Low - Based on distance, lack of incidences and violations
11	Chevron #9-4374	S104868862	1160 Fresno Street, Fresno, CA 93706	Map-3, EDR-44, Pg 3-371 of 415	Gasoline; RWQCB; Open - Remediation, Remedial action (cleanup) underway; Drinking water aquifer affected.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	1,900 ft SW and upgradient of BNSF alignment	No	Low - Based on distance
12	California Dairies; (aka Danish Creamery Association)	1003888588 S106925154	755 F Street, Fresno, CA 93706 (aka 745 E Street)	Map-3, EDR-45, Pg 3-397 of 415	Fresno County CUPA; Extremely Hazardous Substance Handler (EPCRA) - no violations; Fresno County Environmental Health Dept. and SJVAPCD: Unauthorized releases of anhydrous ammonia (two incidences - 10/14/05 and 5/17/06).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA; EMI	750 ft SW and upgradient of BNSF alignment	No	Low - Based on distance, lack of incidences and violations
13	Abandoned Service Station	S104869033	655 G Street, Fresno, CA 93721	Map-3; EDR-45, Pg 3-397 of415	Gasoline: RWQCB; Open - Site Assessment; pollution characterization; drinking water affected.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	190 ft SW and upgradient of BNSF alignment	Yes	Medium - Based on proximity to alignment, upgradient position, and unresolved soil and groundwater issues
14	Trini's Beacon (aka Beacon #460; aka Trini's Oil Inc.)	U003971430	603 G Street, Fresno, CA 93706	Map-3; EDR-45, Pg 3-402 of 415	Gasoline: RWQCB; Open - Site Assessment; leak being confirmed.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	225 ft SW and upgradient of BNSF alignment	Yes	Medium - Based on proximity to alignment, upgradient position, and unresolved soil and groundwater issues
15	Valley Gas	S104404114	2139 S. Elm Ave, Fresno, CA 93706	Map-3; EDR-53, Pg 3-407 of 415	Gasoline; RWQCB; 1991 case closed; 2001 case: Open - Site Assessment; pollution characterization.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	2,000 ft SW and cross-gradient of BNSF alignment	No	Low - Based on distance and cross-gradient position
16	Former Caltrans Service Yard	1010082232	2312 & 2365 S. Tulip, Fresno, CA 93721	Map-3, EDR-Orph Summ, Pg 3-409; also Map 4, EDR-59, Pg 4-248 of 622	Facility has a known or suspect abandoned, inactive, or uncontrolled hazardous waste site. The Caltrans service yard operated from approximately 1918 to 1970. Tetrachloroethene (PCE) has been detected in areas surrounding this facility. Sampling of groundwater upgradient from the site indicates no contamination. This site has not been sampled.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/20/10	CERCLIS	Adjacent to the east and cross-gradient of BNSF Alignment	Yes	Medium - Based on proximity to alignment and unresolved contamination issues
17	Poverello House Property	1010082229	E. Belgravia Ave, Fresno, CA 93721	Map-3, EDR-Orph Summ, Pg 3-409; also Map-4, EDR-59, Pg 250 of 622	Facility has a known or suspect abandoned, inactive, or uncontrolled hazardous waste site. There are documented impacts to groundwater that may pose a threat to drinking water supplies. Impacts include PCE and TCE. U.S. EPA completed a preliminary assessment 9/9/2009. Based on currently available information contained in the report, U.S. EPA has determined that no further assessment is warranted. DTSC may require additional investigation.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/20/10	CERCLIS	130 ft SW and cross-gradient of BNSF alignment	Yes	Medium - Based on proximity to alignment and unresolved contamination issues

Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
18	Aqua Chlor	U004126355	2885 E. Jensen, Fresno, CA 93706	Map-3, EDR-Orph Summ. Pg 3-412; also Map-4, EDR-74, Pg 4-481 of 622	Diesel; RWQCB; after 7 USTs were removed, confirmation samples collected at 6 and 10 feet bgs indicated diesel range hydrocarbon impact with the deeper sample also having ethylbenzene, xylenes, and gasoline range hydrocarbons. Open case as of 1/5/2009.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/20/10	LUST; ENVIROSTOR	2,100 ft SW and cross-gradient of BNSF alignment	No	Low - Based on distance and cross- gradient position
19	Purity Oil Sales	1000265027 S100833431	3265 S. Maple, Fresno, CA 93725; 3254 S. Maple, Fresno, CA 93725	Map-5, EDR-NPL, Pg 5-3 of 156; Map-4, EDR-NPL, Pg 4-606 of 622	Currently on the U.S. EPA Final NPL. Groundwater at the site is contaminated with VOCs, SVOCs, iron, and manganese. Soil at the site contains high levels of lead, PAHs, and several organic compounds. The buried waste contains benzene, toluene, PAHs, methylene chloride, phthalates, acetone, other solvents, lead and various metals. Black, tarry, sludge with a iodic pH as low as 1.0 continues to ooze from portions of the site. A synthetic cover and impermeable cap have been installed; however, there is concern that if low pH liquids come into contact with the geosynthetic clay liner, its permeability characteristics could be adversely affected and might allow infiltration of water into the waste. A ROD amendment to modify the OU-2 (soils) remedy was completed in June 2006. Groundwater monitoring continues at OU-1(groundwater); although an extensive pump and treat system is in place, the final groundwater remedy is pending.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/20/10	NPL; CERCLIS; ROD; CA Bond Exp Plan; others	1,300 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and groundwater flow direction
20	Clifford H Tutelian	S108202667	812 Van Ness Ave, Fresno, CA 93721	Map-4, EDR-41, Pg 4-52 of 622	Heating oil/fuel oil; RWQCB; Open – referred; sample results from beneath the underground storage tank indicated that an unauthorized release of fuel oil petroleum hydrocarbons occurred.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	LUST	1,400 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and downgradient position
21	Archives Record Storage	S106174622	742 Fulton Ave, Fresno, CA 93721	Map-4, EDR-41, Pg 4-58 of 622	Diesel; RWQCB; Open - Site Assessment; leak being confirmed.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	1,000 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
22	California Chrome	1000252349	220 Broadway, Fresno, CA 93721	Map-4, EDR-41, Pg 4-123 of 622	Extremely Hazardous Substance Handler (EPCRA) – no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	750 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance, cross-gradient position, and lack of incidences and violations
23	DFA of California	S104871510	1855 S. Van Ness, Fresno, CA 93721	Map-4, EDR-41, Pg 4-128 of 622	Dry cleaning and laundry services; DTSC: no violations reported.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	DRYCLEANERS	1,150 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
24	Commercial Electroplating Inc.	1000298161	1937 S. Cherry, Fresno, CA 93721	Map -4, EDR-41, Pg 4-145 of 622	Extremely Hazardous Substance Handler (EPCRA); U.S. EPA; multiple violations noted (2003 to 2006); generators: general; generators: pretransport.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	300 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance, cross-gradient position and lack of incidences
25	United States Cold Storage	S105124193	2539 E. Woodward, Fresno, CA 93721	Map-4, EDR-41, Pg 4-154 of 622	Extremely Hazardous Substance Handler (EPCRA); no violations noted.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	Adjacent to the east and cross-gradient of BNSF Alignment	No	Low - Based on lack of incidences and violations
26	Artic Glacier-Jack Frost Ice	1003424893	2003 S. Cherry, Fresno, CA 93721	Map-4, EDR-41, Pg 4-155 of 622	Extremely Hazardous Substance Handler (EPCRA); no violations noted.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	Adjacent to the east and cross-gradient of BNSF Alignment	No	Low - Based on lack of incidences and violations

Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
27	Rumbley Property	S104816233	2160–2180 S. Van Ness, Fresno, CA 93721	Map-4, EDR-41, Pg 4-168 of 622	Diesel; RWQCB; Open - Remediation (9-6-2006), remediation plan submitted – no closure report available; Drinking water affected.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	On and adjacent to the east of BNSF Alignment	Yes	Medium - Based on proximity to alignment
28	Chris Sorensen Facility	1010082228 S107736126	2205 S. Van Ness, Fresno, CA 93721	Map-4, EDR-41, Pg 4-172 of 622	U.S. EPA - PASI; inactive - needs evaluation.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/20/10	CERCLIS; ENVIROSTOR	On and adjacent to the east of BNSF Alignment	Yes	Medium - Based on proximity to Alignment and unresolved contamination issues
29	(Former) Fresno Fire Department Headquarters	S101622172 S106175230 U003788409	450 M Street, Fresno, CA 93721	Map-4, EDR-43, Pg 4-179 of 622	Gasoline: RWQCB; Open - Site Assessment; leak being confirmed.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	2,200 ft NE and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
30	MECLEC	S101480204	1956 S. Orange, Fresno, CA 93702	Map-4, EDR-51, Pg 4-219 of 622	Extremely Hazardous Substance Handler (EPCRA) - no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA; ENVIROSTOR	4,100 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance, cross-gradient position, and lack of incidences and violations
31	Zacky Farms Turkey Plant	S106176887	2222 S. East Ave, Fresno, CA 93725	Map-4, EDR-57, Pg 4-228 of 622	Extremely Hazardous Substance Handler (EPCRA) - no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	500 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance, cross-gradient position, and lack of incidences and violations
32	RM Wade and Co.; (aka Globe-Weis Div.; aka Central Valley Manufacturing, Inc.)	S107737116 1000162251 1000289077	2851 E. Florence, Fresno, CA 93721	Map-4, EDR-59, Pg 4-236 of 622	VOCs (PCE and TCE); U.S. EPA - PASI; inactive - needs evaluation; no violations found; sampling under the floor of the manufacturing building shows evidence of VOCs. The site is up gradient of a PCE plume. Other sites up gradient have shown not to be a source of the plume. Ongoing investigations by DTSC and the RWQCB of the South Fresno Regional Groundwater Plume (#59 below), suggest that the source of the PCE is further south than this site (RM Wade and Co). Investigation of the Wade site failed to identify the site as a source as no PCE or PCE-containing materials have ever been used there. PCE concentrations in groundwater are consistent with other sites in the vicinity affected by plumes emanating further south. Investigations are ongoing the entire vicinity, including a significant stretch of both HST alignment alternatives.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/GeoTracker website database accessed 1/21/10	CERCLIS; ENVIROSTOR	100 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on proximity to the alignment, cross-gradient position, and lack of incidences and violations
33	Vacant Lot APN 48018107 **(combined with #34 below)**	S107737517	2368 S. Grace, Fresno, CA 93721	Map-4, EDR-59, Pg 4-253 of 622	U.S. EPA - PASI; inactive - needs evaluation (3/20/06); PCE and TCE were detected in groundwater at a location approximately 450 ft downgradient of the property. A U.S. EPA discovery document was completed 3/8/06.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/21/10	ENVIROSTOR	Adjacent east of the BNSF Alignment	Yes	Medium - Based on proximity to alignment and unresolved contamination issues

Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
34	Vacant Lot APN 48018108 **(combined with #33 above)**	S107737518	2376 S. Grace, Fresno, CA 93721	Map-4, EDR-59, Pg 4-255 of 622	U.S. EPA - PASI; inactive - needs evaluation (3/20/06); PCE and TCE were detected in groundwater at a location approximately 450 ft downgradient of the property. A U.S. EPA discovery document was completed 3/8/06.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/21/10	ENVIROSTOR	Adjacent east of the BNSF Alignment	Yes	Medium - Based on proximity to alignment and unresolved contamination issues
35	California Diesel Repair **(combined with #36 below)**	S106953262 1010417092	2396 S. Railroad, Fresno, CA 93721	Map-4, EDR-59, Pg 4-266 of 622	U.S.EPA - PASI; Inactive - needs evaluation (3/20/06); results of onsite soil sampling have documented release of petroleum products to shallow soils. There have been impacts to groundwater, which may pose a threat to drinking water supplies. U.S. EPA completed a preliminary assessment 9/9/2009. Based on currently available information contained in the report, U.S. EPA has determined that no further assessment is warranted. DTSC and RWQCB may require additional investigation.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/21/10	CERCLIS; ENVIROSTOR	On BNSF alignment	Yes	Medium - Based on proximity to alignment and unresolved contamination issues
36	Anderson Clayton **(combined with #35 above)**	S104403982	2396 S. Railroad, Fresno, CA 93721	Map-4, EDR-59, Pg 4-271 of 622	Gasoline; RWQCB; Open - Site Assessment (9/3/87), pollution characterization; extent of contamination has not been determined; site assessment work plan requested 12/3/08.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	On BNSF alignment	Yes	Medium - Based on proximity to alignment and unresolved contamination issues
37	Guild Wineries and Distilleries (aka Gibari Winery; aka B Cribari & Sons Winery)	1000593662	3223 E. Church, Fresno, CA 93725	Map-4, EDR-59, Pg 4-276 of 622	Extremely Hazardous Substance Handler (EPCRA); no violations noted. Former LUST site - closed status.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	300 ft NE and cross-gradient of BNSF alignment	No	Low - Based on distance, cross-gradient position, and lack of incidences and violations
38	Former Burlington Northern Santa Fe Ice House (aka Atchison Topeka Santa Fe Ice House; aka Former Calwa Ice Plant; others; aka Former BNSF Ice House)	S105481911 S106483535	3090 E. Church, Fresno, CA 93721	Map-4, EDR-59, Pg 4-279 of 622	Chromium; hexavalent chromium; DTSC. Ice was produced at the site location from about 1911 to the late 1960s. The ice plant was decommissioned between October 1969 to March 1971. Information available indicates that brine tanks were used at the ice-making plant. Chromium has been detected in soil and groundwater samples collected at the site. 1/10/2002 Open - Case Begin Date; 1/31/2003 Open - Site Assessment; 10/20/2004 Open - Remediation; 7/9/2007 Open - Remediation.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/22/10	CORTESE; RESPONSE; ENVIROSTOR; SLIC	On and adjacent to BNSF Alignment		High - Based on proximity to alignment and unresolved surface and subsurface contamination issues
39	Melo's Gas & Gear	S108225952	2811 E. Church, Fresno, CA 93706	Map-4, EDR-59, Pg 4-294 of 622	Extremely Hazardous Substance Handler (EPCRA) - no violations	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	725 ft SW and cross-gradient of BNSF alignment	No	Low - Based on distance, cross-gradient position, and lack of incidences and violations

Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
40	FMC Corporation; (aka FMC Corporation - Ag Chemical Division)	S106486061 S100833392 S100676286	2501 S. Sunland, Fresno, CA 93725	Map-4, EDR-59, Pg 4-303 of 622	Ag Chemicals; U.S. EPA, RWQCB, DTSC; FMC is an agricultural chemical formulation plant. Wash and rinse water produced during chemical formulation and support operations along with storm water runoff have, in the past, been discharged to surface impoundments, an open field and dry well sat the site. These discharges have resulted in the contamination of several areas onsite. Onsite soils and groundwater beneath the site have been contaminated with a wide variety of agricultural chemicals, including DDT, endrin, toxaphene, dieldrin and ethion. Groundwater beneath the site is contaminated. The site is fenced and posted and access is controlled.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/22/10	CERCLA; RCRA; CA Bond Exp. Plan; RESPONSE; Geotracker LUFT Site; Toxic Pits; SLIC; WMUDS/SWAT	200 ft NE and cross-gradient of BNSF Alignment	Yes	High - Based on proximity to alignment and unresolved surface and subsurface contamination issues
41	PDM Steel Service Center	S105557592	4005 E. Church, Fresno, CA 93725	Map-4, EDR-60, Pg 4-310 of 622	Metals; DTSC; site soil was contaminated by hazardous substances, including lead and chromium at concentrations exceeding U.S. EPA PRGs for industrial sites. Subsequent removal actions were conducted to the extent that proponents believed and reported that the concentrations of lead and chromium remaining onsite had been reduced to levels substantially below the industrial PRGs. Proponent has proposed to enter into a voluntary cleanup agreement with DTSC for DTSC's review of this removal work conducted without DTSC oversight. Preliminary assessment 6/28/02; Voluntary Cleanup Agreement completion 6/28/02.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/25/10	VCP; ENVIROSTOR	4,100 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
42	Weir Floway Inc. (aka Peabody Floway; aka Floway Pumps; aka Vendo site)	S104241813 S104404097	2494 S. Railroad, Fresno, CA 93707	Map-4, EDR-63, Pg 4-317 0f 622	TPH, Chromium, TCE; DTSC; during preparations by Weir Floway, Inc., in March 1991 to erect a metal building on an existing foundation, a 300-gallon UST tank was discovered, which prompted an investigation to determine the extent of petroleum wastes associated with past releases from the tank. It was determined that soil underlying parcels 12 and 13 had been impacted with petroleum waste constituents from various past operations on the parcels. It was also determined that chromium and TCE were present in groundwater underlying and downgradient of parcel 18. According to the Envirostor Website, the case was completed - case closed 3/8/2000.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/25/10	CORTESE; RESPONSE; ENVIROSTOR; SLIC	On BNSF Alignment	Yes	High - Based on proximity to Alignment and potential for unresolved subsurface contamination issues
43	Jefferson Smurfit Container Corporation (aka Container Corporation of America)	1000395879	2525 S. Sunland, Fresno, CA 93725	Map-4, EDR-66, pg 4-356 of 622	RCRA-SQG with multiple violations; handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	RCRA-SQG; FINDS; HAZNET; Fresno County CUPA	500 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on proximity to the alignment, cross-gradient position

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Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

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44	Former Valley Foundry and Machine Works (aka AMETEK, Inc. Microfoam Division)	S106153522 1000399883	2510 S. East Ave, Fresno, CA 93706	Map-4, EDR-69, Pg 4-372 of 622	PCE, TCE; DTSC; Valley Foundry operated at the property between 1949 and 1969. The facility was originally developed for the manufacturing and repairing of winemaking equipment and small farm equipment. Operations at the facility were continued after its purchase by Ametek in 1969. Information indicates that these operations continued until 1986. Between 1986 and 1991 polypropylene foam packaging materials were manufactured. From about 1991 and until plant closure in 1995, operations at the facility were limited to the handling and repackaging of foam products. An order for the site was issued on January 20, 2004. Contaminants detected in groundwater samples collected from locations downgradient of the site have included trichlorofluoromethane (Freon 11), TCE, and PCE.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/26/10	HIST Cal-Sites; SLIC; CORTESE; RESPONSE; ENVIROSTOR	500 ft SW and cross-gradient of BNSF alignment	No	Low - Based on distance and cross-gradient position
45	California-Fresno Oil Company	S106248152	2585 S. East, Fresno, CA 93706	Map-4, EDR-69, Pg 4-389 of 622	Gasoline; RWQCB; contaminated UST site.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	900 ft SW and cross-gradient of BNSF alignment	No	Low - Based on distance and cross-gradient position
46	Shell Service Station (aka Jensen Avenue Shell); (aka Shell Oil Company); (aka Mooradian Shell)	S103065887 1000288814 S101581401	2595 S. East, Fresno, CA 93706	Map-4, EDR-69, Pg 4-396 of 622	Gasoline; RWQCB; Open - post-remedial action monitoring; drinking water affected.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST; Fresno County CUPA	900 ft SW and cross-gradient of BNSF alignment	No	Low - Based on distance, cross-gradient position, and status of remediation
47	Ryder Truck Rental	1000211873	2701 E. Byrd, Fresno, CA 93706	Map-4, EDR-70, Pg 4-411 of 622	Gasoline; RWQCB; 1987 case closed; 2006 case: Open - Remediation.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	LUST; Fresno County CUPA	1,800 ft SW and cross-gradient of BNSF alignment	No	Low - Based on distance, cross-gradient position, and status of remediation
48	Mission Uniform & Linen Service	S106175852	2555 S. Orange, Fresno, CA 93725	Map-4, EDR-71, Pg 4-418 of 622	Extremely Hazardous Substance Handler (EPCRA) - no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	1,000 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
49	Swift Transportation (aka Fleming Foods; aka Fleming Companies, Inc.)	1000300037	2797 S. Orange, Fresno, CA 93726	Map-4, EDR-72, Pg 4-473 of 622	Extremely Hazardous Substance Handler (EPCRA) - no violations; note site is also a closed UST site with no regulatory actions or violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	On BNSF Alignment	No	Low - Based on lack of incidences, violations, and small amounts of materials handled

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50	M&S Texaco; (aka Mohawk Petroleum Corp)	S105023853	2619 S. East, Fresno, CA 93706	Map-4, EDR-74, Pg 4-484 of 622	Gasoline; RWQCB; Open - Remediation, remediation underway; drinking water affected.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	1,900 ft SW and cross-gradient of BNSF alignment	No	Low - Based on distance and cross-gradient position
		S101480159								
51	Calwa Yard Solid Waste Site	S104156460	3901 E. Vine, Fresno, CA 93725	Map-4, EDR-77, Pg 4-490 of 622	Solid Waste Site - Class III - Landfills for non-hazardous solid wastes.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	WMUDS/SWAT	1,400 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
52	Professional Asbestos Removal Corp; (aka PARC Environmental; aka Insulation Contracting & Supply)	1000228675 S109466552 1000425425	2706 S. Railroad, Fresno, CA 93725	Map-4, EDR-78, Pg 4-492 of 622	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).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA; RCRA-NonGen	The BNSF Alignment passes through the site	Yes	High - Based on proximity to the alignment (through the site) and unresolved multiple violations
53	W.S. West; (aka Diversey Lever, Inc., Babson West)	S105418694 1001217646	2717 S. 4th Street, Fresno, CA 93725	Map-4, EDR-79, Pg 4-510 of 622	Extremely Hazardous Substance Handler (EPCRA) - no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	500 ft SW and cross-gradient of BNSF alignment	No	Low - Based on distance, cross-gradient position, and lack of incidences and violations
54	Truck City	S101581926	2768 S. Railroad, Fresno, CA 93725	Map-4, EDR-80, Pg 4-517 of 622	Diesel; RWQCB: Open - Site Assessment, pollution characterization; drinking water affected.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	The BNSF Alignment passes through the site	No	High - Based on proximity to the alignment (through the site) and unresolved soil and groundwater issues
55	Wilbur & Ellis; (aka Wilbur-Ellis)	S109422410 S105124216	2903 S. Cedar, Fresno, CA 93725	Map-4, EDR-84, Pg 4-538 of 622	Extremely Hazardous Substance Handler (EPCRA) - no violations; Information available indicates that the facility was constructed in 1946 and that until 1952 fertilizer production activities were conducted. Thereafter, information available indicates that pesticides were manufactured at the facility. Information available indicates that soil and groundwater contamination was detected in the 1980s. There were apparently some soil removal actions in the 1980s also. Review of a CERCLA SITE inspection report dated 4/13/1992 and other available information indicates that a preliminary endangerment assessment report is needed. Inactive - needs evaluation as of 5/18/09.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/27/10	CERCLIS; SLIC; Fresno County CUPA	800 ft NE and cross-gradient of BNSF Alignment	Yes	Medium - Based on proximity to alignment and unresolved contamination issues
56	CL Bryant; (aka Unocal Bulk Plant; aka Pacific Pride)	S106248109 U004126373	3220 S. Parkway, Fresno, CA 93722	Map-4, EDR-92, Pg 4-596 of 622	Extremely Hazardous Substance Handler (EPCRA) - no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HAZNET; EMI	On BNSF alignment and BNSF Alignment	Yes	Medium - Based on proximity to alignment and large amount of materials (fuels) handled

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57	Orange Avenue Disposal Site (aka Orange Avenue Landfill) **(Site is part of CARTS - see #61 below)**	S104404152 S101480233 1000315168	3280 S. Orange Ave, Fresno, CA 93725	Map-4, EDR-94, Pg 4-600 of 622	Diesel and other non-petroleum hydrocarbon VOCs; RWQCB and others; Open - Site Assessment, pollution characterization. This is an approximately 39-acre solid-waste landfill located in the city of Fresno on the corner of S. Orange Ave and E. Muscat Ave. It has been undergoing closure under the oversight of the Integrated Waste Management Board, Fresno County Environmental Health, as the lead agency for closure, and the RWQCB. The Board has been providing oversight for groundwater investigation activities since the early 1990s. The facility reached capacity in mid-2007 and the landfill's last day of accepting waste was June 26, 2007.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/27/10	HIST CORTESE; LUST; SLIC; Fresno County CUPA; ENVIROSTOR (others)	200 feet west of BNSF Alignment	Yes	Low - Based on distance and cross-gradient position
58	PG&E - Fresno Service Center	S100350995	California and Orange Avenues 93702	Map-4, EDR-Orph Summ, Pg 4-613 of 622	PCBs and oil-containing waste; RWQCB and DTSC. Remediation has been ongoing since 1984. During 2005, PG&E developed risk-based clean-up levels for PCBs and for mineral oil. DTSC staff have reviewed a site investigation/risk evaluation and transport analysis work plan, and related reports that presented the results of various activities. DTSC has indicated that the approved clean-up criteria are contingent on recording a recommended deed restriction.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/27/10	VCP; ENVIROSTOR	3,300 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
59	South Fresno Regional Groundwater Plume	S105628340	Area north of Church Ave, east of Golden State Boulevard, adjacent to Railroad and Van Ness Ave, south of Woodward Ave, and west of Gearhart Street	Section 3 - County Level Orph Summ Sites; Pg 163 of 266	DTSC and RWQCB. The plume is located in the industrial area of south Fresno and appears to be the result of releases from multiple sources. Many of the nearby facilities have been in operation since WW II and some properties have been used for industrial purposes since the early 1900s. The DTSC has been working with several PRPs to investigate this comingled groundwater plume. Hazardous substances present in groundwater beneath the site include certain VOCs, metals, and pesticides. Since the early 1980s, assessment work has been completed by the RPs for two nearby sites. OU 1 is in the area north of the intersection of Church Ave and S. East Ave, west of the eastern boundary of the BNSF Railroad right-of-way, east of Van Ness Ave, north of Golden State Blvd and south of Woodward Ave. The Vendo and Floway Companies are the RPs for OU1 obligations. OU 2 is in the area north of the FMC site and east of the eastern boundary of the BNSF Railroad right-of-way, west of S. Gearhart Street and south of Woodward Ave. The FMC Company is the RP for OU2 obligations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/8/10	HIST Cal-Sites; CORTESE; RESPONSE; FINDS; ENVIROSTOR	On BNSF Alignment	Yes	High - Based on proximity to alignment and unresolved groundwater contamination issues
60	Burlington Northern Santa Fe Disposal Site	S109349377	2989 S Golden State Blvd, Fresno, CA 93725	Map-5, EDR-91, Pg 5-18 of 156	Solid-waste disposal site; pre-regulations; monitored and inspected by DTSC.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	SWF/LF	1,200 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position

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Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
61	Cedar Avenue Recycling and Transfer Station (CARTS) **(See #57 above)**	S105678089 1000483034 S101480041	3457 S. Cedar, Fresno, CA 93725	Map-5, EDR-92, Pg 5-51 of 156	Construction/demolition, green materials, industrial, inert, mixed municipal, wood waste; Fresno County; low-priority site. Contamination levels are slightly elevated. Site is surrounded by a landfill and other possible groundwater contamination sources. Adjacent landfill appears to be related. 10/99: contamination levels only slightly greater than MCLs. Soil levels < PRGs. Low-level groundwater contamination of chromium, cadnium, and carbon TET.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/28/10	SWF/LF; CERCLIS; CHMIRS; ENVIROSTOR	On BNSF Alignment	Yes	Medium - Based on proximity to alignment and unresolved contamination issues
62	Venture Out (RV Sales)	S104161626	3672 S. Maple, Fresno, CA 93725	Map-5, EDR-97, Pg 5-101 of 156	Gasoline: RWQCB; Open - Site Assessment. Leak being confirmed. (1990?)	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	2,200 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
63	RV Jensen, Inc.	S105791149	4021 S. Maple, Fresno, CA 93725	Map-5, EDR-100, Pg 5-103 of 156	Gasoline/diesel; RWQCB; Open - Remediation Underway. Drinking water affected (2006).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	1,000 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
64	Chevron Fuel Terminal	S106486249	4029 S. Maple, Fresno, CA 93725	Map-5, EDR-100, Pg 5-109 of 156	PCE, TCE, 1,2-DCA; RWQCB; Open - Site Assessment (1990?).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	SLIC; Notify 65	1,600 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
65	Wilbur - Ellis Company (aka Agricultural Manufacturing Co)	1004439539	4106 S. Cedar, Fresno, CA 93725	Map-5, EDR-101, Pg 5-110 of 156	Extremely Hazardous Substance Handler (EPCRA). No violations noted.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	SSTS; Fresno County CUPA	On BNSF Alignment	Yes	Medium - Based on proximity to Alignment
66	Kinder Morgan - Fresno	S105939464	4149 S. Maple, Fresno, CA 93725	Map-5, EDR-102, Pg 5-111 of 156	Gasoline; RWQCB; Open - Site Assessment - under investigation (2005).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	SLIC; CHMIRS	750 ft NE and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
67	Malaga Food Center	S101581373 S104573677	4412 S. Maple, Fresno, CA 93712	Map-5, EDR-104, Pg 5-120 of 156	Gasoline; RWQCB; Open - Site Assessment - under investigation (2006). Groundwater affected.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	1,500 ft east and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
68	Bowen Engineering & Environmental	S105870328	4664 S. Cedar, Fresno, CA 93725	Map-5, EDR-107, Pg 5-126 of 156	Hazardous waste generator.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA; HWT	On BNSF Alignment	Yes	Medium - Based on proximity to alignment
69	Jefferson Inert Disposal Site	S102359974	Jefferson and Maple, Fresno, CA 93722	Map-5, EDR-112, Pg 5-132 of 156	Inert debris; engineered landfill; construction debris.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	SWLF/LF; HIST CORTESE; Fresno County CUPA	1,300 ft east and cross-gradient of BNSF Alignment	No	Low - Based on distance and cross-gradient position
70	Fowler Packing Company	1003421848	8570 S. Cedar, Fresno, CA 93725	Map-6, EDR-126, Pg 6-6 of 39	Extremely Hazardous Substance Handler (EPCRA): no violations. Former LUST clean-up site (closed case).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA; HIST CORTESE; LUST	Adjacent to the west and downgradient of BNSF Alignment	No	Low - Based on lack of incidences and violations and downgradient position
71	Bowles Service Station (aka Steve J Christensen)	S109117562	2010 E Manning Ave, Fresno, CA 93725	Map-6, EDR-128, Pg 6-16 of 39	Gasoline; RWQCB; Open - Site Assessment; leak being confirmed.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	LUST; Fresno County CUPA	1,200 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position

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72	Vie-Del Company #1	S106176772	11903 S. Chestnut, Fresno, CA 93725	Map-6; EDR-134, Pg 6-31 of 39	Extremely Hazardous Substance Handler (EPCRA): no violations; also an active UST/AST site.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA	Adjacent to the east and upgradient of BNSF Alignment	No	Low - Based on proximity to alignment and upgradient position; no incidences or violations have been reported
73	Chestnut Avenue Sanitary Landfill; (aka Thrifty Best Rubbish Service; aka Browning Ferris Industries)	S106487474 1011978257 S102406089 1011978257	12825 S. Chestnut, Fresno, CA 93725	Map-7, EDR-137, Pg 7-4 of 23	Solid-waste facility – closed site; RWQCB (and others); contaminated site– groundwater (1965?); no violations found.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	Fresno County CUPA; EMI; LDS; CA WDS; HIST CORTESE (others)	Adjacent to the west and downgradient of BNSF Alignment	Yes	Medium - Based on proximity to alignment
74	Hanford Inert Landfill (aka Old Hanford Landfill)	S109821512	7869 Houston, Hanford, CA 93230	Map-11, EDR Orph Summ, Pg 11-1 of 3	Inert debris; engineered landfill; construction debris (closed site).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	SWF/LF	1,300 ft west and downgradient of East Hanford A-1 alignment	No	Low - Based on distance and downgradient position
75	Recycle Depot Green Material C&G	S109689884	10716 8th Ave, Hanford, CA 93230	Map-14, EDR-155, Pg 14-4 of 20	Chipping and grinding; green waste only; no violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	SWF/LF	3,000 ft west and downgradient of BNSF Alignment and East Hanford A-1 alignment	No	Low - Based on distance and downgradient position
76	Weaver's Tree Services	S103442429	Hanford-Armona Rd at 7th Ave 93230	Map-14, EDR-157, Pg 14-9 of 20	Solid-Waste Site-Class III – Landfills for non-hazardous solid wastes.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	WMUDS/SWAT	1,800 ft east and upgradient of BNSF Alignment	No	Low - Based on distance
77	Hanford Facility (aka Baker Commodities, Inc. - Kings)	S105256701	7480 Hanford-Armona Rd, Hanford, CA 93230	Map-14, EDR-158, Pg 14-10 of 20	Process waste (waste produced as part of the industrial/manufacturing process. Baker Commodities is also a disposal service for large-animal carcasses, such as dairy cattle); washwater waste (product washwater wastes: e.g., photo reuse wastewater, vegetable washwater); no violations; also an active UST/AST site.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	CA WDS; HAZNET; LDS	Adjacent to the east and upgradient of BNSF Alignment	Yes	Medium - Based on proximity to alignment
78	Hanford Municipal Solid Waste Disposal Site; (aka Kings Waste and Recycling Authority)	S101049400 S102360529	7803 Hanford-Armona Rd (Hanford-Armona Rd and 8th Ave), Hanford, CA 93230	Map 14, EDR-159/160, Pg 14-16 of 20	Large-volume transfer/proc facility; agricultural, construction/demolition, industrial, mixed municipal, other designated, tires, wood waste.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	WMUDS/SWAT; SWF/LF; HIST CORTESE	Adjacent to the west and downgradient of East Hanford A-1 alignment	Yes	Medium - Based on proximity to alignment
WH-1	Laton Disposal Site	S102360012	Clovis Ave & Blanchard Ave, Laton, CA	EDR-2, Pg 3 of 64	Solid Waste Facility- Site Closed	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	SWF/LF	Site is 1,900 feet West of the West Hanford Bypass footprint and down to cross gradient	No	Low - Based on distance from the alignment alternative

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WH-2	Louie Bernard	U001581848	21051 Kingston Grade, Laton, CA 93242	EDR-5, Pg 6 of 64	Farm- M.V. Fuel containing Lead	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	HIST UST	Site is 1,000 feet east of the West Hanford Bypass footprint and cross gradient	No	Low - Based on distance from the alignment alternative
WH-3	Pry's Ag Services Inc	S101480484	13380 Excelsior Ave, Hanford, CA 93230	EDR-6, Pg 7 of 64	*Historical; Ag Chemical Hazard	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	ENVIROSTOR	Ag Chemicals in the West Hanford Bypass footprint of the east-side grade separation	Yes	High - Based on proximity to alignment footprint for the grade separation
WH-4	Warmerdam Farms Inc	S110761597	13750 Elder, Hanford, CA 93230	EDR-7, Pg 8 of 64	Ag Chemicals	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	CUPA Listings	Ag chemicals in the West Hanford Bypass west-side grade separation footprint	Yes	Medium - Based on proximity to alignment footprint for the grade separation
WH-5	Canady 13th Ave Site	S102008344	9431 13th Ave, Hanford, CA 93230	EDR-8, Pg 8 of 64	Site located east of the West Hanford Bypass is closed; DTSC No further Action Required- There is a school on the site now.	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	VCP; ENVIROSTOR	NO FURTHER ACTION	No	Low - Based on distance from the alignment alternative and NFRAP status
WH-6	Verdegaal Bros. Inc	U001581694	13821 Lacey Blvd, Hanford, CA 93230	EDR-10, Pg 12 of 64	Nitrate; Other inorganics/ salt	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	SLIC; ENVIROSTOR; CA BOND EXP. PLAN	Site is 2,200 feet west (cross gradient) of the furthest point on the West Hanford Bypass footprint and canal realignment	No	Low - Based on distance from the alignment alternative
WH-7	K&D Liquor & Food	S104570149	10915 Hanford Armona Rd, Hanford, CA 93230	EDR-11, Pg 18 of 64	Complete-Case Closed	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	HIST CORTESE LUST HAZNET	Site is 1.5 miles east of West Hanford Bypass footprint. Corner of Hanford Armona Road and Jones Street east of11th Ave- Site Case Closed	No	Low - Based on distance from the alignment alternative
WH-8	Johnson's Auto and Tractor	S101295337	10966 14th Ave, Armona, CA 93202	EDR-12, Pg 26 of 64	Open Site Assessment- Drinking Water Aquifer affected (GASOLINE).	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	HIST CORTESE LUST	Site is located at the corner of 14th Avenue and 6th Street in Armona, adjacent south of the long SJVRR footprint appendage of the West Hanford Bypass	Yes	High - Based on proximity to alignment footprint for the SJVRR grade separation
WH-9	Recycling Project	S104310364	12499 Idaho Ave, Hanford, CA 93230	EDR-17, Pg 31 of 64	Active Agriculture facility	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	WDS	Site is more than 1,800 feet west of the grade separation footprint for the Idaho Avenue crossing (Idaho Ave and 12th Ave) of the West Hanford Bypass.	No	Low - Based on distance from the alignment alternative

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WH-10	Zonneveld Dairies Inc	S110761622	11891 Jackson Avenue, Hanford, CA (S/E corner of 12th Ave and Jackson Ave)	EDR-18, Pg 32 of 64	Active Agriculture facility-Ag Chemicals	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	CUPA Listings	Site appears to be an equipment storage location and processing area for cattle feed-possibly Ag Chemicals stored on site-site is within the West Hanford Bypass footprint for the grade separation at 12th Ave and Jackson Ave	Yes	High - Based on proximity to alignment footprint for the grade separation
WH-11	Hadley Yocum-Lakeside Bar	S100227907	10001 Kansas Ave, Hanford, CA93230	EDR-21, Pg 33 of 64	Open Site Assessment- LUST/ GW monitoring- Corrective Action Plan/ Remedial Action Plan (Drinking Water Aquifer affected-GASOLINE)	EDR DataMap Environmental Atlas - EDR Inquiry 3180750.1s	HIST CORTESE	Site is within and adjacent to the east side of the West Hanford Bypass grade separation at Kansas Avenue.	Yes	High - Based on proximity to alignment footprint for the grade separation
79	Corcoran Sanitary Landfill	S102360526	6061 Nevada Ave, Corcoran, CA 91206	Map-17, EDR-164, Pg 17-3 of 137	Closed solid-waste disposal site.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	SWF/LF; notify 65	1,000 feet east of the Through Hanford A1 alignment - upgradient; 500 feet east of the East Hanford A1 alignment - upgradient; 1,600 feet west of the Through Hanford - Corcoran Bypass alignment - downgradient; 3,400 feet west of the East Hanford - Corcoran Bypass alignment - downgradient	Yes	High - Based on proximity to west alignment
80	Puregro-Corcoran	1000202637 S106486075 S101272735	6991 Nevada Ave, Corcoran, CA 93212 (SE corner of Hwy 43 and Nevada Ave)	Map-17, EDR-165, Pg 17-8 of 137	DDE, DDT, toxaphene, phenoxyherbicides, and sodium chlorate. The 10-acre site consists of a rectangular parcel developed to house a fertilizer and pesticide mixing and retail operation. Equipment and structures related to the operation have been removed except for one metal warehouse building. Buried waste and spillage of materials contributed to the contamination of the site soils and groundwater. Investigations identified DDT, toxaphene, and nitrates as the main contaminants of site soils. Elevated levels of nitrates and arsenic were detected in groundwater. Response actions involved the excavation and off-site disposal of all buried waste and contaminated surface and subsurface soil, and the closure of the surface impoundment. Through the response actions, the site has been remediated to conditions appropriate for industrial/commercial use. A groundwater pilot study involving phytoremediation has been conducted and has been determined to be ineffective for the site. Additional groundwater investigations are being conducted to acquire additional information needed for a health-risk assessment for the site groundwater (2007).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/29/10	HIST Cal-Sites, CORTESE; HIST CORTESE: RESPONSE: ENVIROSTOR; SLIC	Less than 800 ft west of East Hanford A-1 alignment; 4,700 ft west of East Hanford-Corcoran Bypass	Yes	High - Based on proximity to west alignment

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81	Texaco Star Mart #3 - Buford Oil Co. (aka Quik Trip #3)	U000039148	1221 Whitley Ave, Corcoran, CA 93212	Map-17, EDR-177, Pg 17-81 of 137	Gasoline; RWQCB; Open – Remediation Underway - drinking water affected (2006); Human Health Risk Evaluation Work Plan (6/24/08).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	1,800 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
82	John's Union 76 #0861 - Union Oil Company of California	S101295353	1204 Whitley Ave, Corcoran, CA 93212	Map-17, EDR-177, Pg 17-87 of 137	Gasoline; RWQCB; Open – Remediation Underway - drinking water affected (2005); Feasible Source Control not performed - 7/27/2009: SVE to begin 3rd or early 4th quarter 2009.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	1,500 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
83	Dan's Service Center (aka Dan's ARCO)	S102428621	1120 Whitley Ave, Corcoran, CA 93212	Map-17, EDR-177, Pg 17-91 of 137	Gasoline; RWQCB; Open - Site Assessment – Pollution Characterization; drinking water affected (1994).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	1,400 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
84	Rio Grande Market	S104161174	800 Whitley Ave, Corcoran, CA 93212	Map-17, EDR-177, Pg 17-93 of 137	Gasoline; RWQCB; Open – remediation underway- Drinking water affected (2007); Feasible Source Control not performed – SVE and AS system operation to continue (Letter of 6/23/2009).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	250 ft west and downgradient of BNSF Alignment	No	Low - Based on distance, downgradient position, and status of remediation
85	S&R Specialty Equipment	S100227877	1144 Flory Ave, Corcoran, CA 93212	Map-17, EDR-177, Pg 17-111 of 137	Gasoline; RWQCB; Open-Site Assessment; preliminary site assessment underway (6-6-05); Drinking water affected.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	450 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
86	California State Prison - Corcoran; (aka CSP - Corcoran)	1000455663	4001 King Ave, Corcoran, CA 93212	Map-17, EDR-Orph Summ, Pg 136 of 137	Gasoline; RWQCB; Open-Site Assessment; preliminary site assessment underway (6-6-06).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	LUST; FINDS; HAZNET (others)	Greater than 1,000 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
		S107863204								
87	Pond Mercantile	S104234191	Highway 43 and Pond Rd, Pond (Delano), CA 93286	Map-31, EDR-195, Pg 31-5 of 10	Gasoline; RWQCB; Open-Site Assessment: preliminary site assessment underway (6-29-09); extent of contamination has not been determined; release has migrated to groundwater. Lateral extent not determined. SVE pilot test and groundwater monitoring underway.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE; LUST	7400 ft east of Allensworth Bypass Modification; 750 ft east of BNSF Alignment; upgradient	Yes	Low - Based on proximity to east alignment and upgradient position
88	Wasco Airport	S100833209	McCombs and Palm Ave, Wasco, CA 93280	Map-33, EDR-198, Pg 33-3 of 103	Pesticides; RWQCB; DTSC; pesticide rinse waters from the aerial applicator's operations were draining into an unlined pond. There was also evidence of soil contamination at the facility. Chlordane, endrin, lindane and thimet were found in groundwater samples and soil samples taken from the site. The Central Valley RWQCB issued a cleanup and abatement order to the Kern County Airport at Wasco.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/29/10	CA BOND EXP. PLAN	6,000 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
89	G&V Mini Mart (aka Jefferies Bros. Exxon; aka Wasco Mini Mart)	S105003980	1224 Highway 46, Wasco, CA 93280	Map-33, EDR-202, Pg 33-17 of 103	Gasoline; RWQCB; open – remediation underway- Non-drinking water affected (2006); RWQCB order to resume remediation – 9/2/2009.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	LUST	2,300 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position

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90	Sandoz Crop Protection, Inc. (aka Certis USA, LLC)	S100873273 1000191921	720 5th Street, Wasco, CA 93280	Map-33, EDR-204, Pg 33-37 of 103	Multiple hazardous waste materials, pesticide and other agricultural chemical manufacturing; multiple violations; DTSC; DTSC recommended assessment and corrective action 1/19/2009.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/29/10	ENVIROSTOR; HAZNET; EMI; CORRACTS (others)	200 ft west and downgradient of Kimberlina Modification and BNSF Alignment	Yes	Medium - Based on proximity to alignment and unresolved violations
91	Santa Fe Railway Property - Wasco	S101480475	7th and H Street, Wasco, CA 93280	Map-33, EDR-204, Pg 33-50 of 103	The property was operated by various agriculture related businesses between 1954 and 1963 resulting in site soil becoming contaminated by releases of DDT and metabolites. The preferred remedy involved the excavation and disposal of approximately 5,000 cubic yards of DDT-, DDD-, and DDE-contaminated soil along with approximately 5,000 additional cubic yards of contaminated soil previously stockpiled onsite. The removal consisted of excavation and disposal of approximately 9,800 tons pf DDT-contaminated soil and debris. The site was divided into a consolidation area with limited future use (Deed Restrictions) and an unrestricted use area. A "Covenant to Limit Use of Property - Wasco Lease Site" was recorded with the Kern County Recorder's Office. This Covenant limits use of a 140-ft by 220-ft portion of the property to industrial/commercial use.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/29/10	HIST Cal-Sites, HIST CORTESE: RESPONSE: ENVIROSTOR	On Kimberlina Modification and BNSF Alignment; 3,800 ft west and downgradient of the Wasco-Shafter Bypass; 5,200 ft west and downgradient of the Wasco-Shafter 7th Standard Bypass	Yes	High - Based on proximity to west alignment; Low - Based on downgradient position and proximity to other two alignments
92	Wasco Glass	S105174070	1311 Highway 46, Wasco, CA 93280	Map-33, EDR-Orph Summ, Pg 33-101 of 103	Gasoline; RWQCB; 1990 case closed; 2001 case - leak reported.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	LUST	2,600 ft west and downgradient of the Kimberlina Modification and BNSF Alignment	No	Low - Based on distance and downgradient position
93	Circle K #904	S105027304	1445 Highway 46, Wasco, CA 93280	Map-33, EDR-Orph Summ, Pg 33-101 of 103	No further information available.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HIST CORTESE	3,100 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
94	Greenfield's One Stop	U003981361 U001583573	2033 Highway 46, Wasco, CA 93280	Map-33, EDR-Orph Summ, Pg 33-101 of 103; Map-33, EDR-202, Pg 33-28 of 103	No further information available.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	LUST	5,000 ft west and downgradient of BNSF Alignment	No	Low - Based on distance and downgradient position
95	Copeland Property (aka Copeland Revocable Trust Property)	S106486160	541 Highway 46, Wasco, CA 93280	Map-33, EDR-Orph Summ, Pg 33-102 of 103	Phase II report and Phase III Work Plan accepted; SVE well work plan requested by the agency (6/28/09); contaminants of concern include pesticides and agricultural chemical constituents 1,2-DCP, 1,2,3-TCP, and 1,2-dibromo-3-chloropropane. Groundwater is affected.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 1/29/10	ENVIROSTOR; Kern County Environmental Health Services Department	750 ft east and upgradient of BNSF Alignment	Yes	Medium - Based on proximity to alignment, upgradient position, and unresolved soil contamination issues
96	Shafter-Wasco Ginning	S106600430	Highway 43 and Bender Ave, Wasco, CA 93280	Map-34, EDR-Orph Summ, Pg 34-2 of 5	No further information available.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	LUST	900 ft west of the west alignment; downgradient	No	Low - Based on distance and downgradient position

Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
97	USDA Cotton Research Station (aka U S Department of Agriculture - Shafter Cotton; aka Shafter Research and Extension Center; aka Western Integrated Cropping Systems)	1000143212 U004112765 U004112765	17053 Shafter Ave, Shafter, CA 93263	Map-36, EDR-223, Pg 36-11 of 198	Agricultural chemical spill – fertilizer; no violations noted; no further information available.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	SLIC; HIST UST; HAZNET; CERC-NAFRAP; FINDS	1,700 ft west of the Wasco-Shafter Bypass; downgradient; 5,900 ft east of BNSF Alignment - upgradient	No	Low - Based on distance and/or downgradient position
98	Brown and Bryant - Shafter Facility **(combined with #99 below)**	S100833336 1000437217	135 Commercial Drive, Shafter, CA 93725	Map-36, EDR-244, Pg 36-110 of 198	DTSC; The B&B – Shafter facility is approximately 15 acres and was used for blending/repackaging liquid fertilizers, insecticides, herbicides, fumigants, and defoliants. Onsite surface, subsurface soils, and soil gas have been contaminated with agricultural chemicals. The site ceased operations in December 1989. B&B indicated that it was bankrupt. DTSC requested Santa Fe (landowner of 1/3 of the site) to extend the west site fenceline farther west to prevent public exposure of offsite soil contamination. U.S. EPA subsequently issued a 106 Order to Santa Fe requiring the company to assess the site and develop plans to stabilize and winterize the site to prevent further public exposure potential. Two phases of RI were conducted in '95 and '97 to delineate the extent of contamination at the site. The RI demonstrated that subsurface soil/soil gas contamination exist to depths of over 200 ft. Finalization of the baseline risk assessment is currently underway and preparation of the FS workplan is forthcoming. Draft Final Remedial Action Plan - Former Brown and Bryant Shafter Facility (9/28/08); Site has numerous other agency violations.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/1/10	HIST Cal-Sites, CA BOND EXP PLAN; CORTESE; HIST CORTESE; RESPONSE; ENVIROSTOR; SLIC; CERCLIS; RCRA-TSDF (others)	Adjacent to the east and upgradient of BNSF Alignment	Yes	High - Based on proximity to the alignment, upgradient position, and unresolved soil and groundwater issues and outstanding violations
99	Burlington Northern and Santa Fe Railway **(combined with #98 above)**	S103629745	140 Commercial Drive, Shafter, CA 93725	Map-36, EDR-244, Pg 36-156 of 198	BNSF site is associated and co-joined with the B&B facility noted above. BNSF owns a portion of the B&B site; no violations noted.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	HAZNET	Adjacent to the east and upgradient of BNSF Alignment	Yes	High - Based on proximity to the alignment, upgradient position, and unresolved soil and groundwater issues and outstanding violations

Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
100	KVS Transportation, Inc.	1000455676	3752 Allen Road, Bakersfield, CA 93312	Map-40, EDR-268, Pg 40-18 of 27	Small-quantity hazardous waste generator with multiple violations: Transporter - General; former LUST site - case closed 10/30/2002.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	RCRA-SQG; PADS; FINDS; LUST	Adjacent to the southwest and downgradient of BNSF Alignment	Yes	Medium - Based on proximity to alignment and multiple violations; Low - Based on downgradient position
101	Sunland Refining Corporation	S102860851	2152 Coffee Road, Bakersfield, CA 93308	Map-41, EDR-286, Pg 41-16 of 214	The site covers over 200 acres and was the former Sunland Refinery operation. The site had been a crude oil refinery from 1923 to 1995. The primary constituents of concern within soil and groundwater include petroleum hydrocarbons in gasoline, diesel and oil range, aromatic hydrocarbons including benzene, and the fuel additive MTBE. Total petroleum hydrocarbons as gasoline are present in areas underlying the site at concentrations that exceed taste and odor thresholds. Benzene and MTBE are present in groundwater underlying portions of the site at concentrations that exceed the drinking water MCLs. Petroleum hydrocarbons compounds have been detected in both the soil and the groundwater beneath the site and downgradient to the west/ northwest. Offsite investigations have determined that the dissolved phase hydrocarbon constituents extend in groundwater to the west/northwest of the site approximately 2,400 ft. Hydrocarbon constituents have been detected in groundwater underlying the Former Kern Steam Plant located northwest of the site. The lateral extend of groundwater impact to the northwest has not yet been defined.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/1/10	SLIC; ENVIROSTOR	3,500 ft north and cross-gradient of Bakersfield South alignment	Yes	Medium - Based on the lack of characterization of the horizontal extent of the contamination; Low - Based on the distance and cross-gradient position
102	Tosco Corporation - Bakersfield Refinery (aka Texaco Refinery and Marketing) **(combined with #103 below)**	S100833498 1000175628	6500 Refinery Ave, Bakersfield, CA 93308	Map-41, EDR-322, Pg 41-30 of 214	Tosco operated a crude oil refinery at this site. This facility is immediately adjacent to the Texaco Refinery. The facility has not been operational for several years. Wastes generated from the refinery were either buried onsite or discharged to four unlined disposal ponds . Discharges to the disposal ponds include flare pit condensate, tank farm condensate, process area drains, coke scrubber blowdown, boiler blowdown and cooling tower blowdown; dilute spent caustic, hydrocracker and phenolic sour water; desalter water, classifier water, and tank farm drains. Chemicals associated with these discharges include phenols, hexavalent and trivalent chromium, sulfides, cyanides, chlorides, and oil. The RWQCB investigations have also documented the presence of benzene and toluene in groundwater beneath the facility. The RWQCB is continuing its efforts to characterize contamination from the facility. The RWQCB has determined that plume migration has been controlled at the site. This determination will be re-evaluated when the agency becomes aware of significant changes at the facility (1/19/2010).	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/1/10	CA BOND EXP. PLAN; ENVIROSTOR; CORRACTS; RCRA-TSDF; (others)	Adjacent to the north and upgradient of Bakersfield South alignment	Yes	High - Based on proximity to the Alignment, up-gradient position, multiple violations, and potentially unresolved contamination issues

Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
103	Texaco Refining and Marketing (aka Texaco - Equilon Enterprises - Refining; aka Big West of California Refining; aka Bakersfield Refining Company; aka Flying J Refinery; aka Getty Refining and Marketing Co; aka TRMI West Plant **(combined with #102 above)**	1000144861 S100833497 U001584623 S101620579	6451 Rosedale Hwy, Bakersfield, CA 93308	Map-41; EDR-329; Pg 41-46 of 214	Benzene, fuel oxygenates, other solvent or non-petroleum hydrocarbons, toluene, xylene, arsenic have been detected in groundwater. There are also scattered areas of near-surface, heavy-metal contamination; RWQCB. The facility is immediately adjacent to the Tosco refinery. Wastes generated from the refinery have been buried onsite or discharged to a disposal pond. Spillage and leakage have also been observed during inspections. Extensive work has been performed, and Texaco agreed to complete the contamination assessment; Open remediation as of 5/28/2009. Facility also has numerous outstanding agency violations: Generators - General, LDR - General; TSD - General.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/1/10	LUST; CA BOND EXP PLAN; HIST CORTESE; CHMIRS; CORRACTS; RCRA-TSDF; TRIS; SLIC; (others)	All alignment alternatives (BNSF, Bakersfield South, and Bakersfield Hybrid) pass through the site.	Yes	High - Based on proximity to the Alignments, multiple violations, and potentially unresolved soil and groundwater contamination issues
104	Gibson PRP Group; (aka Gibson Environmental)	S105094377 1004676568	2401 Gibson Street, Bakersfield, CA 93308	Map-42, EDR-280, Pg 42-8 of 459	Gibson Oil purchased the northern part of the site in 1978, and subsequently used it for oil refining and recycling operations. In 1987, Gibson Oil became Gibson Environmental and received an interim status permit to operate a hazardous waste facility for liquid waste. In 1989, Gibson bought the southern part of the site. Gibson ceased operations in 1995 and abandoned the site, leaving behind approximately 80,000 cubic yards of soil and 670,000 gallons of liquid and sludge in tanks. In 1999, the DTSC sampled the tank contents and issued a clean-up order (I&SE 99/00-002). RFI Report - 8/13/2007; Interim Measures Implementation Report - 9/21/2007; Interim removal measure report approval letter issued 9/21/07; Corrective Measures Study Report - 7/31/2008; Final CMS Report (Feasibility Study) approved 7/31/08; Remedy Selection and Statement of Basis - 7/31/2008; Remedy Select/Notice of Decision (Final Remedial Action Plan) issued 7/31/08; Corrective Action Completion Determination - 10/21/2008. DTSC cleanup status certified as of 6/26/09.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/2/10	ENVIROSTOR; CORRACTS	3,200 ft north and upgradient of the Bakersfield South alignment	No	Low - Based on distance and status of remediation (closed site)

Table 5-1
Sites with Potential Environmental Concerns Identified in the Study Area (EDR Environmental Atlas Report Worksheet)

Site No.	Site Name	EDR ENVID	Address	EDR Focus Map Number, EDR Identification Number, and Atlas Page Number	Contaminants of Concern; Lead Agency; Environmental Issues	References - Source Date	Database Listing	Distance, Direction, and Groundwater Gradient from Centerline of the Alignment	Site Reconnaissance Performed	Priority Ranking (High, Medium, or Low) for Potential to Impact HST Alignment
105	PG&E Manufactured Gas Plant SQ-KR-BAK	1012128737	20th Street, between P and Q Streets, Bakersfield, CA 93301	Map-42, EDR-287, Pg 42-47 of 459	The Pacific Gas and Electric Company (PG&E) completed a "Historical Overview of the Former Manufactured Gas Plants in Northern and Central California," dated 1987, which states gas manufacturing began in Bakersfield in 1888. The plant used naphtha to manufacture gas. After one year, the plant was converted to a coal-gas plant. The plant was put on standby status in 1910 when natural gas was piped in from the nearby oilfields. The plant was dismantled by 1951. At the time of the report, the former plant occupied what was three parcels that had been developed for commercial use.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/2/10	Manufactured Gas Plants; ENVIROSTOR	2,100 ft north and upgradient of BNSF Alignment and Bakersfield South alignment	No	Low - Based on distance and status of 3rd party re-development
106	Bakersfield Plating Works; (aka Brookshire Plating)	S101480464 1003879872	527 E. 19th Street, Bakersfield, CA 93305	Map-42, EDR-298, Pg 42-106 of 459	The site was used for plating chrome, nickel, copper, and brass. Substances were stored in vats and drums, and widespread spillage was documented from the early 1950's until operations ceased in 1989. An emergency removal action conducted by the U.S. EPA in 1993 identified solid wastes, contaminated soils, and improperly stored chemicals. A DTSC inspection on 3/16/2004 indicated that the site was closed up and fenced off.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/2/10	ENVIROSTOR	1,000 ft north and upgradient of BNSF Alignment	No	Low - Based on distance
107	Kern Rock Company (aka CalMat)	1000306019	529 Dolores Street, Bakersfield, CA 93385	Map-42, EDR-298, Pg 42-129 of 459	Site is a RCRA-SQG: PCBs, ACMs; waste oil and USTs onsite. No violations reported.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r	RCRA-SQG; HAZNET; UST; others	On BNSF Alignment	No	Low - Based on lack of reported incidences and violations
108	St Vincent De Paul	S105032469 S105022609	300 Baker Street, Bakersfield, CA 93305	Map-42, EDR-298, Pg 42-148 of 459	Gasoline; RWQCB; Open - Remediation, remediation plan; soil only affected; most recent database info 8/24/2001.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/2/10	HIST CORTESE; LUST	450 ft south and downgradient of BNSF Alignment; 500 ft north and upgradient of the Bakersfield South alignment	No	Low - Based on distance and status of remediation
109	Regal Gas Station	S104234200	2661 Niles Street, Bakersfield, CA 93306	Map-43, EDR-305, Pg 43-8 of 129	Gasoline; RWQCB; Open - Site Assessment, preliminary assessment underway; Enforcement action orders issued 5/27/2009.	EDR DataMap Environmental Atlas - EDR Inquiry 02671863.4r; Envirostor/Geotracker website database accessed 2/4/10	HIST CORTESE; LUST	2,400 ft north and upgradient of BNSF Alignment	No	Low - Based on distance
110	Quick and Easy	S101620474 S105174075	2805 Edison Hwy Bakersfield, CA 93307	Map 2, Page 3-3 of 10; Page 4-9 of 97	Gasoline	EDR DataMap Environmental Atlas - EDR Inquiry 3148835.1s	LUST (closed); CA FID UST; SWEEPS UST	Between an adjacent to the B1 to E4 to T3 and the B2 to E4 to T3-2 alignment alternatives		Medium - based on closed LUST site and the potential for contaminated soil

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Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
3	1000136187 and S103624220	VOPAK USA Inc. (aka UNIVAR USA; aka Van Waters & Rogers, Inc.)	1152 G St Fresno 93706	RWQCB is the lead agency. The former handler was engaged in the treatment, storage, or disposal of hazardous waste. Reportedly, soil and soil-vapor surveys in 1996 indicated the presence of PCE. According to EDR, several monitoring wells were installed in 1996 and showed PCE in the underlying groundwater. A vapor extraction system was installed in 1998 and was run until 2004. Four new offsite SVE wells were installed in late 2008. An SVE system is currently being installed downgradient from the site to remediate soils impacted by VOCs migrating offsite. The case status is reported as "Open–Remediation."
4	S106175454	Greyhound Bus Depot	1033 Broadway Fresno 93721	Reportedly, diesel contamination was found at the site. RWQCB is the lead agency. The case status is reported as "Open–Preliminary site assessment work plan submitted."
6	1000196845 and 1012008193	PG&E Gas Plant Fresno 325 3A (aka Fresno #2; aka Gas Plant SQ-FK-FRS-2)	Block of F St, between Mariposa and Fresno streets; block of F St and G St between Tulare St and Fresno St Fresno 93706	Reportedly, lead and PAHs contaminate the site. DTSC is the lead agency. PG&E began manufacturing gas on this site in 1883 using coal-to-gas methods. Between 1890 and 1892, the coal-gas plant was dismantled and replaced with two oil-burning water-gas generators. The plant was shut down in 1919. Site screening began in May 2007. DTSC completed a reassessment for U.S. EPA under the PASI grant.
13	S104869033	Abandoned service station	655 G St Fresno 93721	Reportedly, gasoline pollutes the site and affects drinking water. RWQCB is the lead agency. The case status is reported as "Open–Site Assessment."
14	U003971430	Trini's Beacon (aka Beacon #460; aka Trini's Oil Inc.)	603 G St Fresno 93706	Reportedly, a gasoline leak is being confirmed at the site. RWQCB is the lead agency.

Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
16	1010082232	Former Caltrans service yard	2312 & 2365 S Tulip Fresno 93721	U.S. EPA/DTSC PASI site. The facility has a known or suspect abandoned, inactive, or uncontrolled hazardous waste site. The Caltrans service yard operated from approximately 1918 to 1970. Tetrachloroethene (PCE) has been detected in areas surrounding this facility. Sampling of groundwater upgradient from the site indicates no contamination. Site soil and groundwater have not been sampled.
17	1010082229	Poverello House property	E Belgravia Ave Fresno 93721	Reportedly, the facility has a known or suspect abandoned, inactive, or uncontrolled hazardous waste site. DTSC is the lead agency. There are documented impacts on groundwater that may pose a threat to drinking water supplies. Impacts include PCE and TCE. U.S. EPA completed a preliminary assessment in September 2009. Based on currently available information contained in the report, U.S. EPA has determined that no further assessment is warranted. DTSC may require additional investigation.
27	S104816233	Rumbley property	2160–2180 S Van Ness Fresno 93721	According to EDR, diesel contaminates the site and affects drinking water. RWQCB is the lead agency. The case status is reported as "Open–Remediation" since 2006. A remediation plan was submitted, but no closure report is available.
28	1010082228 and S107736126	Chris Sorensen facility	2205 S Van Ness Fresno 93721	U.S. EPA–PASI; Case is in inactive status; site needs further evaluation; contaminants are unknown.
33 and 34	S107737517 and S107737518	Vacant Lot APNs 48018107 and 48018108	2368 and 2376 S Grace Fresno 93721	PCE and TCE were detected in groundwater at a location approximately 450 feet downgradient of the site. U.S. EPA is the lead agency, operating under the PASI grant. A U.S. EPA discovery document was completed March 8, 2006. The case status is reported as "Inactive–Needs Evaluation."

Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
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* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
35	S106953262, 1010417092, and S104403982	California Diesel Repair (aka Anderson Clayton)	2396 S Railroad Fresno 93721	California Diesel Repair: U.S. EPA is the lead agency, operating under a PASI grant. Results of onsite soil sampling have documented release of petroleum products to shallow soils. There have been impacts on groundwater, which may pose a threat to drinking water supplies. U.S. EPA completed a preliminary assessment 9/9/2009. Based on currently available information contained in the report, U.S. EPA has determined that no further assessment is warranted. DTSC and RWQCB may require additional investigation. The case status is reported as "Inactive – Needs Evaluation." Anderson Clayton: Reportedly, gasoline contaminates the site. RWQCB is the lead agency. The extent of the contamination has not been determined. A site assessment work plan was requested in December 2008. The case status has been reported as "Open–Site Assessment" since September 1987.
36	S105481911 and S106483535	Former BNSF Ice House (aka Atchison Topeka Santa Fe Ice House; aka Former Calwa Ice Plant; others)	3090 E Church Fresno 93721	Reportedly, soils and groundwater beneath the site contain hexavalent chromium. DTSC is the lead agency. According to EDR, ice was produced at the site from about 1911 until the late 1960s. The ice plant was decommissioned between October 1969 and March 1971. Reportedly, brine tanks were used at the ice making plant. Chromium has been detected in soil and groundwater samples collected at the site. The case began in January 2002. The site was assessed in October 2004. The case status has been reported as "Open–Remediation" since 2007.

Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
40	S106486061, S100833392, and S100676286	FMC Corp. (aka FMC Corp.–Ag Chemical Division; aka FMC, Fresno Facility)	2501 S Sunland Fresno 93725	Reportedly, agricultural chemicals contaminate the site. U.S. EPA, RWQCB, and DTSC are the lead agencies for the site. FMC is an agricultural chemical formulation plant. Wash and rinse water produced during chemical formulation and support operations along with storm water runoff have, in the past, been discharged to surface impoundments, an open field and dry wells at the site. These discharges have resulted in the contamination of several areas on the site. Onsite soils and ground water beneath the site have been contaminated with a wide variety of agricultural chemicals, including DDT, endrin, toxaphene, dieldrin, and ethion. Groundwater beneath the site is contaminated. The site is fenced and posted, and access is controlled.
42	S104241813 and S104404097	Weir Floway Inc. (aka Peabody Floway; aka Floway Pumps)	2494 S Railroad Fresno 93707	Reportedly, TPH, TCE, and chromium contaminate the site. DTSC is the lead agency. In 1991, while preparing to erect a metal building on an existing foundation, a 300-gallon underground storage tank was discovered, prompting an investigation to determine the extent of petroleum waste associated with past tank releases. It was determined that soil underlying parcels 12 and 13 had been impacted with petroleum waste constituents from various past operations on the parcels. It was also determined that chromium and TCE are present in groundwater underlying and downgradient of parcel 18. According to EnviroStor, the case has been closed since March 2000.

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Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
52	1000228675, S109466552, and 1000425425	Professional Asbestos Removal Corp. (aka PARC Environmental; aka Insulation Contracting & Supply)	2706 S Railroad Fresno 93725	Fresno County CUPA report. Occupant removes and disposes of various hazardous waste materials, including asbestos-containing materials (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). Reportedly, no ACMs or hazardous materials are stored on the site; however, URS could not verify this claim.
55	S109422410 and S105124216	Wilbur & Ellis (aka Wilbur-Ellis)	2903 S Cedar Fresno 93725	The site is listed as an EPCRA with no violations. Reportedly, the facility was constructed in 1946 and fertilizer was produced there until 1952. Following fertilizer production, pesticides were manufactured at the facility. Soil and groundwater contamination was detected in the 1980s. Soil-removal actions were conducted in the 1980s. According to an April 1992 CERCLA Site Inspection Report, a Preliminary Endangerment Assessment Report is needed. The case status is reported as “Inactive–Needs Evaluation.”
56	S106248109 and U004126373	CL Bryant (aka Unocal Bulk Plant)	3220 S Parkway Fresno 93722	The site is listed as an Extremely Hazardous Substance Handler (EPCRA) with no violations. No monitoring wells were observed during the site visit and no files were on record with Fresno County except a Hazardous Material Business Plan (3/16/10).

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Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
59	S105628340	South Fresno Regional Groundwater Plume	Area north of Church Ave, east of Golden State Blvd, adjacent to Railroad and Van Ness avenues, south of Woodward Ave, and west of Gearhart St	The plume is in the industrial area of south Fresno and appears to be the result of releases from multiple sources. DTSC and RWQCB are the lead agencies. Many of the surrounding facilities have been in operation since WW II and some properties have been used for industrial purposes since the early 1900s. DTSC has been working with several potential responsible parties (RPs) to investigate this co-mingled groundwater plume. Hazardous substances present in groundwater beneath the site include VOCs, metals, and pesticides. Vendo and Floway are the RPs for site OU 1, encompassing the area north of the intersection of Church Ave and S East Ave, west of the eastern boundary of the BNSF railroad right-of-way, east of Van Ness Ave, north of Golden State Blvd, and south of Woodward Ave. FMC is the RP for site OU 2, encompassing the area north of FMC, east of the eastern boundary of the BNSF railroad right-of-way, west of S Gearhart St and south of Woodward Ave.
61	S105678089	Cedar Avenue Recycling and Transfer Station (CARTS)	3457 S Cedar Fresno 93725	CARTS accepts construction/demolition material, green materials, industrial/inert waste, mixed municipal, and wood waste; According to Fresno County this is a low-priority site. Low-level groundwater contamination of chromium, cadmium, and carbon TET has been detected. Contamination levels are slightly elevated in groundwater. Site is surrounded by a landfill (Orange Avenue Disposal Site) and other possible groundwater contamination sources. The adjacent landfill appears to be related. 10/99: Contamination levels are only slightly greater than MCLs. Soil contamination levels are less than PRGs.
65	1004439539	Wilbur-Ellis Company (aka Agricultural Mfg. Co.)	4106 S Cedar Fresno 93725	The site is listed as an EPCRA with no violations reported.
68	S105870328	Bowen Engineering and Environmental	4106 S Cedar Fresno 93725	The facility is listed as a hazardous waste generator with no violations reported.

Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
73	S106487474, S102359962, S102406089, and 1011978257	Chestnut Ave. Sanitary Landfill (aka Thrifty Best Rubbish Service; aka Browning Ferris Industries)	12825 S Chestnut Fresno 93725	The site is listed as a former solid-waste facility with no violations found. RWQCB is the lead agency. Possible groundwater contamination was reported in 1965.
77	S105256701	Hanford Facility (aka Baker Commodities, Inc.–Kings)	7480 Hanford-Armona Rd Hanford 93230	According to EDR, the site is listed on the UST and AST databases. Reportedly, the site treats process waste and wash-water waste with no violations reported.
78	S101049400 and S102360529	Hanford Municipal Solid Waste Disposal Site (aka Kings Waste and Recycling Authority)	7803 Hanford-Armona Rd Hanford 93230	The site is a large-volume transfer/production facility that accepts agricultural, construction/demolition, industrial, mixed municipal, other designated wastes, tires, and wood waste with no violations reported.
WH-3	S101480484	Pry's Ag Services Inc	13380 Excelsior Ave, Hanford, CA 93230	Ag chemicals stored and used in the West Hanford Bypass footprint of the east-side grade separation. No violations reported.
WH-4	S110761597	Warmerdam Farms Inc	13750 Elder, Hanford, CA 93230	Ag chemicals stored and used in the West Hanford Bypass west-side grade separation footprint. No Violations reported.
WH-8	S101295337	Johnson's Auto and Tractor	10966 14th Ave, Armona, CA 93202	The site is a Historical Cortese and LUST site located at the corner of 14th Avenue and 6th Street in Armona, adjacent south of the long SJVRR footprint appendage of the West Hanford Bypass.
WH-10	S110761622	Zonneveld Dairies Inc	11891 Jackson Avenue, Hanford, CA (S/E corner of 12th Ave and Jackson Ave)	The site appears to be an equipment storage location and processing area for cattle feed-possibly Ag Chemicals stored on site. The site is within the West Hanford Bypass footprint for the grade separation at 12th Avenue and Jackson Avenue.
WH-11	S100227907	Hadley Yocum-Lakeside Bar	10001 Kansas Ave, Hanford, CA93230	The site is a Historical Cortese and LUST site. The site is within, and adjacent to, the east side of the West Hanford Bypass grade separation at Kansas Avenue. Open Site Assessment- LUST site with groundwater monitoring, a Corrective Action Plan/Remedial Action Plan for drinking water aquifer affected by gasoline.

Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
79	S102360526	Corcoran Sanitary Landfill	6061 Nevada Ave Corcoran 91206	Reportedly, the site is a closed solid-waste disposal site. No other information was available from EDR, EnviroStor, or GeoTracker.
80	1000202637, S106486075, and S101272735	Puregro-Corcoran	6991 Nevada Ave Corcoran 93212	DTSC is the lead agency; reportedly, the site is contaminated by DDE, DDT, toxaphene, phenoxyherbicides, and sodium chlorate. The 10-acre site contains a fertilizer and pesticide mixing-and-retail operation. Equipment and structures related to the operation have been removed except for one metal warehouse building. Buried waste and spillage of materials contributed to the contamination of the site soils and groundwater. Investigations identified DDT, toxaphene, and nitrates contaminating soils beneath the site. Elevated levels of nitrates and arsenic were detected in groundwater. Buried waste and contaminated surface and subsurface soils were excavated and disposed of off the site and the surface impoundment was closed. Reportedly, the site has been remediated to conditions appropriate for industrial/commercial use. A groundwater pilot study involving phytoremediation has been conducted and has been determined to be ineffective for the site. Additional groundwater investigations are being conducted to assess health risks of the site groundwater (2007).
87	S104234191	Pond Mercantile	29310 Pond Rd, Wasco, CA 93286	Reportedly, gasoline contaminates soils and groundwater beneath the site. RWQCB is the lead agency. The preliminary site assessment has been under way since June 2009. The depth and lateral extent of contamination have not been determined. SVE pilot testing and groundwater monitoring are being conducted.
90	S100873273 and 1000191921	Sandoz Crop Protection, Inc. (aka Certis USA, LLC)	720 5th St Wasco 93280	Reportedly, the site has multiple violations corresponding to manufacturing hazardous waste materials, pesticides, and other agricultural chemicals. DTSC is the lead agency. DTSC recommended assessment and corrective action in January 2009.

Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
91	S101480475	Santa Fe Railway Property–Wasco	7th and H St Wasco 93280	DTSC is the lead agency. Reportedly, soils beneath the site were contaminated by releases of DDT and metabolites as a result of agribusiness operations between 1954 and 1963. Approximately 10,000 cubic yards of soil contaminated by DDT, DDD, and DDE were excavated and disposed of off the site. The site was divided into a consolidation area with limited future use and an unrestricted-use area. A "Covenant to Limit Use of Property" recorded by the Kern County Recorder's Office limits use of a 140-foot by 220-foot portion of the property to industrial or commercial use.
95	S106486160	Copeland Property (aka Copeland Revocable Trust Property)	541 Highway 46 Wasco 93280	County of Kern–Public Health Services Department lead. No information was available regarding the origin or type of site contaminants. A Phase II report and a Phase III Work Plan have been accepted by the County. A SVE well work plan was requested by the agency in June 2009.
98 and 99	S100833336, 1000437217, and S103629745	Brown and Bryant–Shafter Facility; BNSF Railway	135 and 140 Commercial Dr Shafter 93725	Reportedly, agricultural chemicals contaminate surface and subsurface soils and soil gas beneath the site. DTSC is the lead agency. The approximately 15-acre site was used until December 1989 to blend and repackage liquid fertilizers, insecticides, herbicides, fumigants, and defoliants. A fence near the western portion of the site was extended farther to the west to prevent public exposure to offsite soil contamination. Two phases of RI conducted in 1995 and 1997 discovered subsurface soil and soil gas contamination at depths of over 200 feet. A draft Remedial Action Plan for the site was published in September 2008. Reportedly, the baseline risk assessment is being finalized and a FS work plan is being prepared. Numerous additional agency violations exist at the site.
100	1000455676	KVS Transportation, Inc.	3752 Allen Rd Bakersfield 93312	The site is listed in EDR as a RCRA Small-Quantity Hazardous Waste Generator with multiple violations. The site is also a former LUST site; case closed in October 2002 (RWQCB lead).

Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
101	S102860851	Sunland Refining Corp.	2152 Coffee Rd Bakersfield 93308	RWQCB is the lead agency. Reportedly, soils and groundwater beneath the site are contaminated by petroleum hydrocarbons in the gasoline, diesel, and oil chromatographic range; aromatic hydrocarbons including benzene; and the fuel additive MTBE. The 200-acre site was a crude oil refinery from 1923 until 1995. Total petroleum hydrocarbons as gasoline are present in areas underlying the site at concentrations that exceed taste and odor thresholds. Benzene and MTBE exceed drinking water MCLs in groundwater beneath the site. Petroleum hydrocarbon compounds have been detected in soil and groundwater beneath the site and extend downgradient to the west-northwest. According to offsite investigations, dissolved phase hydrocarbon constituents are present in groundwater approximately 2,400 feet below ground surface downgradient from the site. Hydrocarbon constituents have been detected in groundwater underlying the former Kern Steam Plant northwest of the site. The lateral extent of the groundwater impact to the northwest has not yet been determined.
102 and 103	S100833498, 1000175628, 1000144861, S100833497, U001584623, and S101620579	Tosco Corp.–Bakersfield Refinery; Texaco Refining and Marketing (aka Texaco–Equilon Enterprises–Refining; aka Big West of California Refining; aka Bakersfield Refining Co.; aka Flying J Refinery; aka Getty Refining and Mkt Co.; aka TRMI West Plant)	6500 Refinery Ave 6451 Rosedale Hwy Bakersfield 93308	Reportedly, phenols, hexavalent and trivalent chromium, sulfides, cyanides, chlorides, and oil contaminate the site. RWQCB is the lead agency. The site, a former crude-oil refinery, has been closed for several years. Wastes generated by the refinery were buried onsite or discharged to 4 unlined disposal ponds. Discharges to the disposal ponds include flare pit and tank farm condensate; process area drains; coke scrubber, boiler, and cooling tower blowdown; dilute spent caustic, hydrocracker, and phenolic sour water; desalter and classifier water; and tank farm drains. Previous and ongoing RWQCB efforts to characterize facility contamination have discovered benzene and toluene in groundwater beneath the facility. Plume migration has been controlled at the site since January 2010.

Sources:
EDR (Environmental Data Resources, Inc.). 2010. The EDR DataMap Environmental Atlas, Inquiry Number: 2671863.4r, January 13, 2010.
DTSC EnviroStor database. From the website: http://www.envirostor.dtsc.ca.gov/public/. Accessed January through May, 2010. For database dates of access for specific sites, refer to the table “EDR Environmental Atlas Report Worksheet” (Table 5-1).

Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions

***** Site Number refers to position on Table 5-1

Acronyms:

aka	also known as
APN	assessor's parcel number
AST	aboveground storage tank
Ave	avenue
Blvd	boulevard
BNSF	BNSF Railway
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
Co.	company
Corp.	corporation
CUPA	Certified Unified Program Agency
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichlorethylene
DDT	dichlorodiphenyltrichloroethane
DTSC	(California) Department of Toxic Substances Control
E	east
EDR	Environmental Data Resources, Inc.
EnviroStor	Department of Toxic Substances Control's database of contaminated sites in California
EPCRA	Emergency Planning and Community Right-to-Know Act
FS	Feasibility Study
Inc.	Incorporated
LUST	leaking underground storage tank
MBTE	methyl tertiary-butyl ether
MCL	maximum contaminant level
Mfg	manufacturing
Mkt	marketing
PAH	polycyclic aromatic hydrocarbon
PASI	Preliminary Assessment/Site Investigation
PCE	perchloroethylene (synonyms: tetrachloroethylene, terachloroethene, perchloroethene)
PRG	preliminary remediation goal
RCRA	Resource Conservation Recovery Act
Rd	road
RI	remedial investigation
RP	responsible party
RWQCB	California Regional Water Quality Control Board
S	south
St	street

Table 5-2
Sites with Potential Environmental Concerns Identified in the Study Area
That Were Visited during the Site Reconnaissance

* Site Number	EDR ID	Facility Name	Address	Listing Descriptions
SVE	soil-vapor extraction			
TCE	trichloroethylene			
TET	tetrachloride			
TPH	total petroleum hydrocarbon			
U.S. EPA	Environmental Protection Agency			
UST	underground storage tank			
VOC	volatile organic compound			

Table 5-3
Landfills within 0.25 Mile of the Study Area

Name	Address	Status	Location	Potential for Landfill Gas Release?
Calwa Yard Solid Waste Site[a]	3901 E. Vine, Fresno, CA 93725	Accepting waste; Solid Waste Site – Class III – Landfills for non-hazardous solid wastes.	0.24 mile east of the BNSF Alternative.	None – Quarterly inspections have not indicated a release.
Orange Avenue Disposal Site[a]	3280 S. Orange Ave., Fresno, CA 93725	Not accepting waste; Diesel and other non-petroleum hydrocarbon volatile organic compounds; Open case – Site Assessment, pollution characterization.	0.15 mile west of the BNSF Alternative. 0.25 mile west of the Fresno HMF Site.	Low – Quarterly inspections have not indicated a release; however, groundwater is affected. Based on inspections and distance from the alignment, the potential for methane impact in the area to be disturbed by the project is low.
Chestnut Avenue Sanitary Landfill[a]	12825 S. Chestnut, Fresno, CA 93725	Not accepting waste; Solid-waste facility – closed site; contaminated site – groundwater; no violations found.	The BNSF Alternative passes through the northeast corner of the landfill site. BNSF Alternative may affect site monitoring wells.	Low – Landfill gas is monitored at perimeter monitoring probes. Monitoring indicates all perimeter probes are below the regulatory threshold of 5% methane.
Hanford Inert Landfill (aka Old Hanford Landfill)[b]	7869 Houston, Hanford, CA 93230	Not accepting waste; Inert debris; engineered landfill; construction debris (Case closed).	0.25 mile west of the BNSF Alternative. The Hanford HMF Site footprint includes the east end of the landfill site.	Low – There is no known release and the site is actively monitored.
Hanford Municipal Solid Waste Disposal Site; (aka Kings Waste and Recycling Authority)[b]	7803 Hanford-Armona Rd (Hanford-Armona Rd and 8th Ave), Hanford, CA 93230	Accepting waste; Large-volume transfer/processing facility; agricultural, construction/demolition, industrial, mixed municipal, other designated, tires, wood waste.	0.02 mile west of the BNSF Alternative. Hanford-Armona Road overpass footprint includes the northern ¼ of the site.	Low – There is no known release; Previous environmental investigations yielded no releases of landfill gas or leachate-impacted groundwater; however, the site is not actively monitored.
Corcoran Sanitary Landfill[b]	6061 Nevada Ave, Corcoran, CA 91206	Not accepting waste; Closed solid-waste disposal site.	0.01 to 0.05 mile east of the BNSF Alternative. 0.6 mile west of the Corcoran Bypass Alternative.	Low – based on distance from alignment. Landfill gas is not monitored; however, site groundwater is monitored.

[a] Source: Fresno County CUPA 2011.
[b] Source: CalRecycle 2011.

Table 5-4
Airports, Airstrips, and Heliports within 2 miles (3 kilometers) of Centerlines of Alignment Alternatives

Facility	Distance from Centerline (miles [kilometers])[a]	Direction from Centerline	County	Latitude	Longitude	Status
Fresno-Chandler Downtown Airport	0.87 mi (1.4 km)	Southwest of BNSF Alignment	Fresno	36.7321	-119.8207	Active
Valley Medical Center Heliport	1.83 mi (2.95 km)	Northeast of BNSF Alignment	Fresno	36.7368	-119.7545	Active
PG & E–Fresno Service Center Heliport	0.79 mi (1.3 km)	Northeast of BNSF Alignment	Fresno	36.7191	-119.7606	Active
Turner Field	1.61 mi (2.59 km)	East of BNSF Alignment	Fresno	36.6730	-119.7223	Active
Swanson Ranch Number 1 Airport	0.26 mi (0.42 km)	West of BNSF Alignment	Kings	36.3996	-119.6184	Active
Hanford Municipal Airport	1.78 mi (2.86 km)	West of BNSF Alignment	Kings	36.3182	-119.6295	Active
Corcoran Airport	1.68 mi (2.70 km)	West of BNSF Alignment	Kings	36.1021	-119.5956	Active
Salyer Farms Airport	0.08 mi (0.13 km) 0.35 mi (0.56 km)	West of Corcoran Bypass East of BNSF Alignment	Kings	36.0885	-119.5434	Active
Wasco Airport	1.00 mi (1.6 km)	West of BNSF Alignment	Kern	35.6194	-119.3545	Active
San Joaquin Community Hospital Heliport	0.88 mi (1.4 km) 0.91 mi (1.5 km)	North of BNSF Alignment North of Bkf South	Kern	35.3832	-119.0206	Active
Memorial Hospital Heliport	1.38 mi (2.22 km) 1.49 mi (2.40 km)	North of Bkf South North of Bkf North	Kern	35.3907	-119.0070	Active
Kern Medical Center Heliport	0.90 mi (1.4 km) 1.11 mi (1.79 km)	Northeast of Bkf South Northeast of Bkf North	Kern	35.3838	-118.9698	Active

Source: USGS 2010.

[a] Distance is given in approximate miles from the centerline of nearest alternative.

Bkf = Bakersfield

Table 5-5
Educational Facilities within 0.25 Mile of Alignment Alternative Construction Footprints

Facility	Distance from Footprint (miles)	Direction from Alternative Footprint	County	Status
Lincoln Elementary	0.24	West of BNSF Alternative	Fresno	Active
Pacific Union Elementary School	0.16	West of BNSF Alternative	Fresno	Active
Monroe Elementary School	0.10	East of BNSF Alternative	Fresno	Active
Frontier Elementary School	0.20	East of Hanford West Bypass Alternatives	Kings	Active
Sierra Pacific High School	0.10	East of Hanford West Bypass Alternatives	Kings	Active
College of the Sequoias – Hanford Center	0.07	East of Hanford West Bypass Alternatives	Kings	Active
Parkview Middle School	0.24	East of Hanford West Bypass Alternatives	Kings	Active
John C. Fremont Elementary	0.18	West of BNSF Alternative	Kings	Active
John Muir Middle School	0.16	West of BNSF Alternative	Kings	Active
Bethany Christian	0.21	West of BNSF Alternative	Kern	Active
Free Will Christian Academy	0.17	West of BNSF Alternative	Kern	Active
Redwood Elementary	0.19	Southwest of BNSF Alternative	Kern	Active
Richland Junior High School	0.19	Southwest of BNSF Alternative	Kern	Active
Warriors for Christ Academy	0.04 0.02 0.02	North of BNSF Alternative North of Bakersfield Hybrid Alternative North of Bakersfield South Alternative	Kern	Active
Country Christian School, Inc.	0.25 0.25	North of Bakersfield Hybrid Alternative North of Bakersfield South Alternative	Kern	Active
Fruitvale Junior High School	0.17 0.17 0.17	North of BNSF Alternative North of Bakersfield Hybrid Alternative North of Bakersfield South Alternative	Kern	Active
Columbia Elementary School	0.23 0.23 0.23	South of BNSF Alternative South of Bakersfield Hybrid Alternative South of Bakersfield South Alternative	Kern	Active
Franklin Elementary School	0.16 0.12 0.12	North of BNSF Alternative North of Bakersfield South Alternative North of Bakersfield Hybrid Alternative	Kern	Active
William Penn Elementary	0.24	South of BNSF Alternative	Kern	Active
Bakersfield High School / Bakersfield Adult School	0.0 0.18 0.19	South of BNSF Alternative South of Bakersfield Hybrid Alternative South of Bakersfield South Alternative	Kern	Active

Table 5-5
Educational Facilities within 0.25 Mile of Alignment Alternative Construction Footprints

Facility	Distance from Footprint (miles)	Direction from Alternative Footprint	County	Status
Blanton Education Center	0.12 0.24 0.10	North of BNSF Alternative North of Bakersfield South Alternative North of Bakersfield Hybrid Alternative	Kern	Active
Our Lady of Guadalupe School	0.09 0.25	South of Bakersfield South Alternative South of BNSF Alternative	Kern	Active
Bessie E. Owens Intermediate	0.16 0.07 0.0	North of Bakersfield South Alternative South of Bakersfield Hybrid Alternative South of BNSF Alternative	Kern	Active
Bessie E. Owens Primary	0.22	South of Bakersfield South Alternative	Kern	Active
Williams Elementary	0.24	North of Bakersfield Hybrid Alternative	Kern	Active
Mt. Vernon Elementary	0.24	South of Bakersfield South Alternative	Kern	Active
Bethel Christian School	On 0.08 0.10	Bakersfield South Alternative South of Bakersfield Hybrid Alternative South of BNSF Alternative	Kern	Active
Ramon Garza Elementary School	0.22 0.24 0.22	North of BNSF Alternative North of Bakersfield South Alternative North of Bakersfield Hybrid Alternative	Kern	Active
Sierra Middle School	0.23 0.24 0.23	North of BNSF Alternative North of Bakersfield South Alternative North of Bakersfield Hybrid Alternative	Kern	Active

BNSF = BNSF Railway

Table 6-1
CEQA Protocol for Evaluating Potential Environmental Concerns

Topic	Environmental Consequences Issues to Evaluate
Impacts associated with PEC sites	• Identify proximity of project alternatives to PEC sites. • Identify potential impacts associated with PEC sites based on the following: – Anticipated construction methods (particularly methods with extensive subsurface construction such as trenching, tunneling, cuts) compared against PEC site conditions. – Geology, hydrogeology, and surface and ground waters in the vicinity of the alternative. – Regulatory and response status of PEC sites. • Likelihood that construction or operation would encounter, cause, or worsen hazardous materials contamination.
Hazardous materials transport, use, disposal; routine operations and upsets/accidents	• Identify whether project alternatives would involve the generation, use, transport, or disposal of substantial new quantities of hazardous materials. • Identify whether project alternatives would likely result in increased transportation of hazardous materials or relocation of hazardous materials transport such that it creates increased hazard to the public or the environment. • Identify whether project alternatives would potentially increase the likelihood of upsets or accidents that would result in the release of hazardous materials. • Conversely, identify whether the project alternatives would reduce the likelihood of upsets or accidents through features such as new grade separations.
Emissions or handling of hazardous materials near schools	• Identify proximity of project alternatives to nearby existing or proposed schools. • Identify whether project alternatives would result in new emissions of hazardous materials or handling of hazardous or acutely hazardous materials within one-quarter mile of existing or proposed schools.
Hazards associated with airports or airstrips	• Identify proximity of project alternatives to public airports, public-use airports, and private airstrips. • Airports with airport land use plans: Review project alternatives design and operation characteristics against adopted airport land use plans to determine whether hazards would be created such as proximity and/or height of proposed facilities in relation to airport surfaces and airspace. Also consider characteristics, such as lighting hazardous to aircraft operations and hazardous materials use by airports or in proximity to airports. • Airports and airstrips without airport land use plans: Review project alternatives design and operation characteristics against Federal Aviation Administration airport planning criteria and Caltrans Division of Aeronautics land use guidance to determine whether hazards would be created such as proximity and/or height of proposed facilities in relation to airport surfaces and airspace. Also consider characteristics, such as lighting hazardous to aircraft operations and hazardous materials use by airports or in proximity to airports and airstrips.

Table 6-1
CEQA Protocol for Evaluating Potential Environmental Concerns

Topic	Environmental Consequences Issues to Evaluate
Interference with emergency response plans or emergency evacuation plans	• Identify emergency response plans and emergency evacuation plans in jurisdictions containing the project alternatives. • Consider whether the project alternatives would adversely affect these plans during construction and operation, such as: – Creating roadway interference from new facilities that would disrupt or substantially increase the response times of first-responders such as fire and police services. – Increasing or new public-use of facilities or surface traffic, resulting in increased vehicle or pedestrian congestion that would interfere with emergency response or evacuation. – Closing or otherwise restricting roadways identified as evacuation routes. • Consider whether project alternative features, such as high-capacity high-speed trains, public-assembly facilities (stations), and local roadway improvements (grade separations), would improve emergency response and provide enhanced evacuation capabilities.
Wildland fire hazards	• Identify whether wildland proximity to populated areas including urban areas and intermixed wildland/residential areas would change as a result of project alternatives. • Identify whether project alternative features, such as power lines and facilities, or storage and maintenance facilities, would potentially increase wildland fire hazards. • Consider whether changes in proximity, construction, and operations of project alternatives would expose people or structures to increased potential hazard from wildland fires.

Source: The CEQA Guidelines are codified at Title 14 California Code of Regulations section 15000 et seq.

Acronym:
PEC = potential environmental concern

Table 6-2
Number of Hazardous Waste/Material Sites by Segment and Alignment Alternatives

Segment[a]	Alignment Alternative[b]	Number of Hazardous Waste/Material Sites[c]
Segment B: Fresno	BNSF Alignment	21
Segment C: Rural	BNSF Alignment and Corcoran Elevated	13
Segment C: Rural	West Hanford Bypass	5
Segment C: Rural	Corcoran Bypass	3
Segment C: Rural	Allensworth Bypass	—
Segment C: Rural	Wasco-Shafter Bypass	—
Segment D: Bakersfield	BNSF Alignment	2
Segment D: Bakersfield	Bakersfield South[d]	3
Segment D: Bakersfield	Bakersfield Hybrid[e]	3

Notes:

[a] Segments defined.

[b] Some sites are flanking more than one alignment alternative. The closest alternative is noted here.

Segment B: Fresno. This segment begins in north Fresno at Clinton Avenue, at the southern end of the UPRR Fresno yard, continues through downtown Fresno, and terminates in the vicinity of the township of Bowles, south of Fresno. Although the segment begins at Clinton Avenue, the Authority required that the northern extent of this assessment for hazardous wastes and materials begin at Amador Street and continues south.

Segment C: Rural. This segment begins in the vicinity of Bowles and continues southeast to Hageman Road in the community of Rosedale on the northern outskirts of Bakersfield.

Segment D: Bakersfield. This segment begins in the northern outskirts of Bakersfield in the vicinity of Hageman Road, continues east through downtown Bakersfield, and terminates approximately at Oswell Street at the southern edge of the city.

[c] NPL, EnviroStor (former State Priority List), or SWLF sites only. Refer to Section 4.4.2 for the screening criteria. Because some site may be listed in more than one database, sites may be counted more than once in this table, the total number of sites shown is greater than the 39 sites discussed in Table 5-1.

[d] Both Segment D alignment alternatives pass through the Texaco and Tosco refinery sites.

[e] The Bakersfield Hybrid alignment closely mirrors the BNSF and Bakersfield South Alternatives involves the same PEC sites.

— The segment contained no listings on the database used.

SWLF solid waste landfill

Table 6-3
Estimated Waste Generated during Construction, Operation, and Maintenance Phases

Fresno to Bakersfield Construction and Demolition Generated Wastes (estimated for the duration of construction)				
Waste Type	**Units**	**Classification**	**Urban**	**Rural**
Hazardous soil	Cubic yards	H	40,000	
Asbestos-containing materials (ACMs) (only friable ACM is considered as hazardous)	Cubic yards	H	1,300	1,200
Contaminated fuel	Gallons	H/R	23,000	
Nonhazardous soil	Cubic yards	NH/R	7,960,000	
Demolition debris	Cubic yards	NH	47,000	53,000
Asphalt	Cubic yards	NH/R	109,000	172,000
Concrete	Cubic yards	NH/R	62,000	28,000
Scrap pipe, culvert, wire	Feet (meters)	R	52,800 (16,000)	47,000 (14,000)
Glass	Pounds	R	69,000	
Unused paint	Gallons	R	200	
Brick	Pounds	R	2,000,000	
Brush	Cubic feet	R	199,000	
Wood	Pounds	R	33,000	
Hazardous water	Gallons	H/R	1,000,000	
Nonhazardous water	Gallons	H/R	271,000,000	
Used oils	Gallons	H/R	701,000	
Oil filters	—	H/R	9,700	
Hydraulic fluid	Gallons	H/R	701,000	
Sanitary wastes	Gallons	H	6,900,000	
Solvents	Gallons	NH/R	5,500 (100 55-gallon drums)	
Chemicals	Gallons	NH	105,000 (519 cubic yards)	
Chemical containers	Cubic yards	NH	100	
Metal	Pounds	R	520,000	
Paper	Pounds	R	270,000	

Notes:

Location will be the HST segment between Fresno and Bakersfield including three station locations and one heavy maintenance facility.

H Hazardous
H/R Hazardous/recyclable
NH Nonhazardous
NH/R Nonhazardous/recyclable
R Recyclable

Table 6-4
Active Waste Disposal Sites in Fresno, Kings, Tulare, and Kern Counties

Disposal Site	County	Class [a]	Permitted Capacity (Cubic Yards)	Remaining Capacity (Cubic Yards)	Remaining Capacity (Date Measured)	Estimated Closure Date
City of Clovis	Fresno	III	7,800,000[b]	2,121,641[b]	2008	4/30/2047
Coalinga Disposal Site	Fresno	III	3,348,262[c]	1,930,062[c]	2008	12/31/2029
H.M. Holloway Landfill	Kern County	N/A	12,600,000[d]	8,350,000[d]	2006	1/31/2019
Bena	Kern County	III	53,000,000[e]	44,818,958[e]	2006	12/31/2038
Boron	Kern County	III	1,002,819	208,632[e]	2001	12/31/2013
Ridgecrest	Kern County	III	5,992,700	5,000,898[e]	2001	12/31/2012
McKittrick Waste Treatment Site	Kern County	II	2,091,800	841,498[e]	2001	12/31/2029
Main Base Landfill, Edwards AFB	Kern County	III	2,250,000	1,078,875[e]	2001	12/31/2028
Shafter-Wasco	Kern County	III	11,635,500	7,901,339[e]	2005	12/31/2027
Tehachapi Sanitary Landfill	Kern County	III	2,593,900	874,874[d]	2007	1/1/2014
Clean Harbors Buttonwillow Landfill	Kern County	I	14,293,760	10,000,000[e]	2005	2035–2045
Taft	Kern County	III	8,787,547	6,679,433[e]	2001	12/31/2123
City of Avenal Landfill	Kings County	III	26,000,000	26,000,000[f]	2006	12/31/2020
Kettleman Hills Landfill	Kings County	I	10,700,000	6,000,000[f]	2000	2030
Chemical Waste Management Unit B-17	Kings County	II/III	18,400,000	17,700,000[f]	2009	2026–2030

Table 6-4
Active Waste Disposal Sites in Fresno, Kings, Tulare, and Kern Counties

Disposal Site	County	Class [a]	Permitted Capacity (Cubic Yards)	Remaining Capacity (Cubic Yards)	Remaining Capacity (Date Measured)	Estimated Closure Date
Chemical Waste Management Unit B-19	Kings County	II, III	4,200,000	1,901,860[f]	2005	12/31/2010
Teapot Dome Landfill	Tulare	III	6,546,407	998,468[g]	2004	1/1/2012
Visalia Landfill	Tulare	III	18,630,333	16,145,591[g]	2006	1/1/2024
Woodville Landfill	Tulare	III	11,924,450	6,970,183[g]	2006	12/31/2026

Source: Compiled by URS from information gathered from landfill and waste management agencies in Fresno, Kings, Tulare, and Kern Counties,

Notes:
[a] Landfill disposal sites are classified by the types of waste that they can receive. In California, Class I sites may accept hazardous and nonhazardous wastes; Class II sites may accept "designated" and nonhazardous wastes; and Class III sites may accept nonhazardous wastes.

[b] Confirmed by Patrick Snider: 916-324-3753 (1-13-10).

[c] Confirmed by Patrick Snider: 916-324-3753 (1-13-10).

[d] Confirmed by Kenneth F. Hersh, H.M Holloway: 661-758-6887 (1-19-10).

[e] Information provided by Anthony Bonanno, Waste Management Specialist, Kern, County Waste Management Department (1-20-10).

[f] Confirmed, Lee Johnson: 559-584-1411 (1-13-09).

[g] Information provided by Patty Ackley, Engineering Department, Solid Waste Division.

Acronyms
AFB Air Force base
N/A Not applicable

Figures

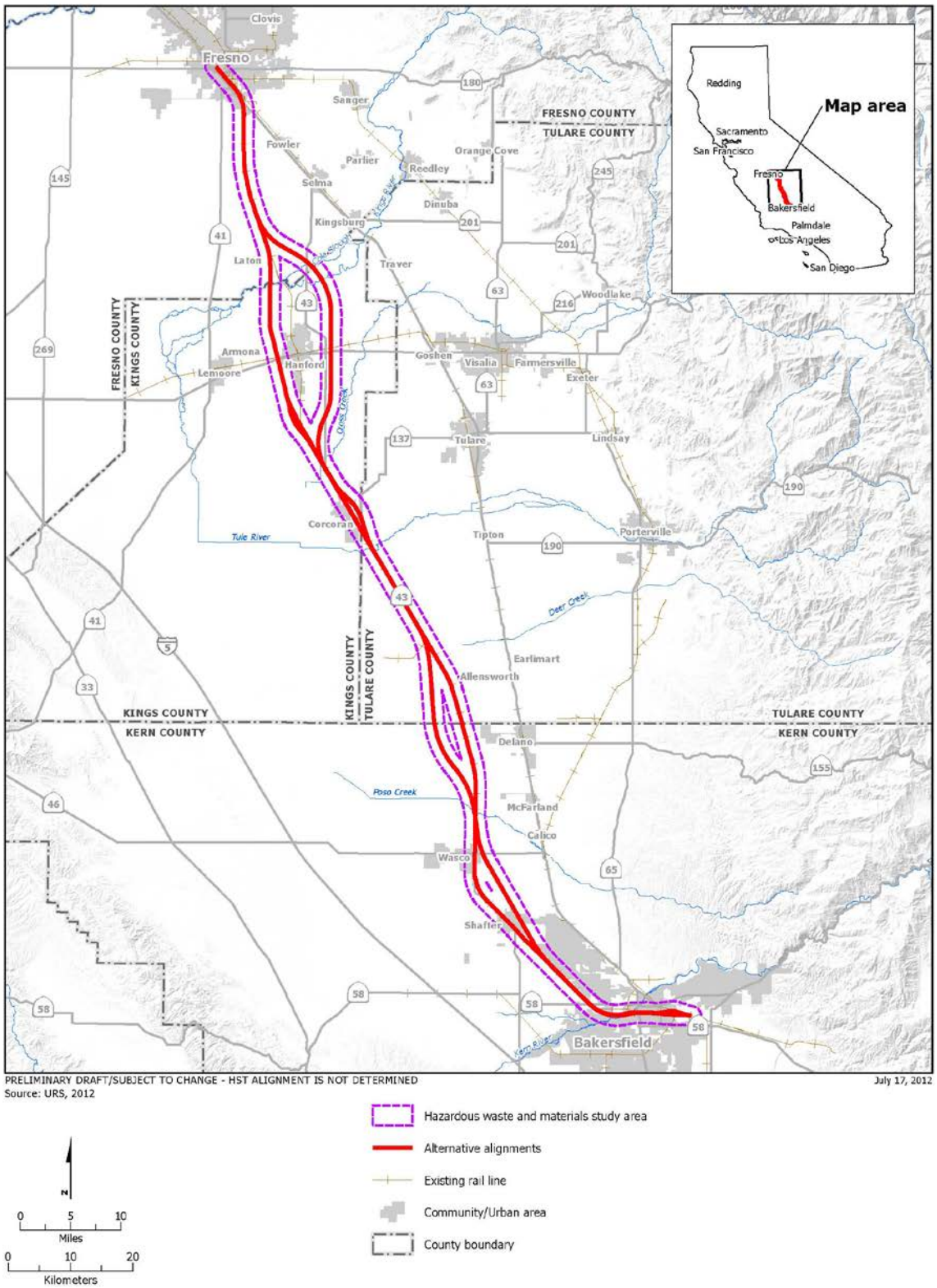


Figure 4-1
Hazardous Waste and Materials Study Area

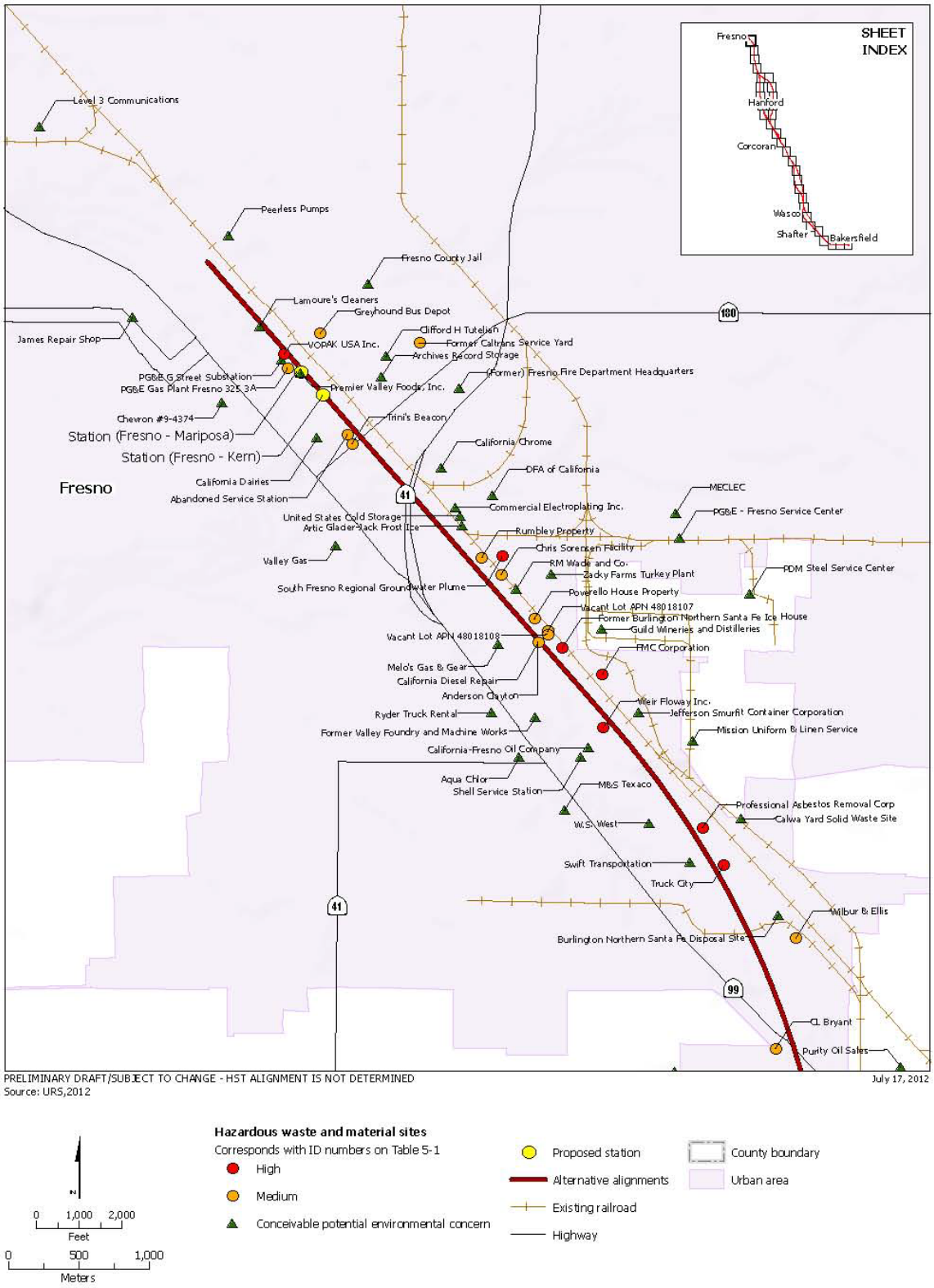
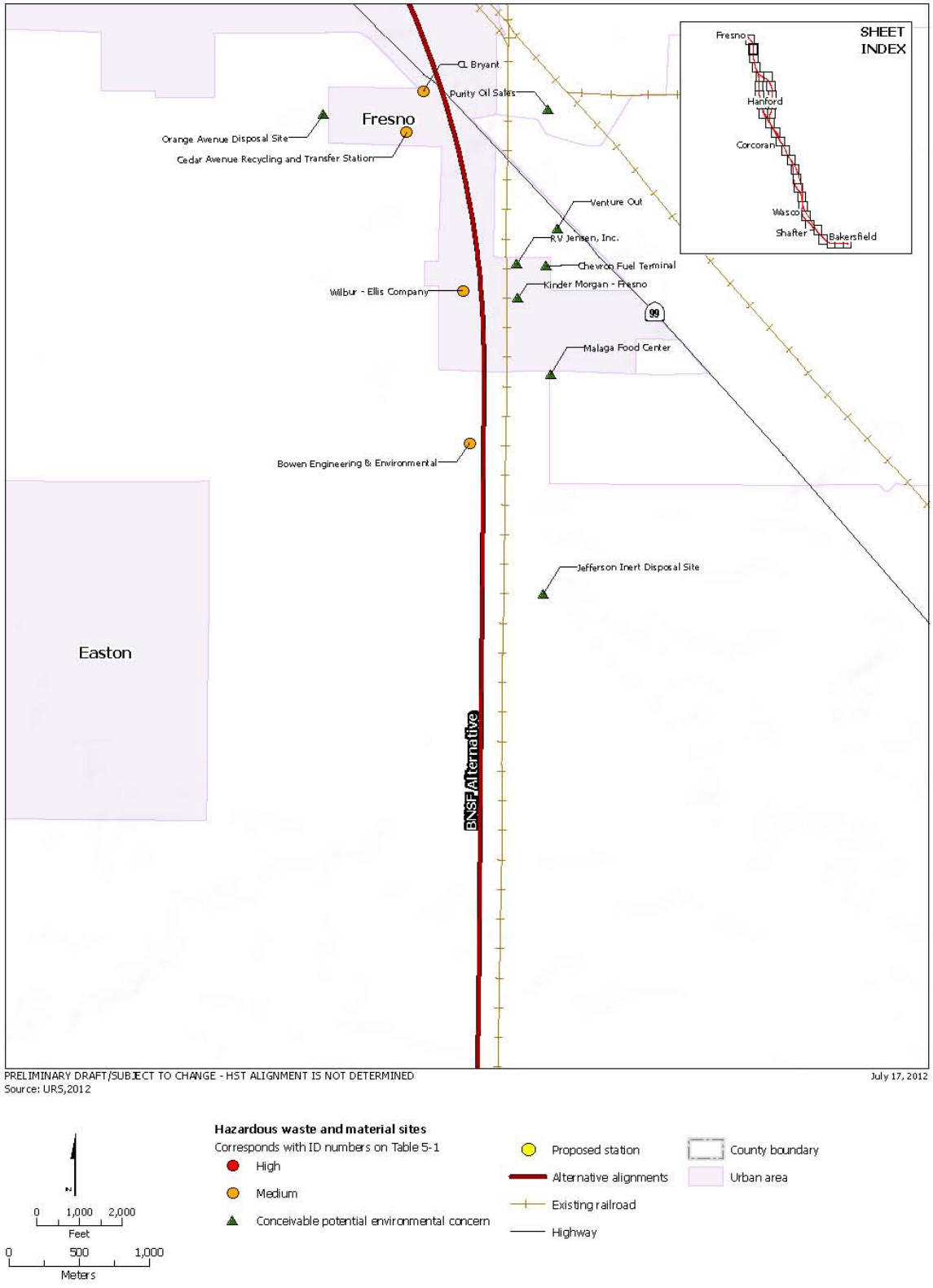


Figure 5-1
Sheet 1: Hazardous Waste and Materials in the Study Area



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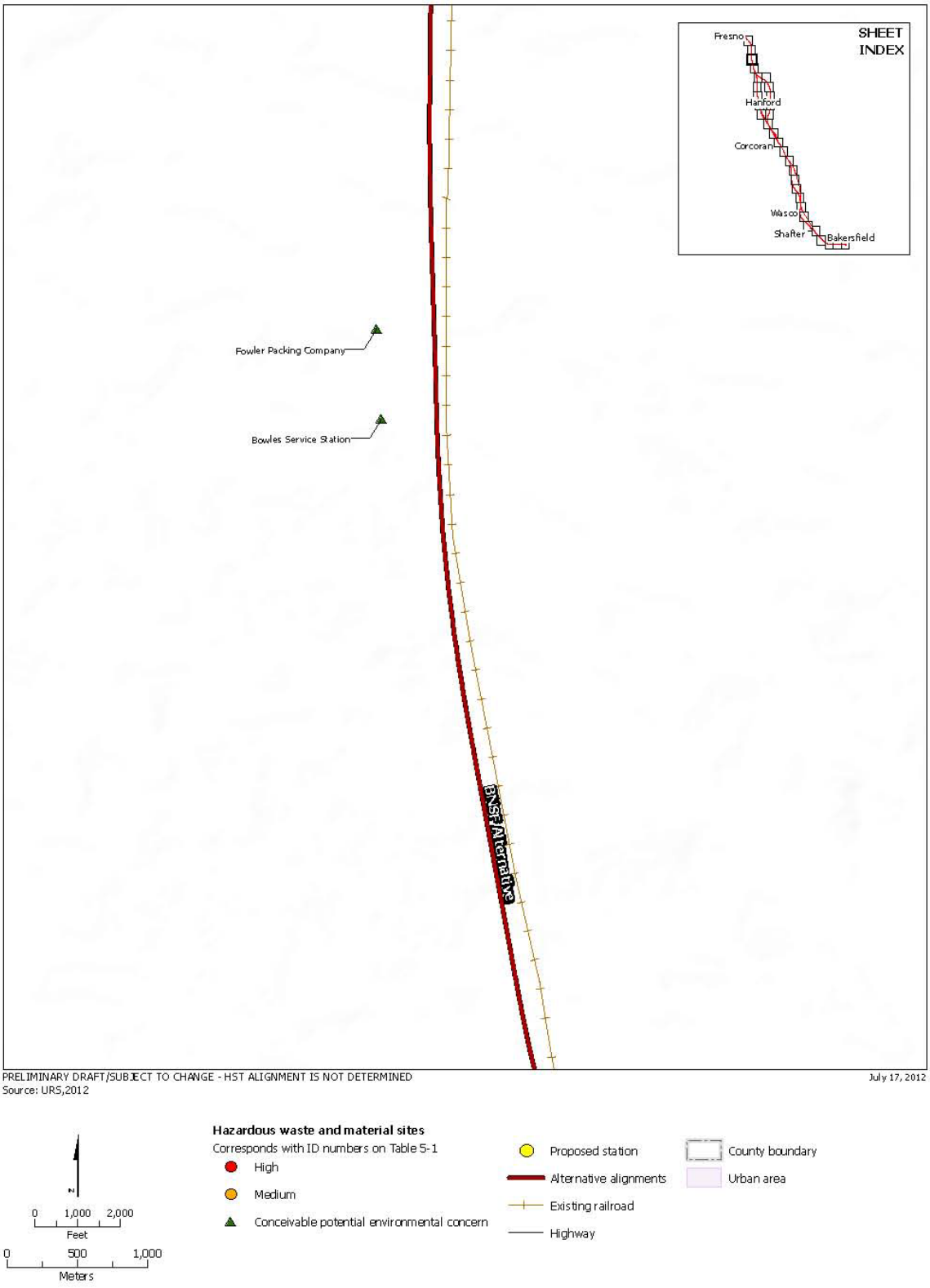

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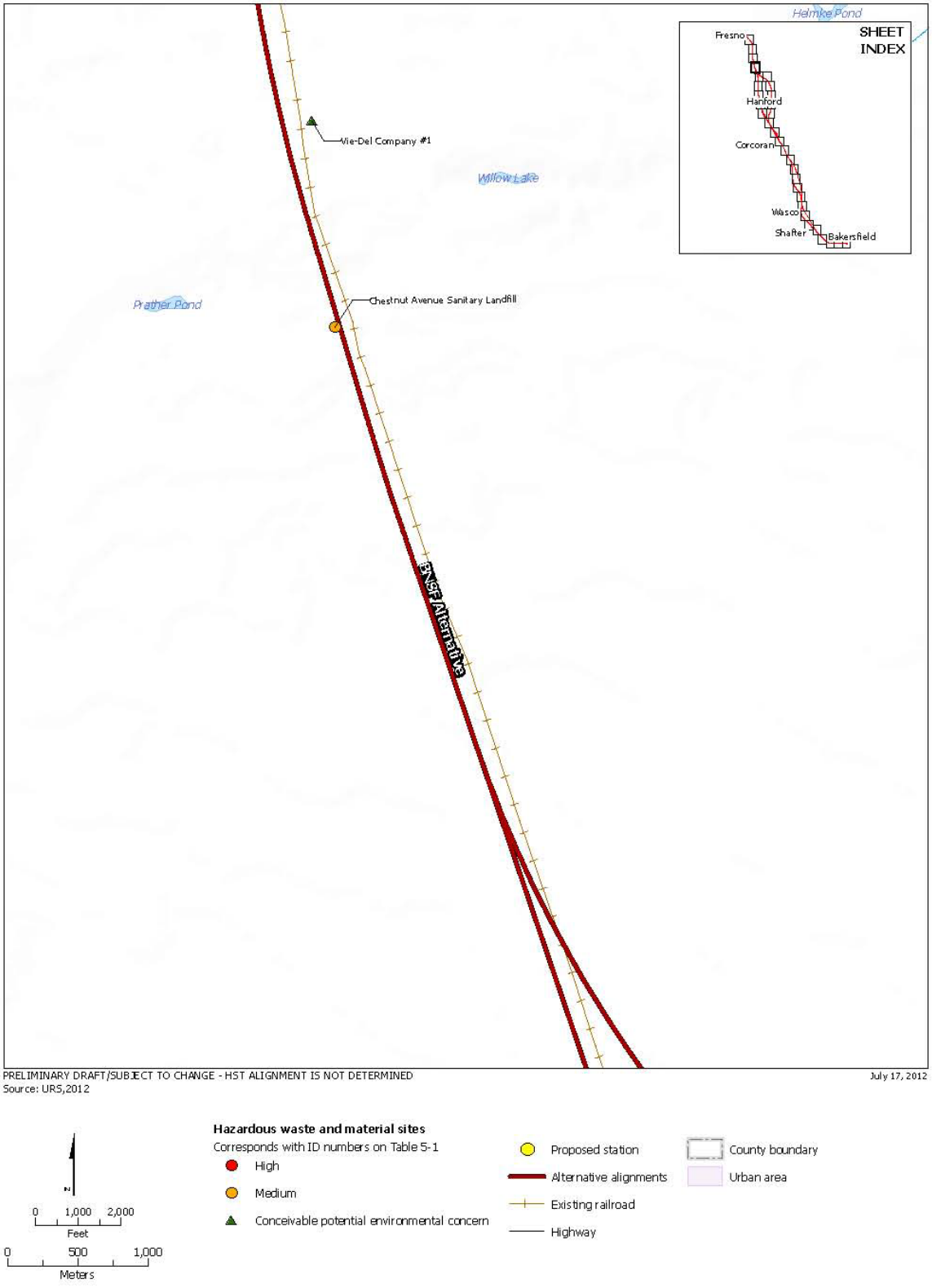

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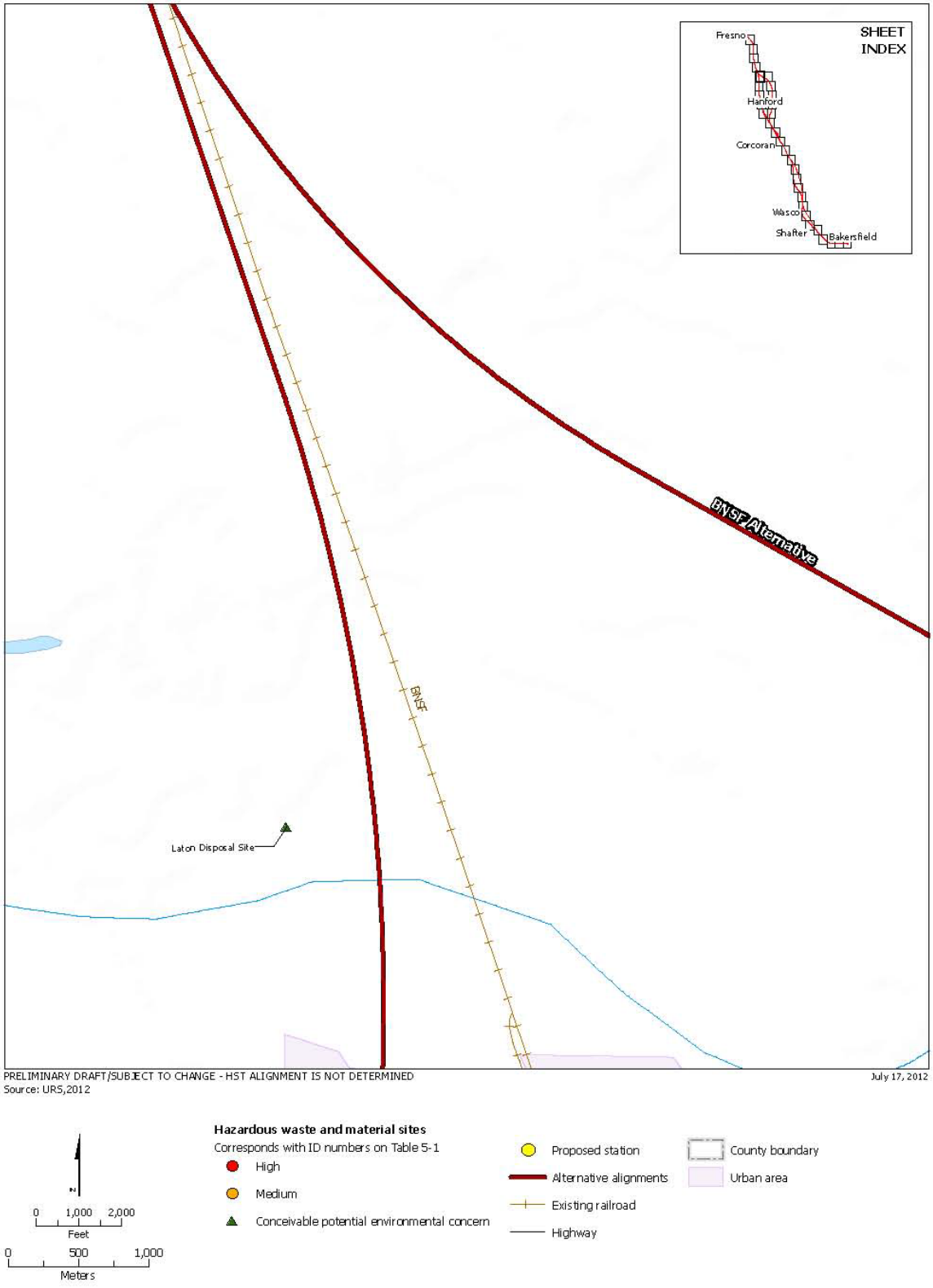

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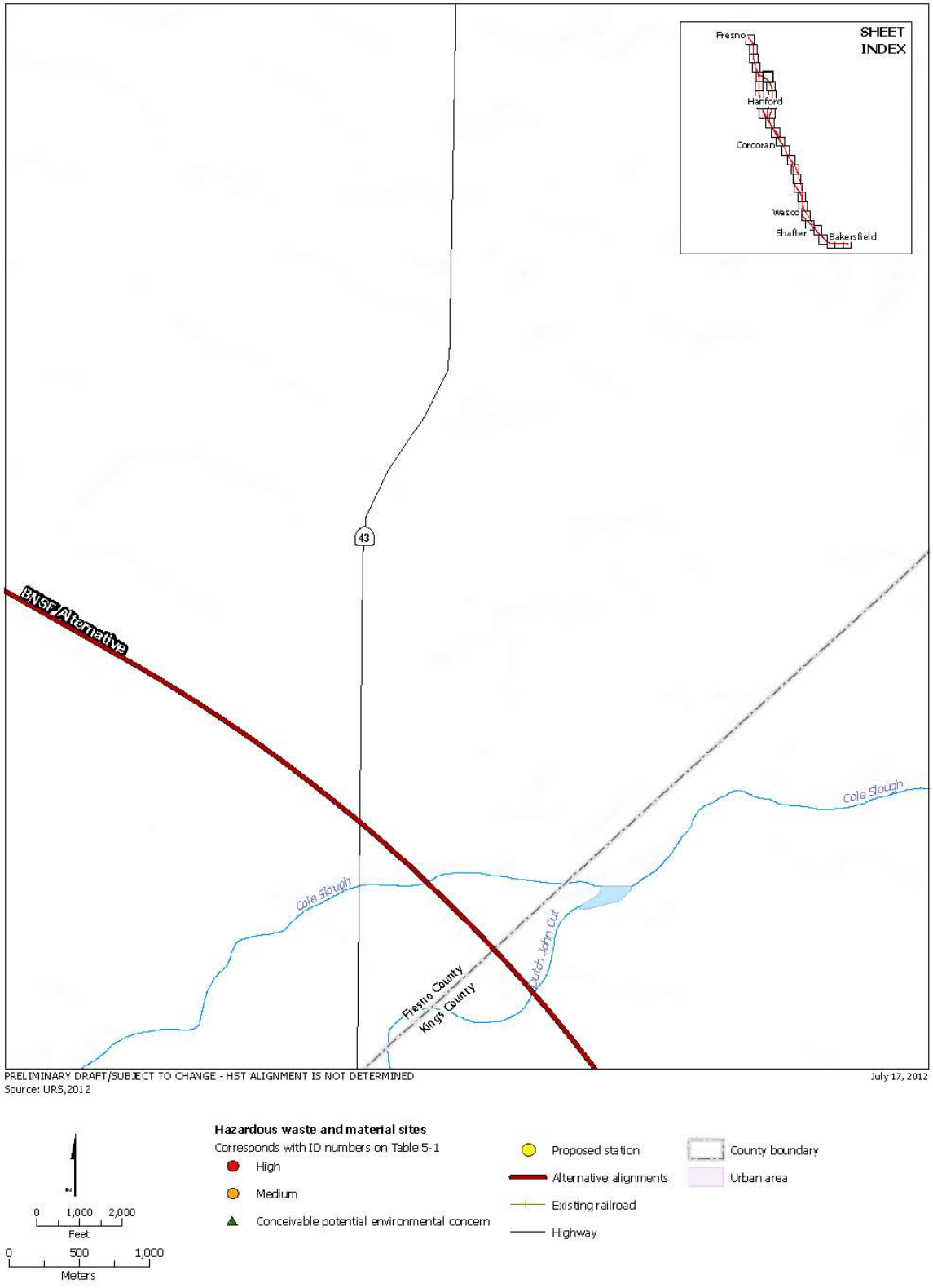

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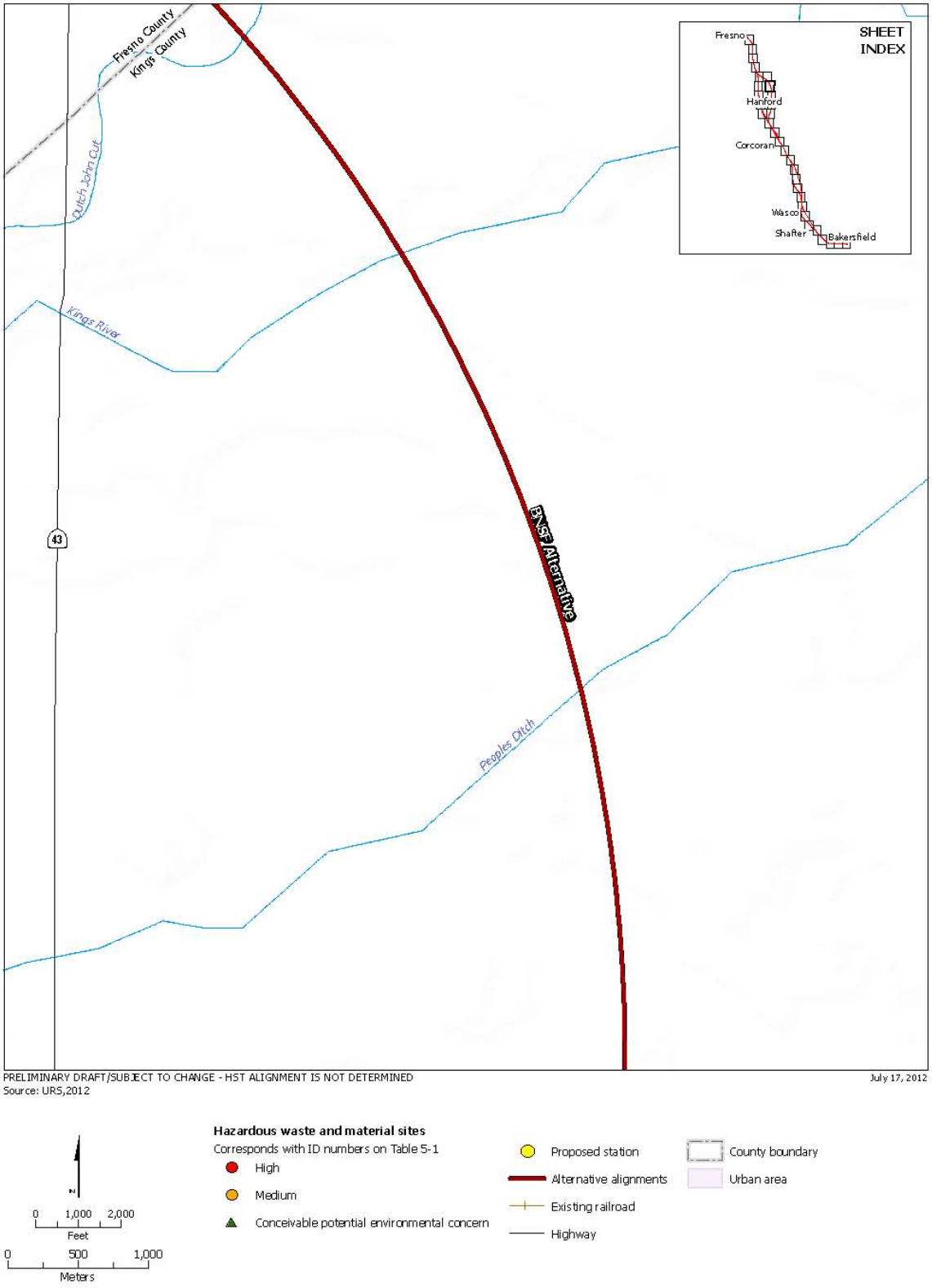

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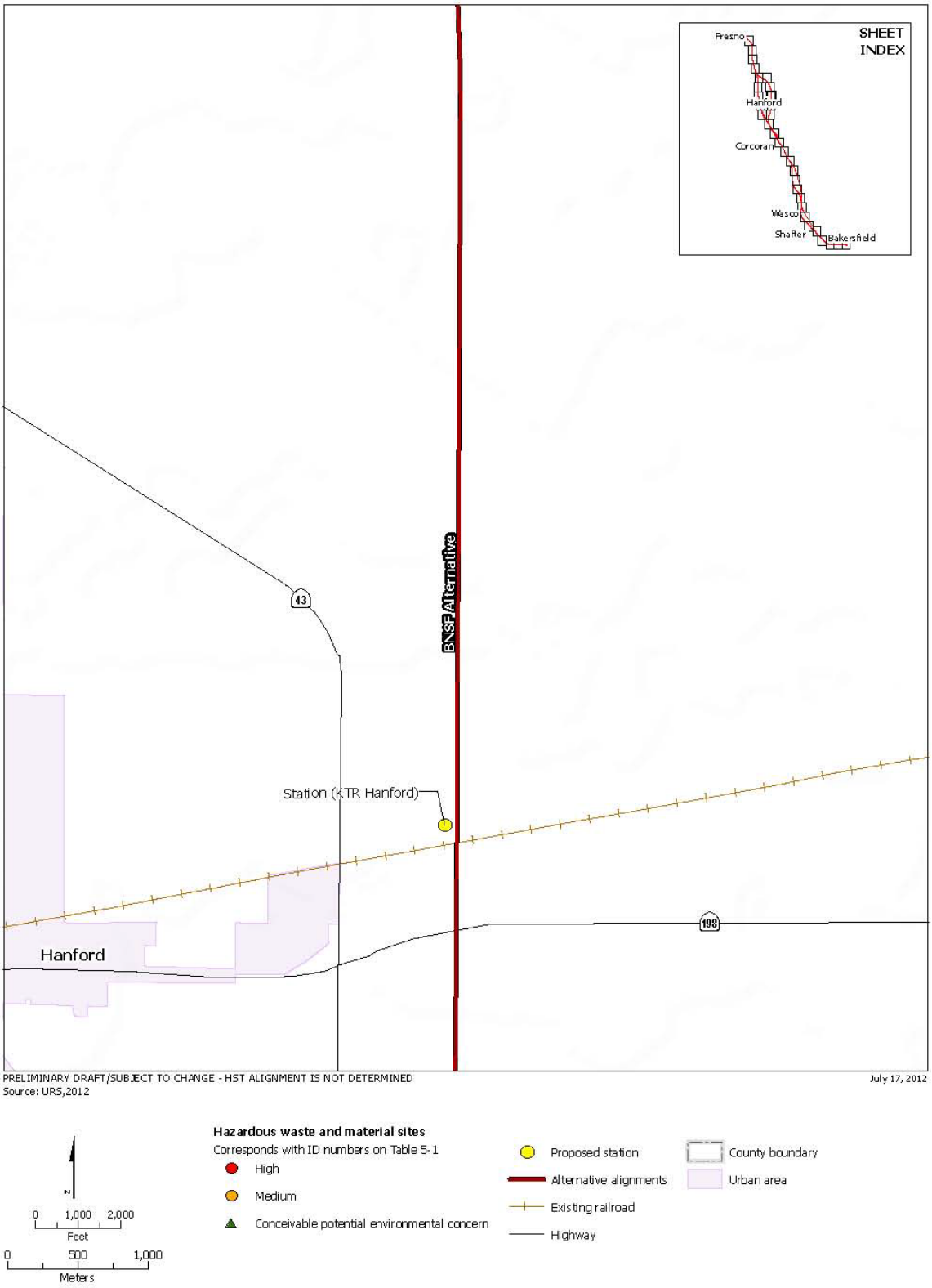

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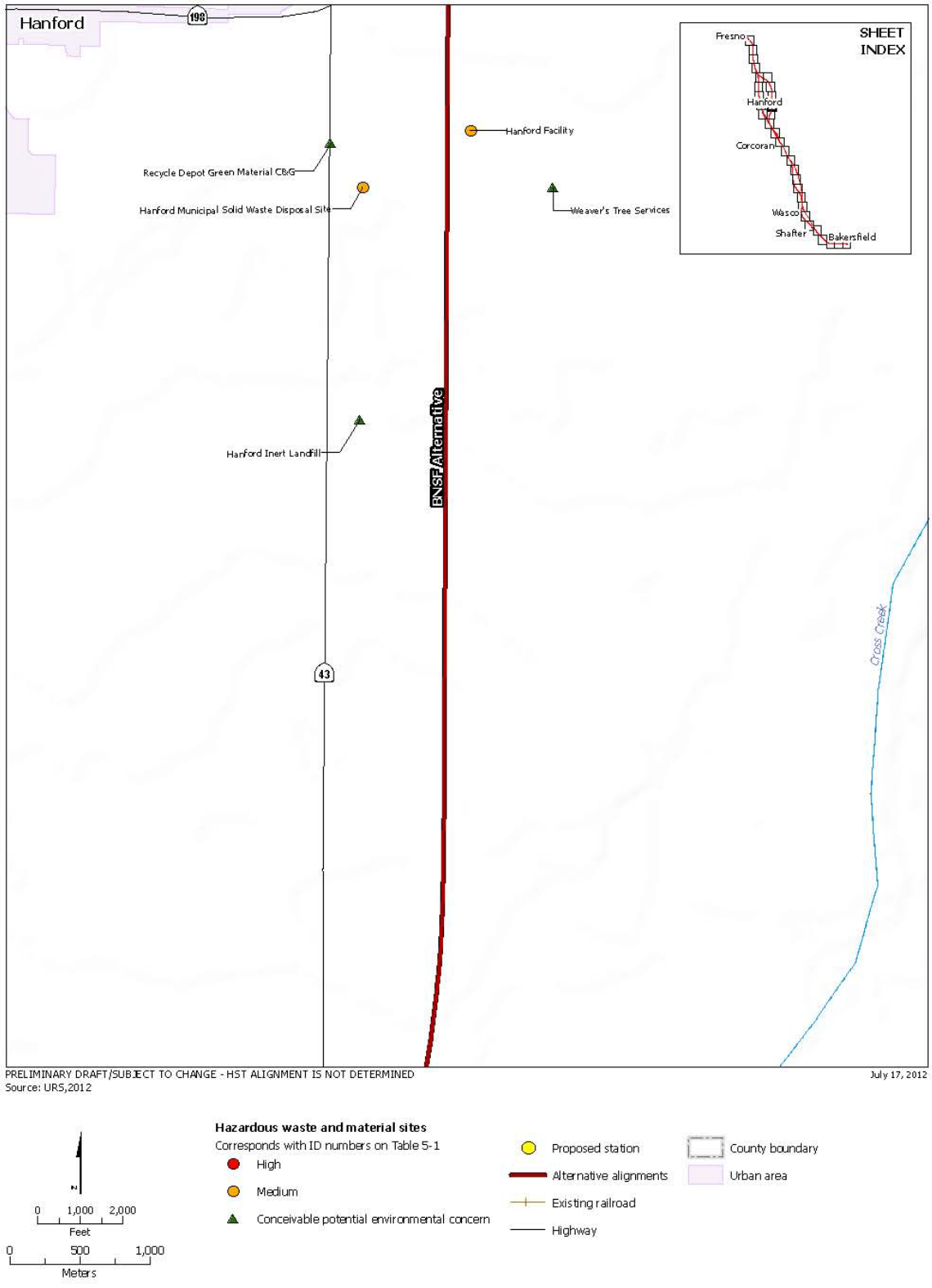

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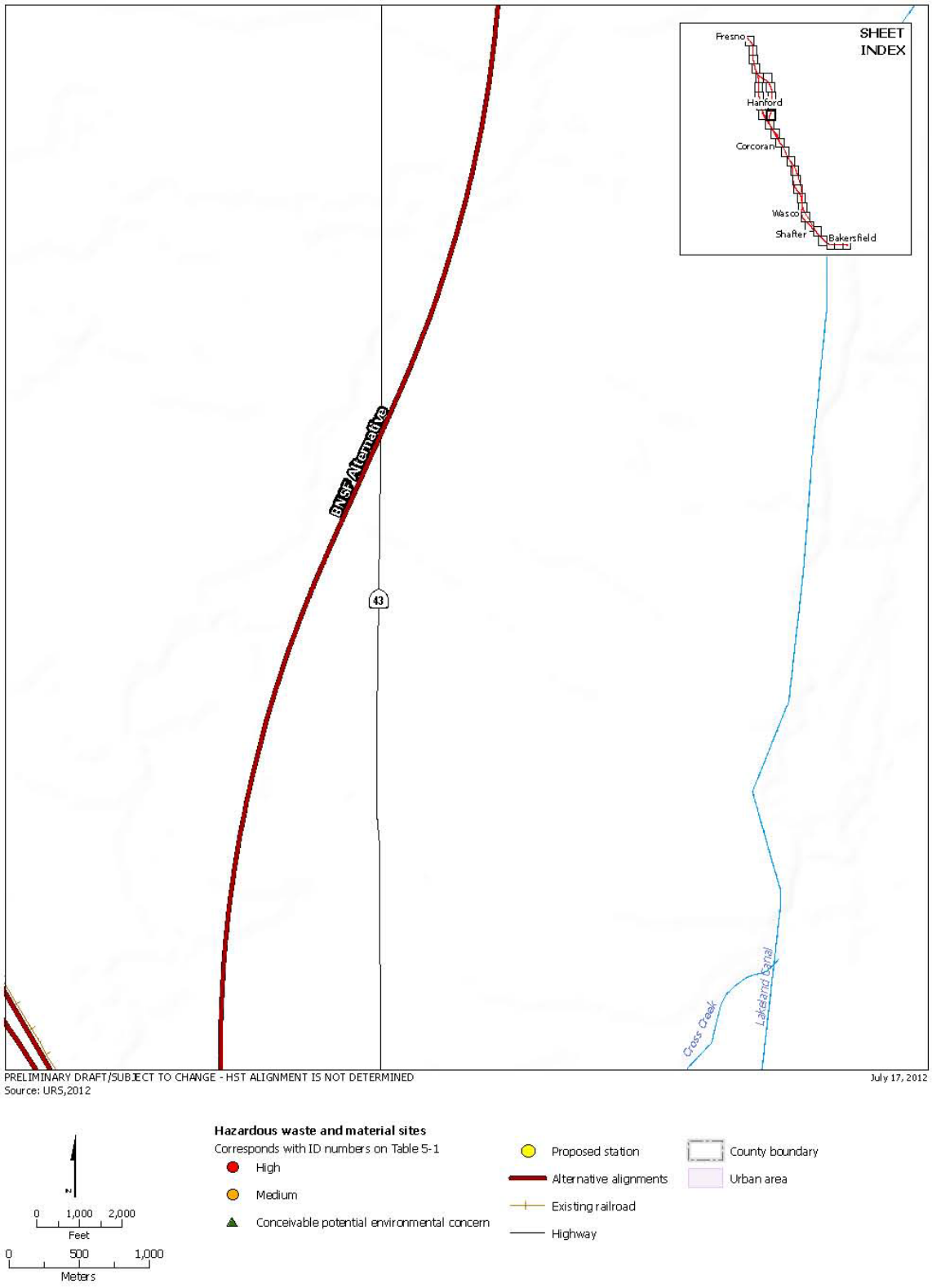

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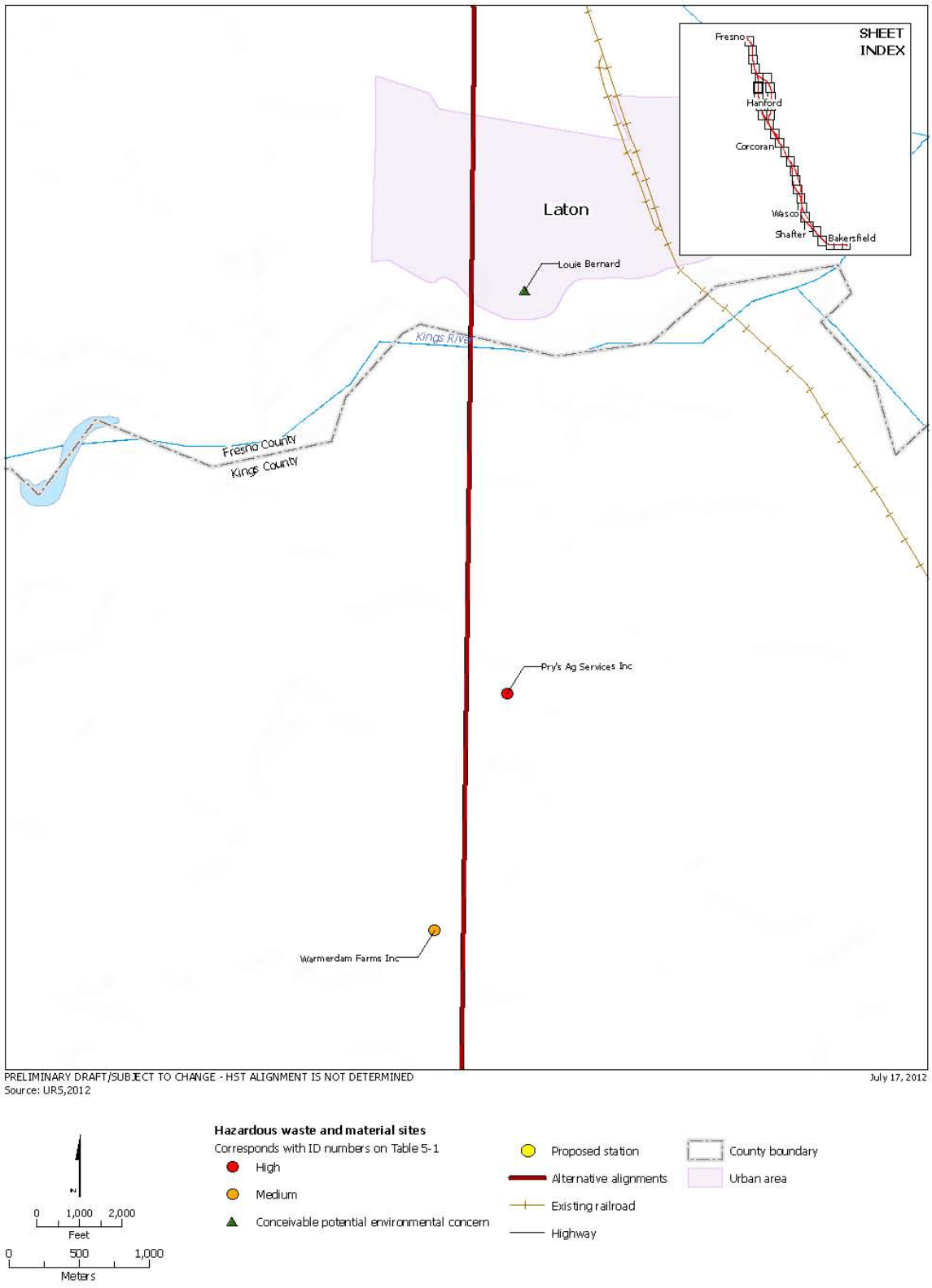

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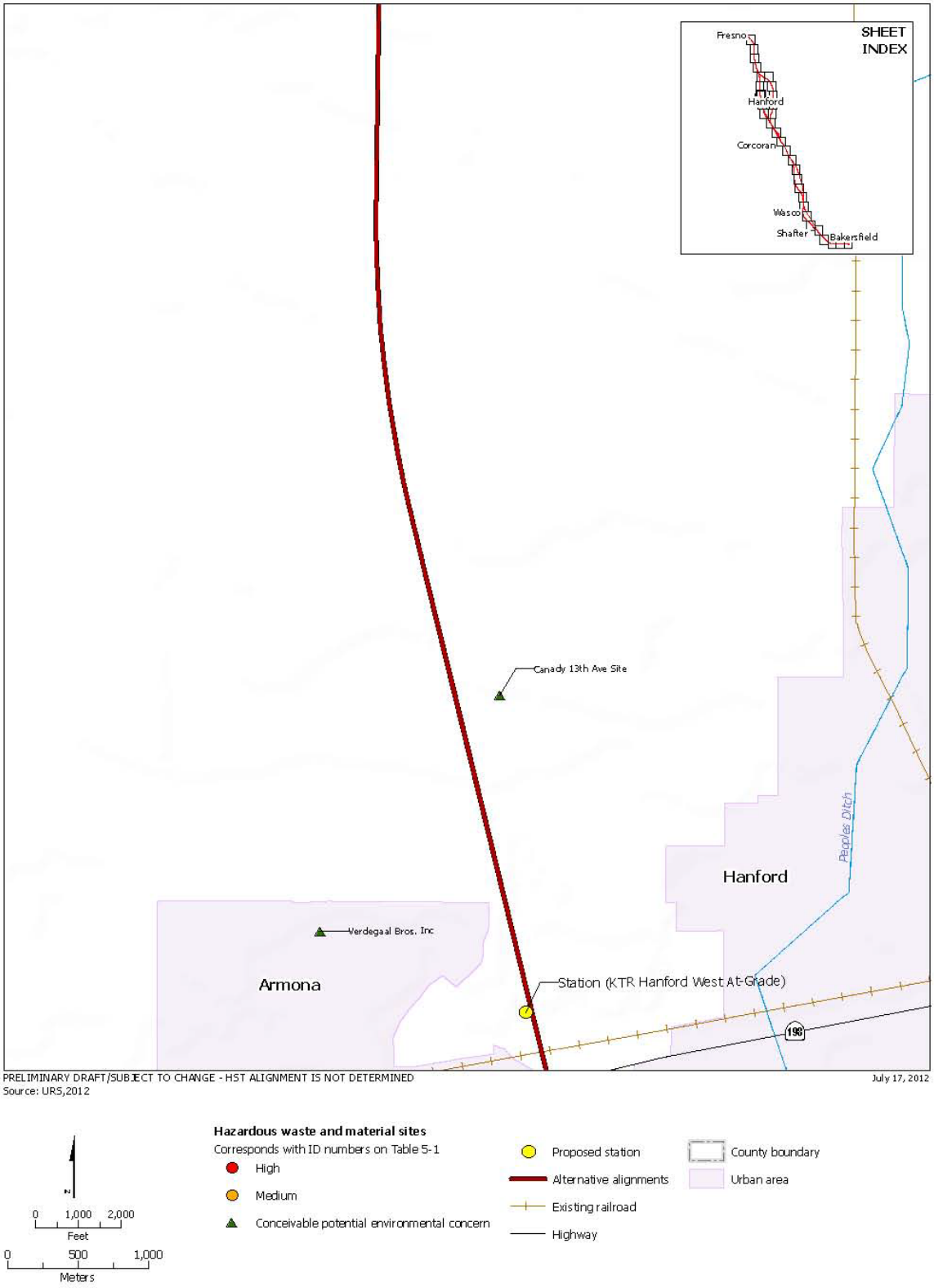

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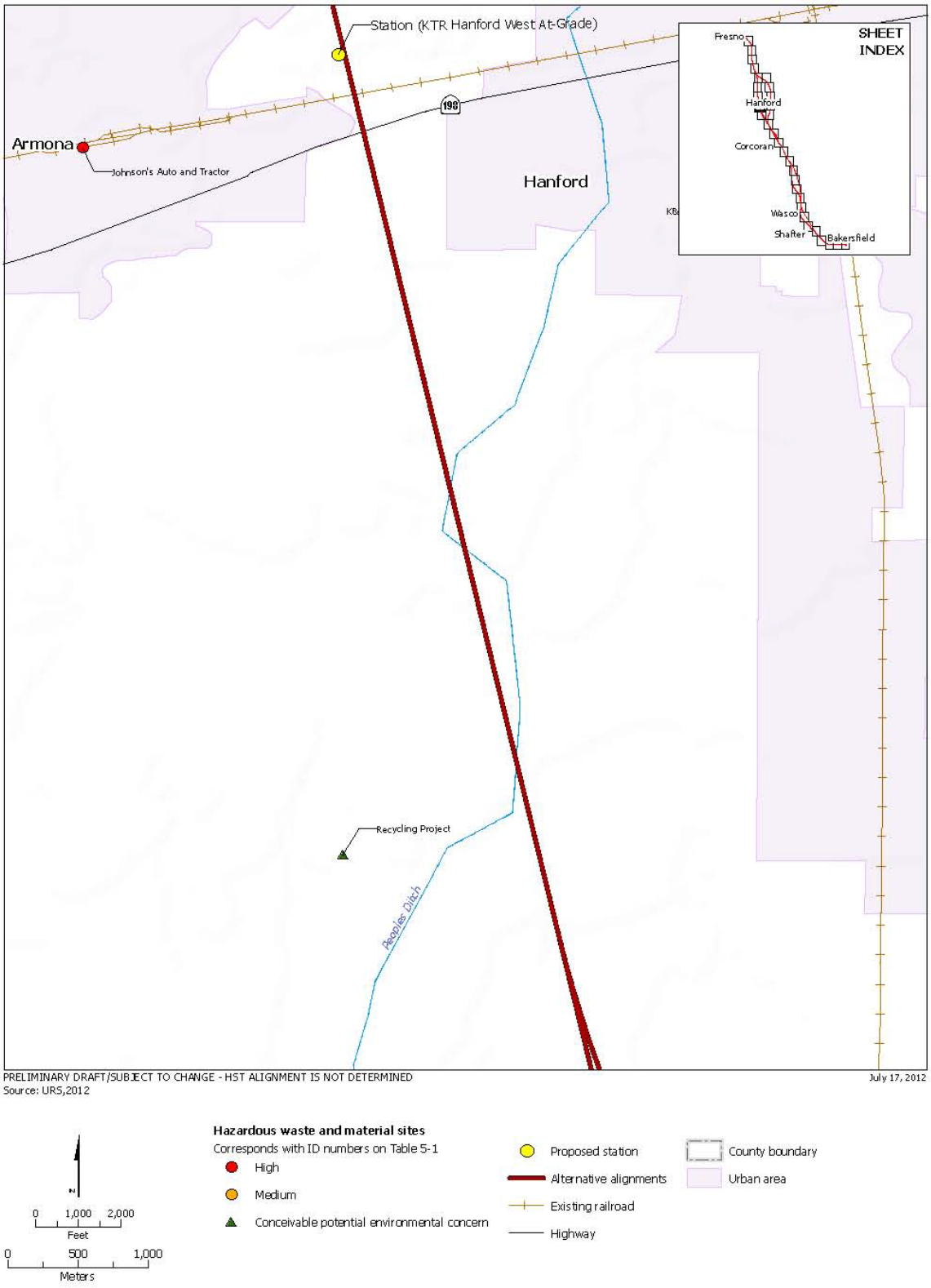

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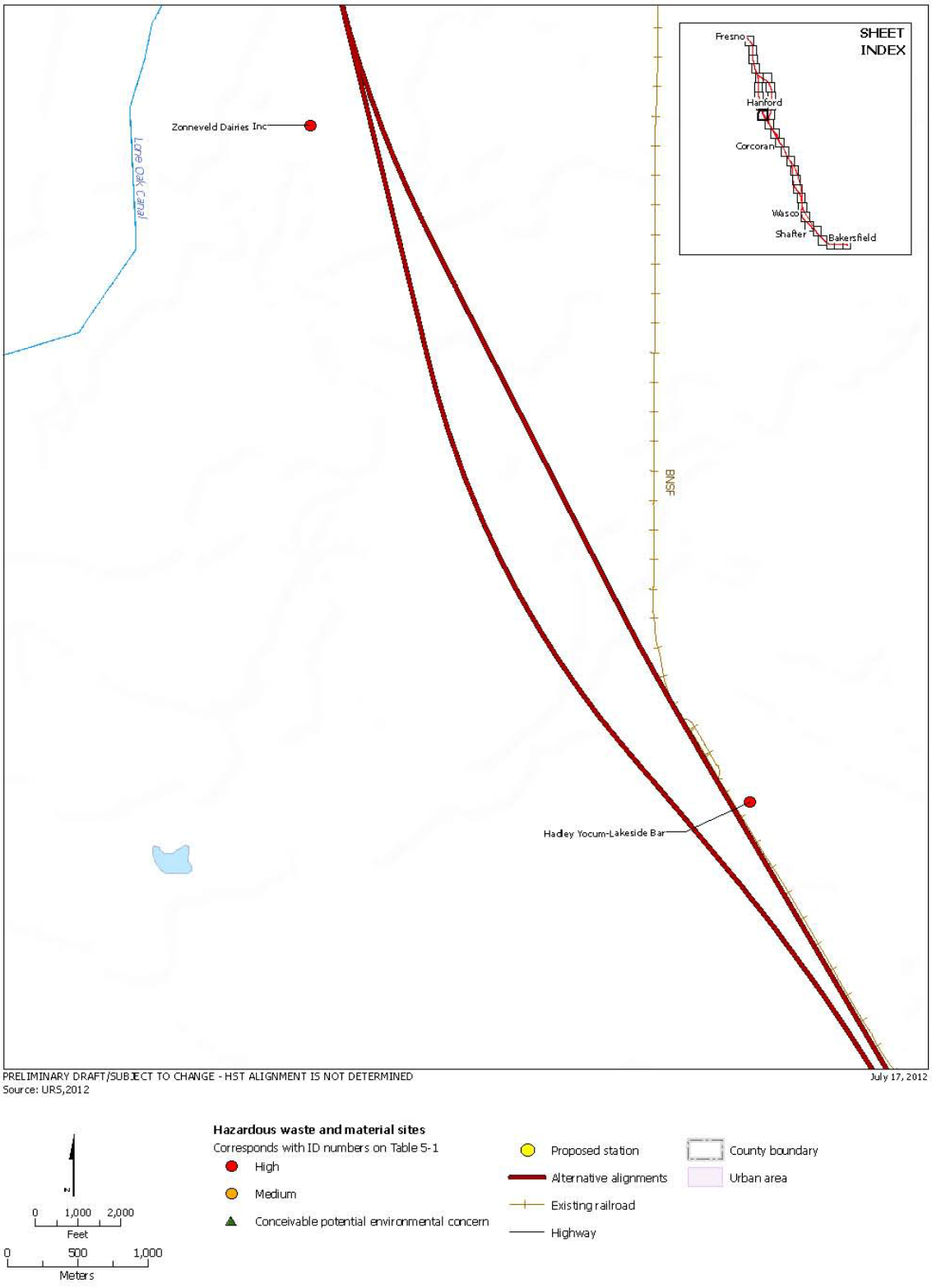

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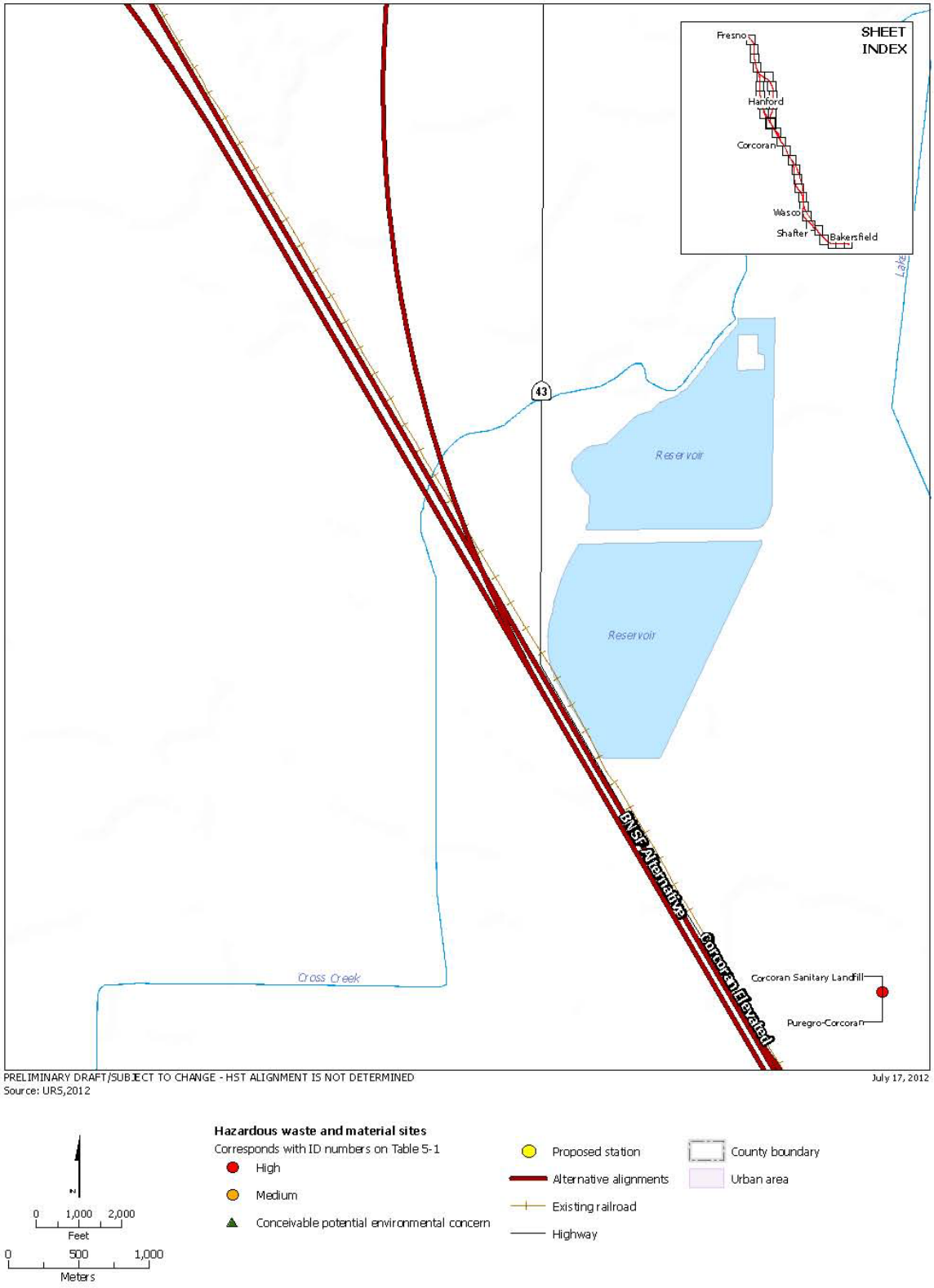

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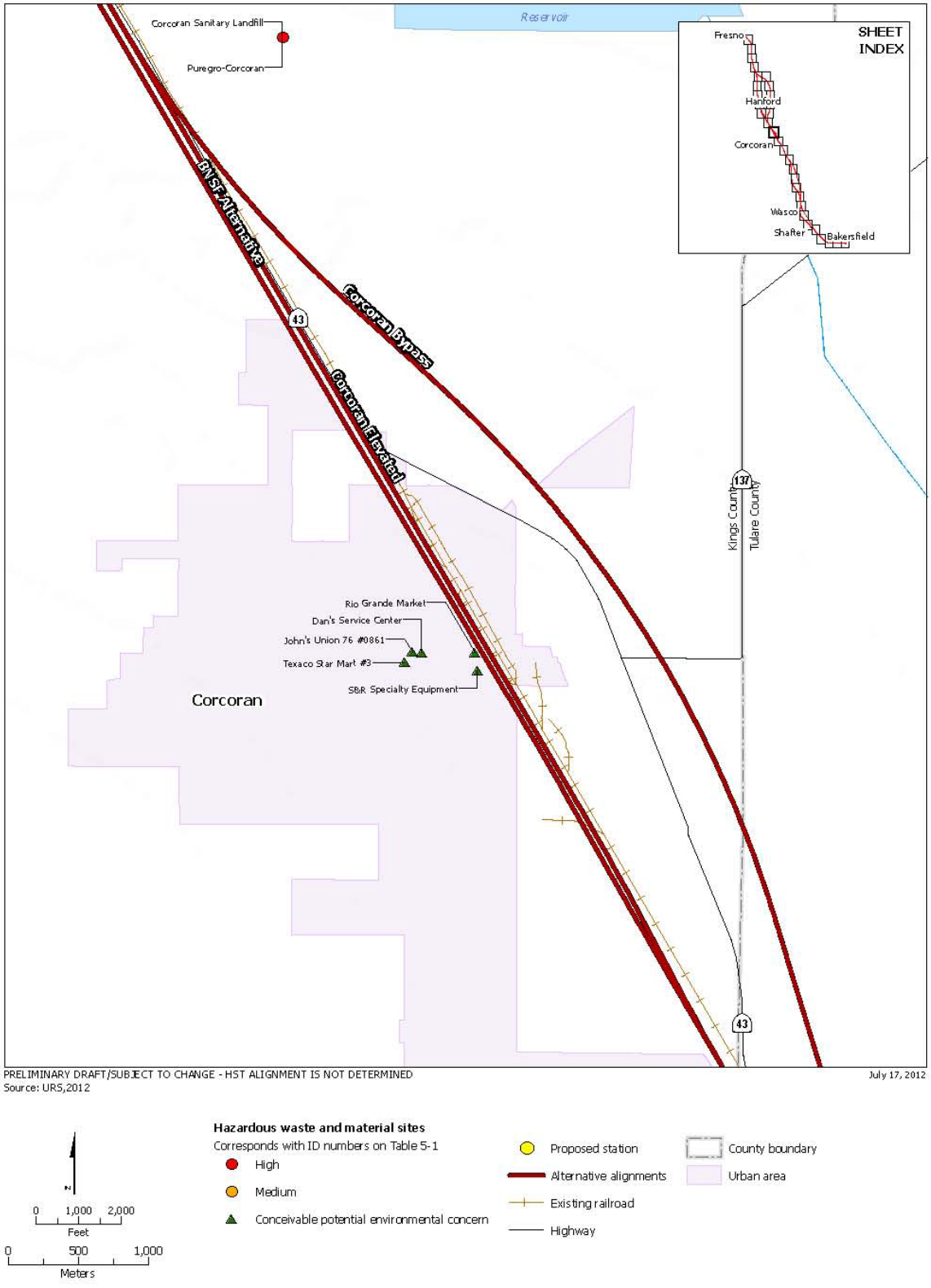

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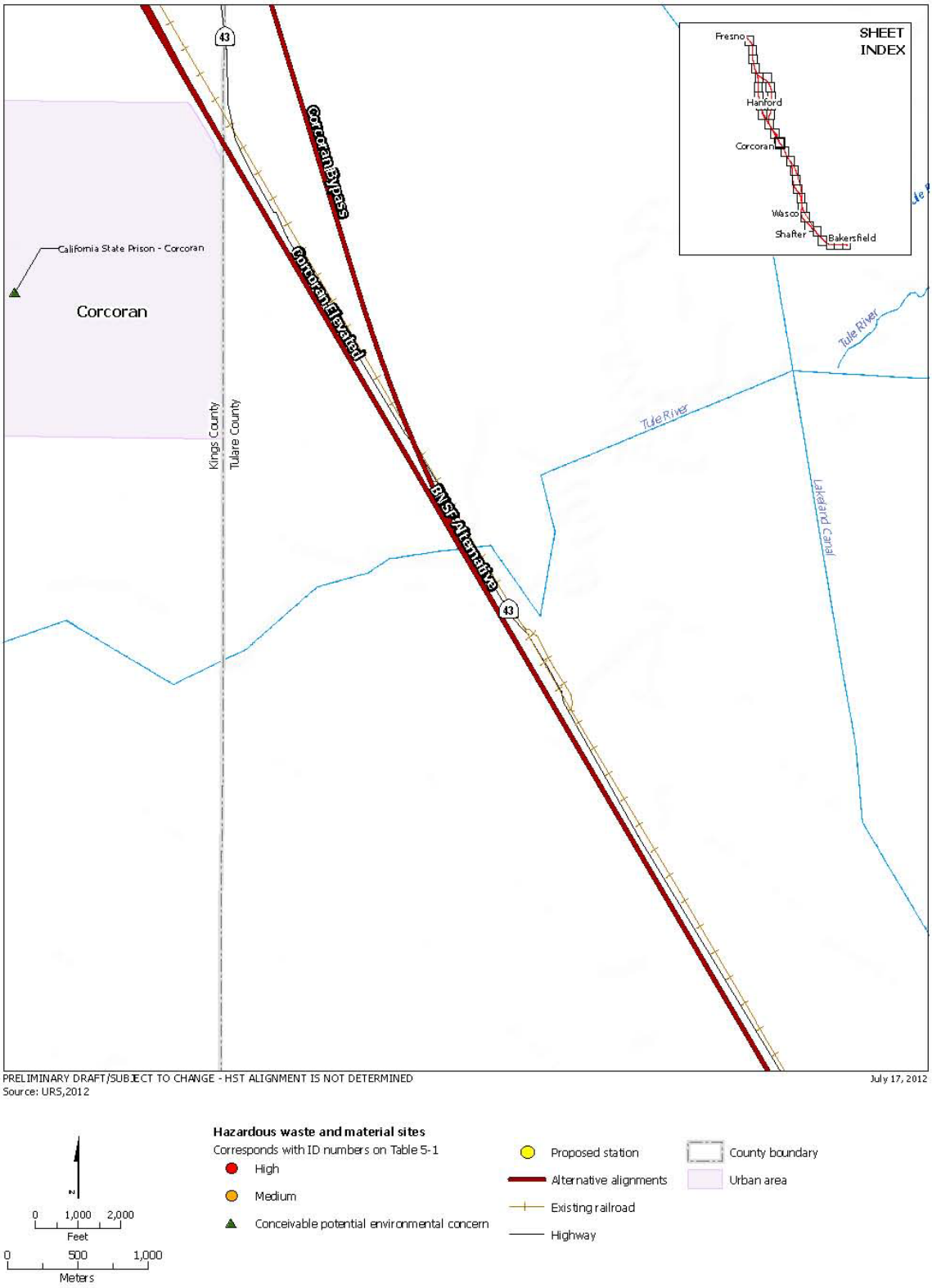

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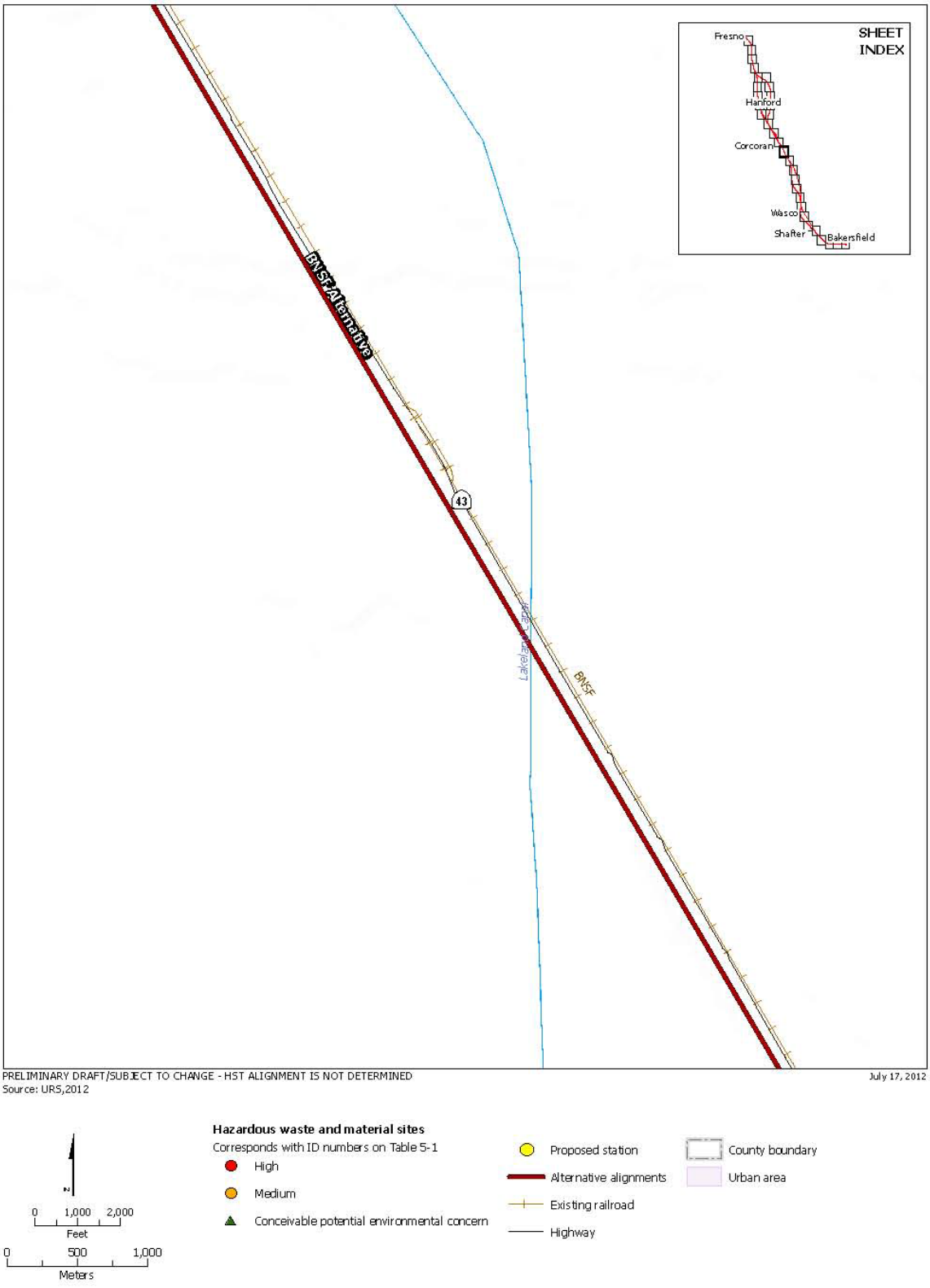

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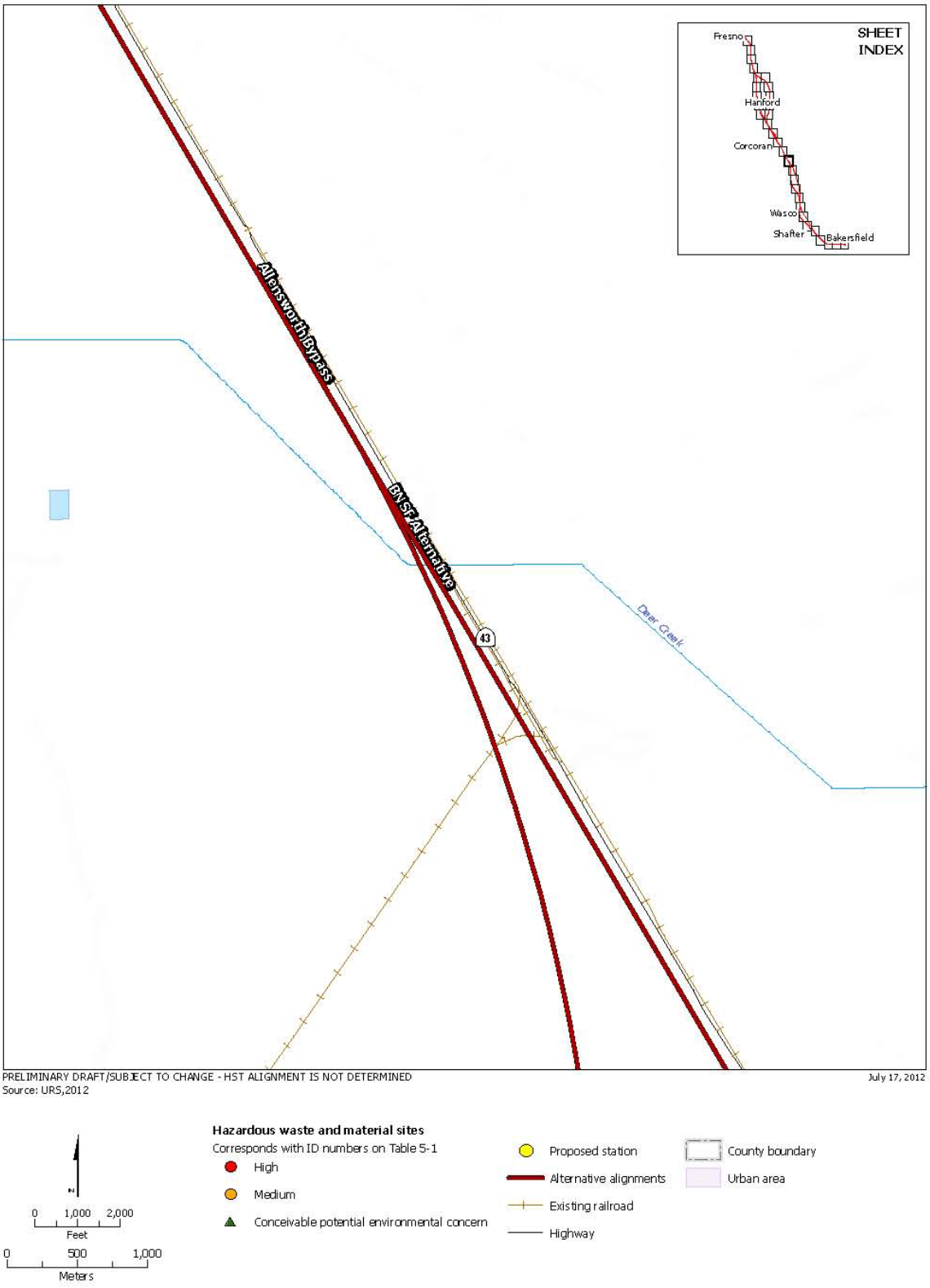

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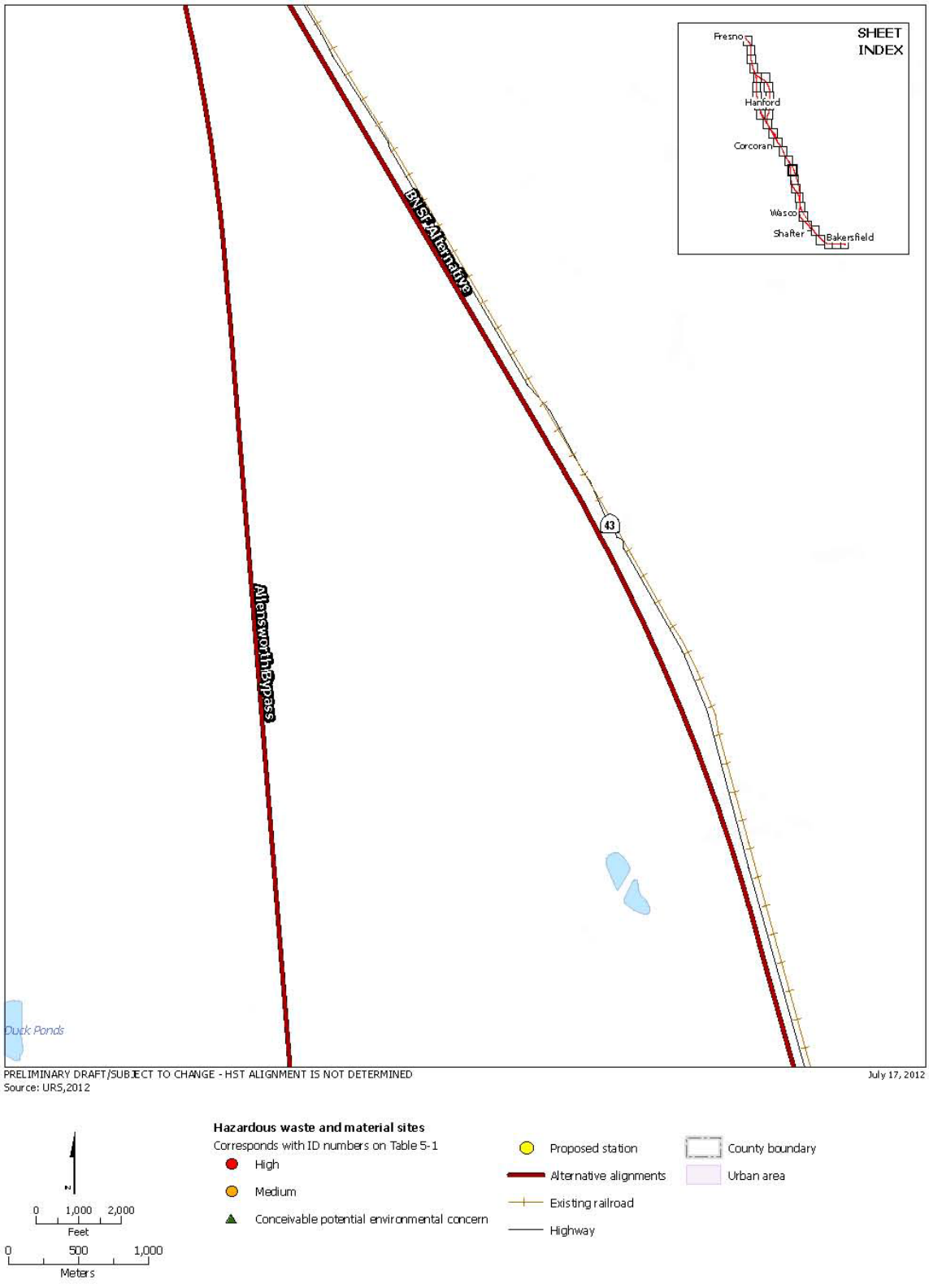

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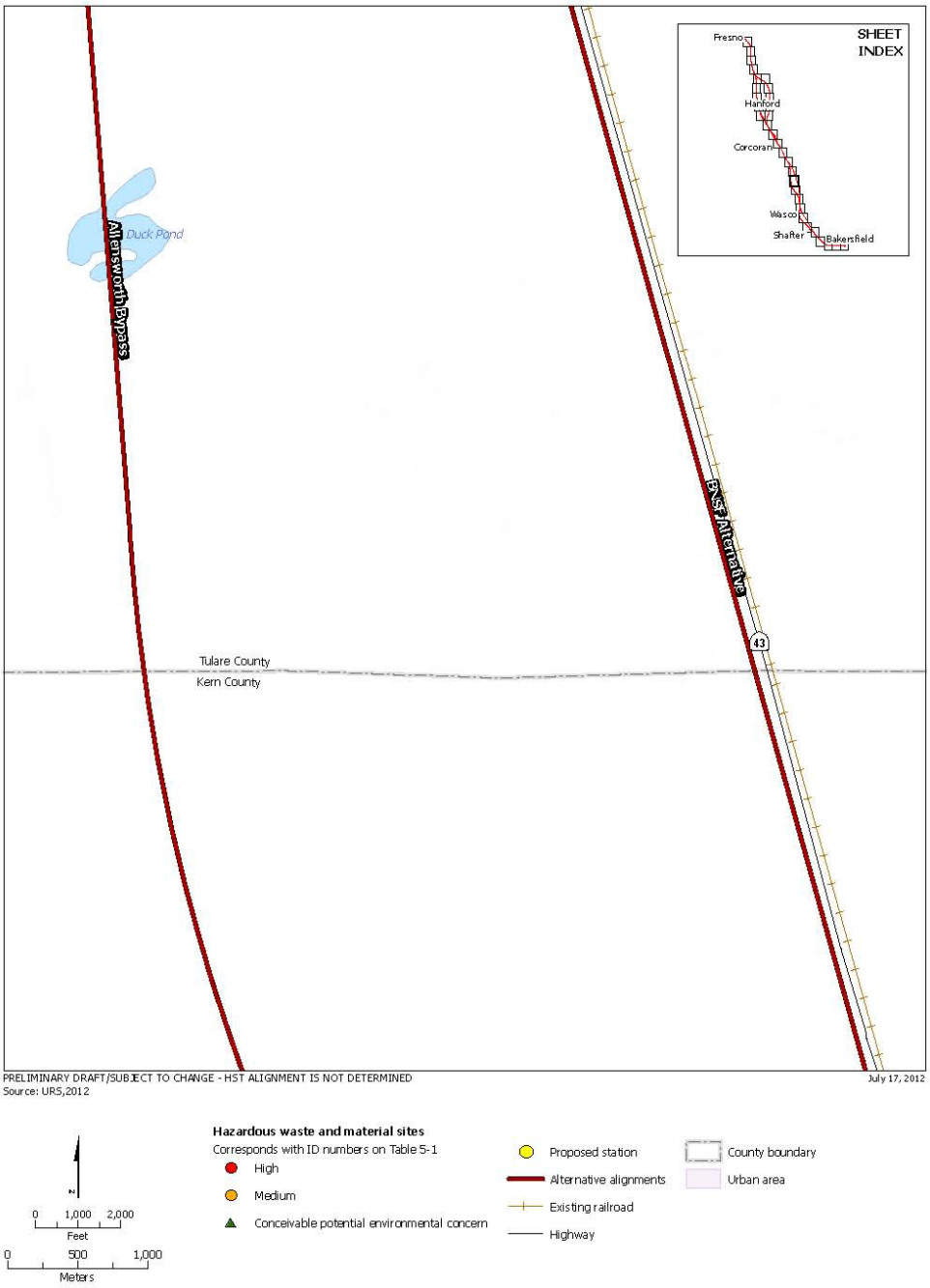

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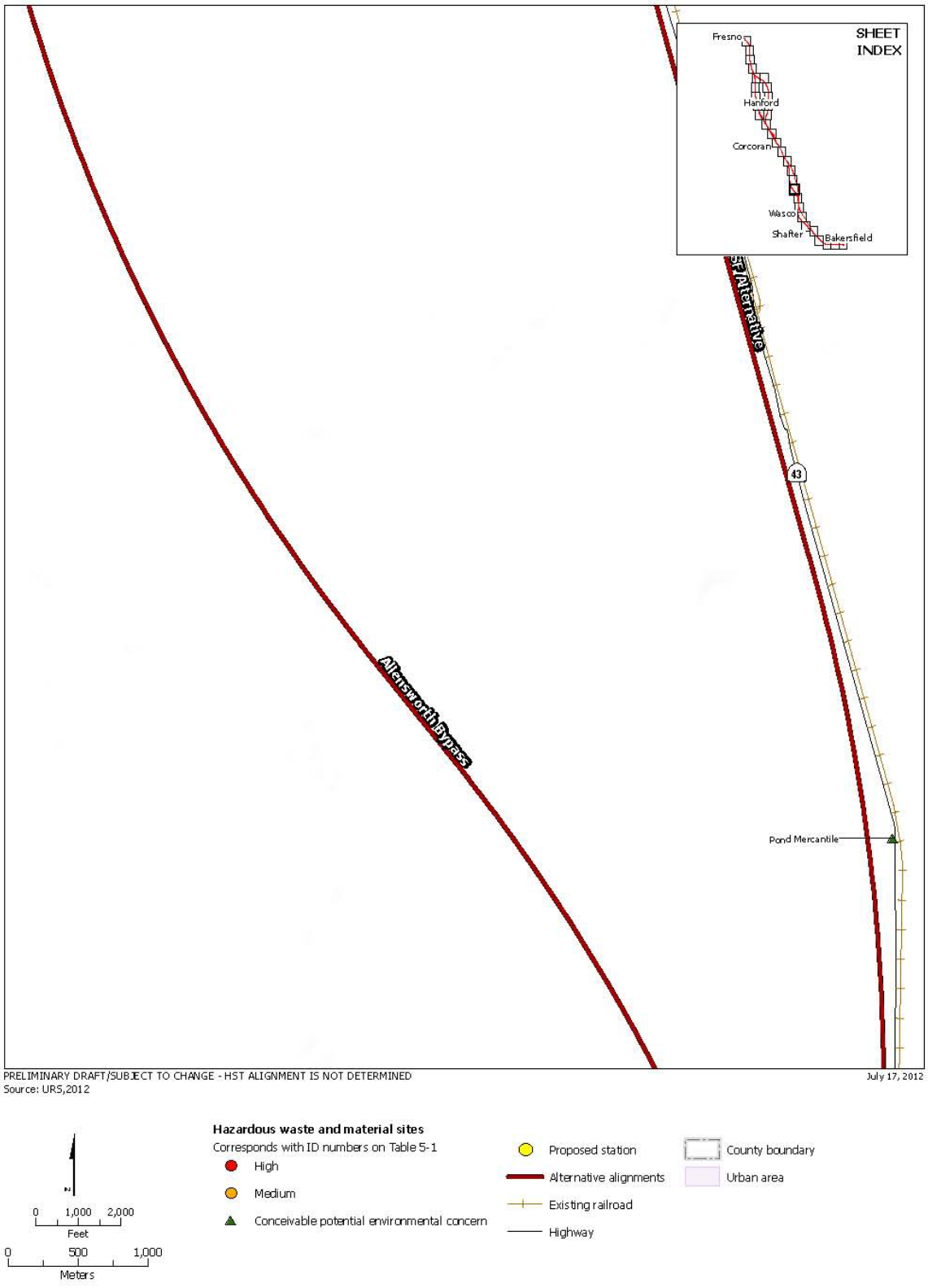

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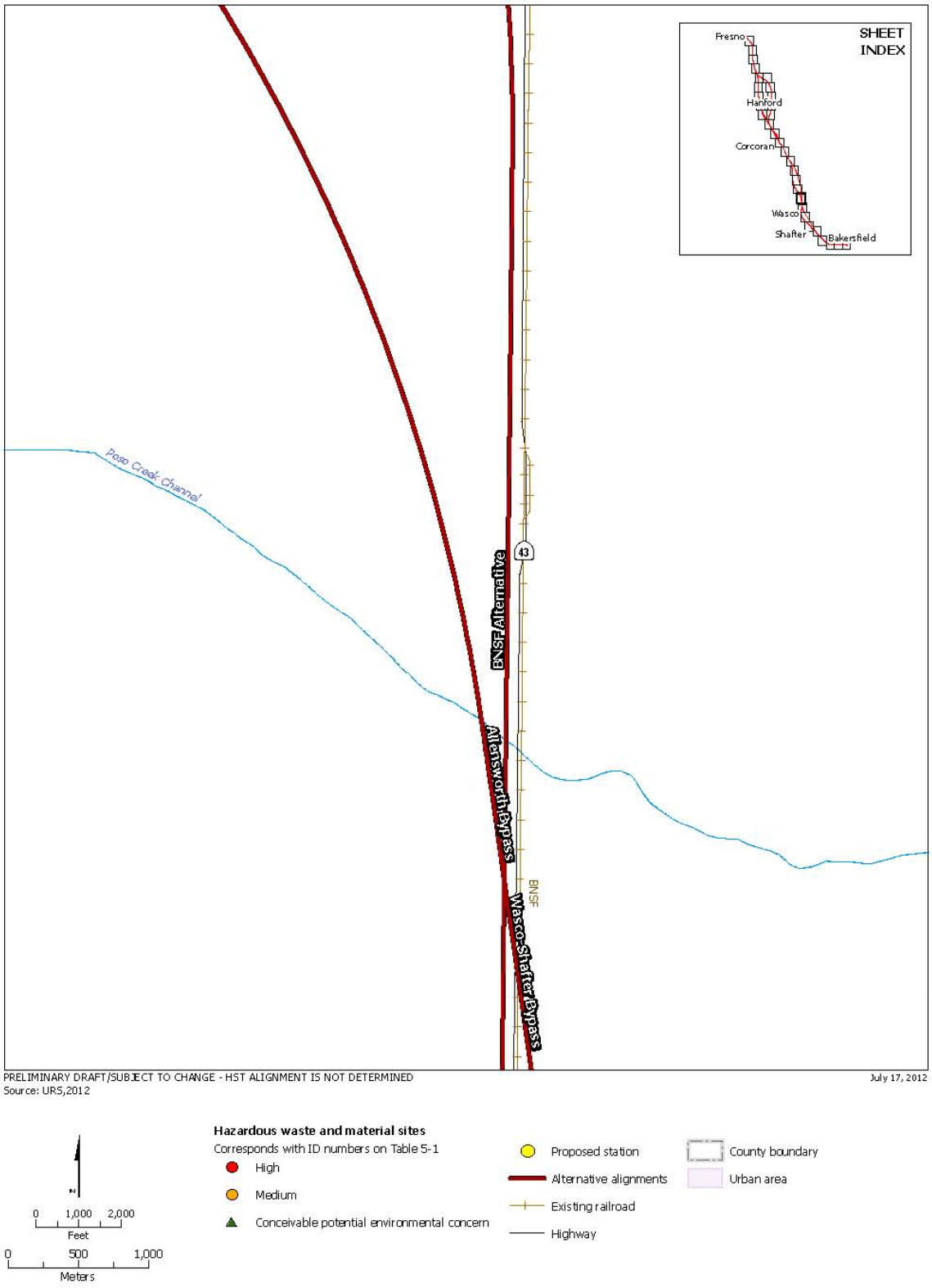

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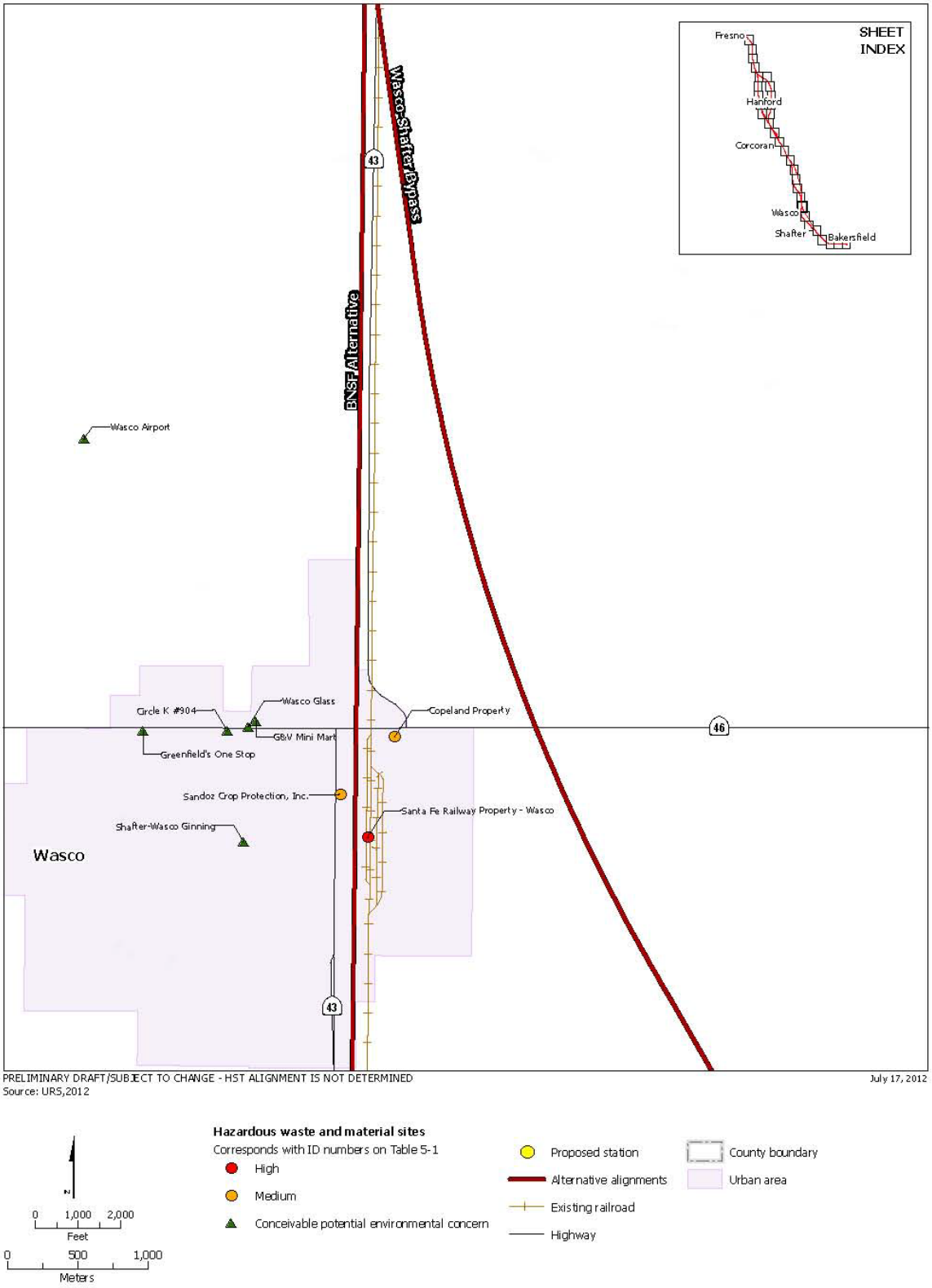

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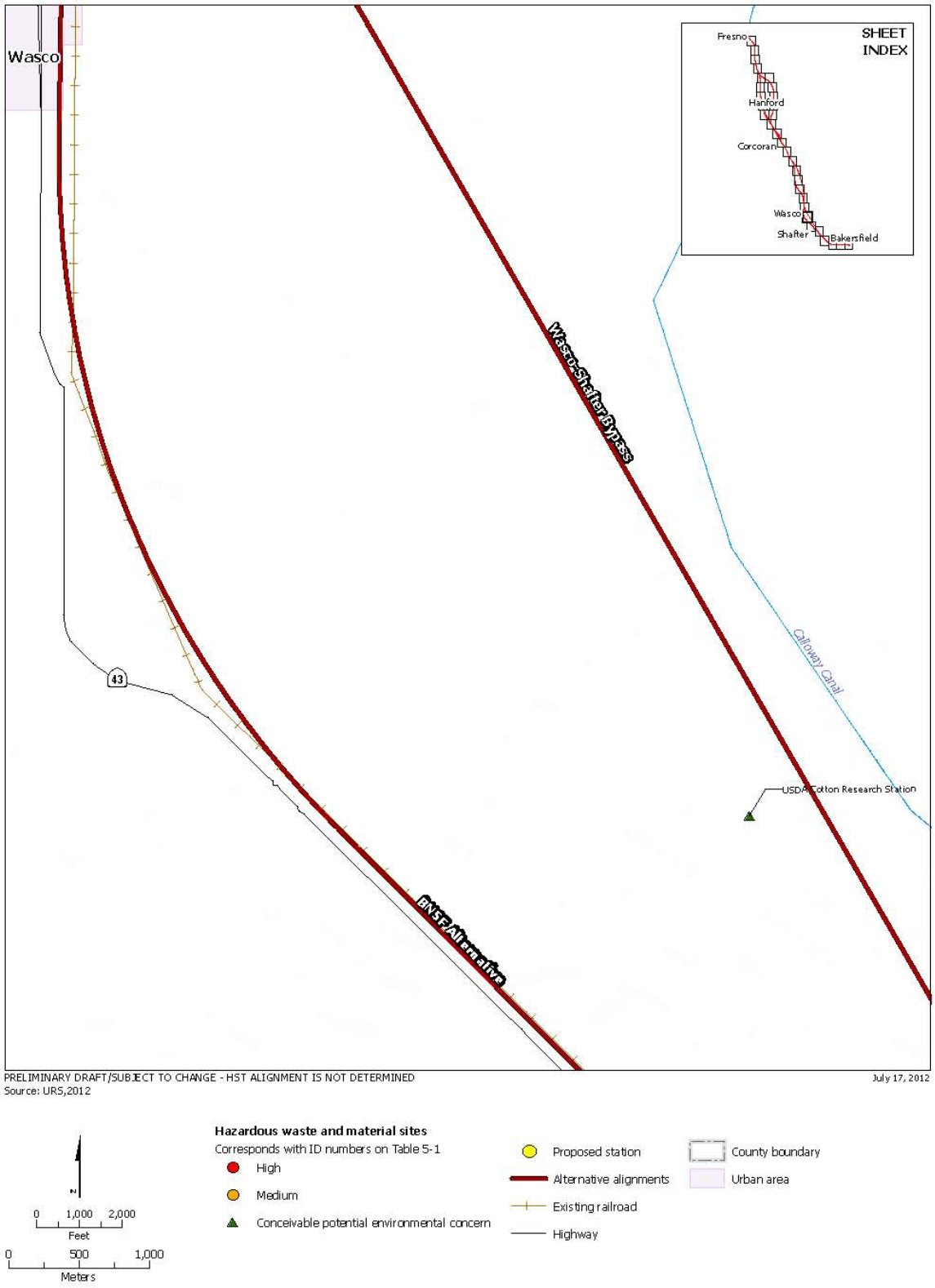

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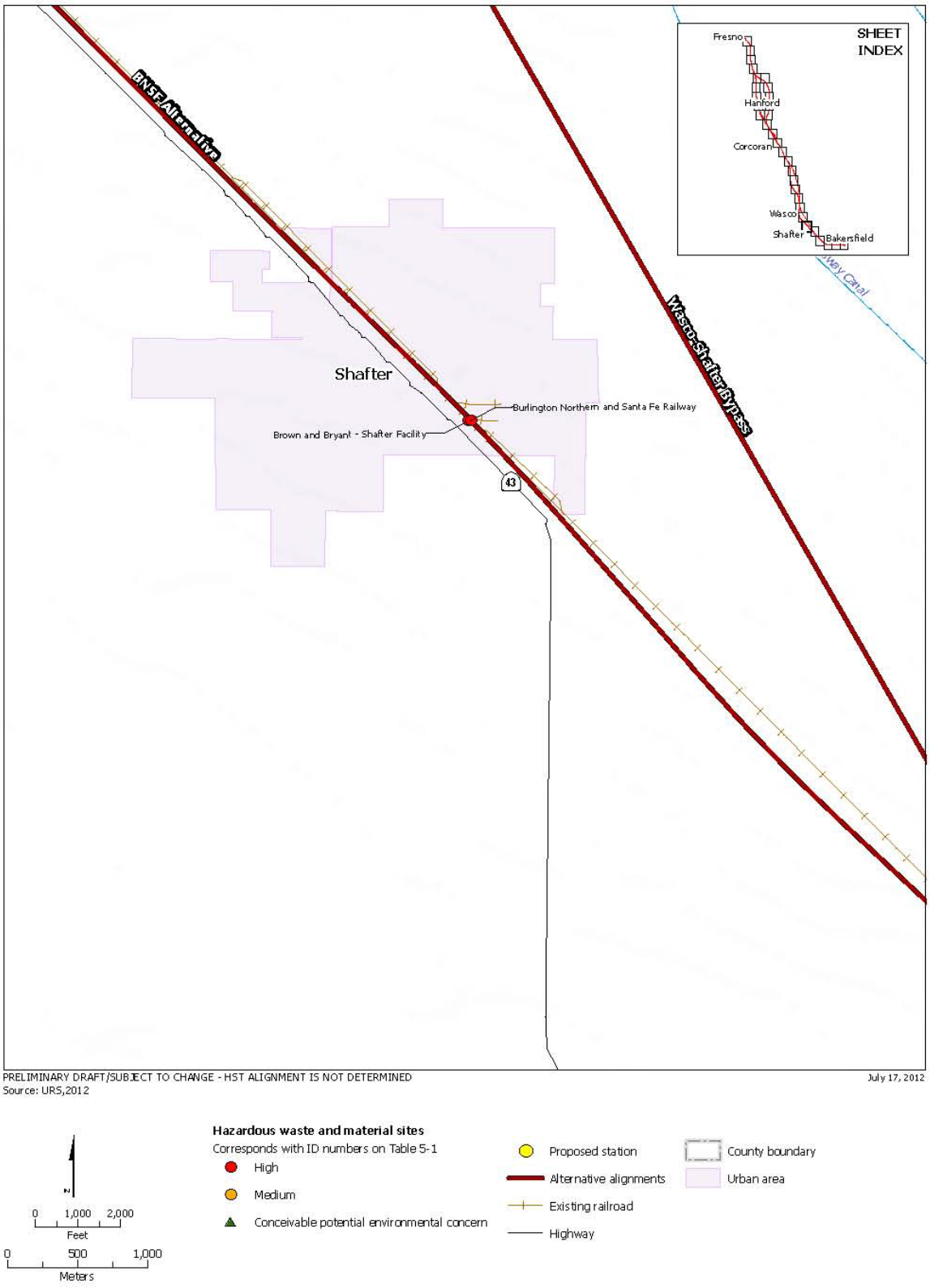

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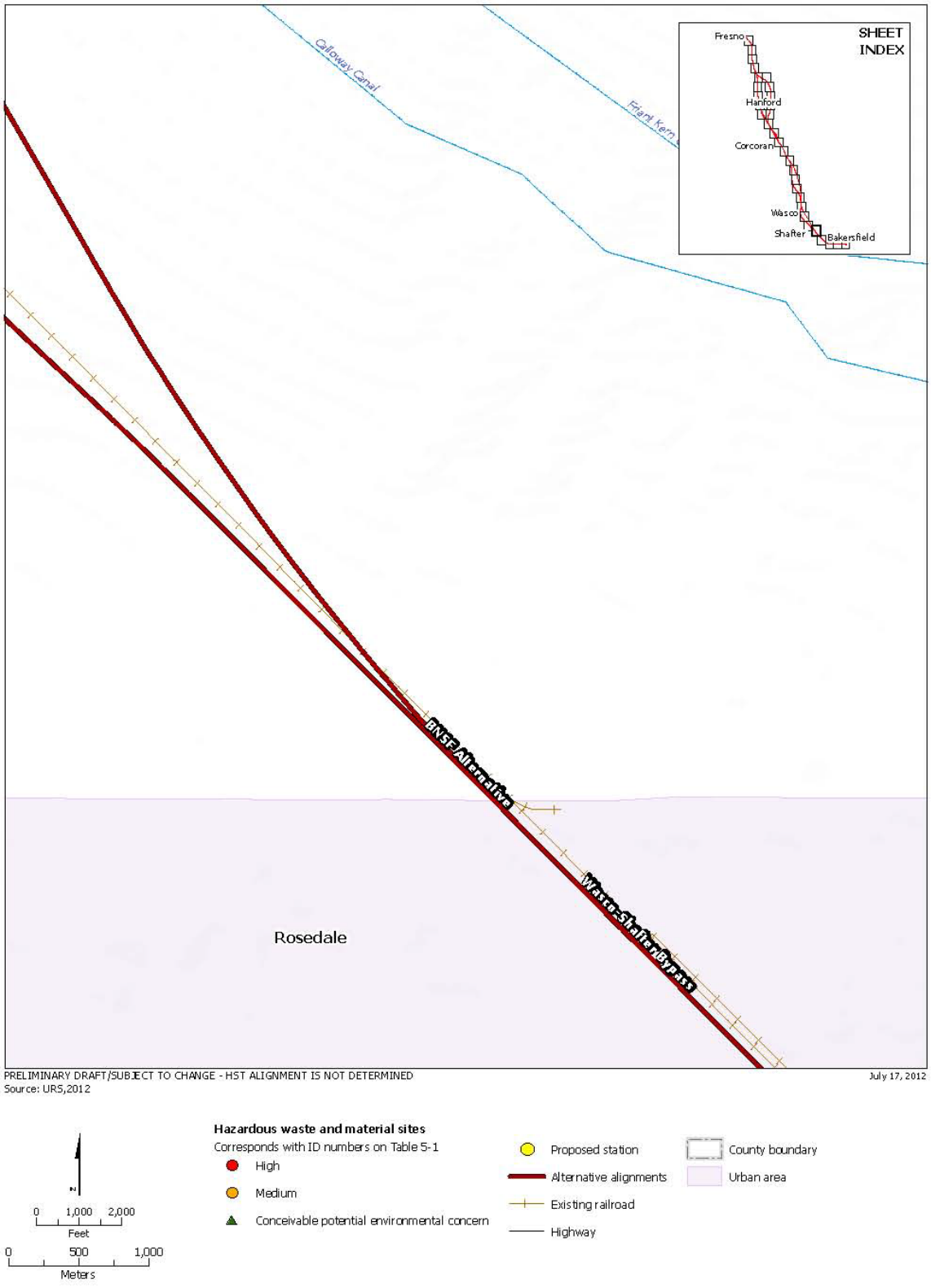

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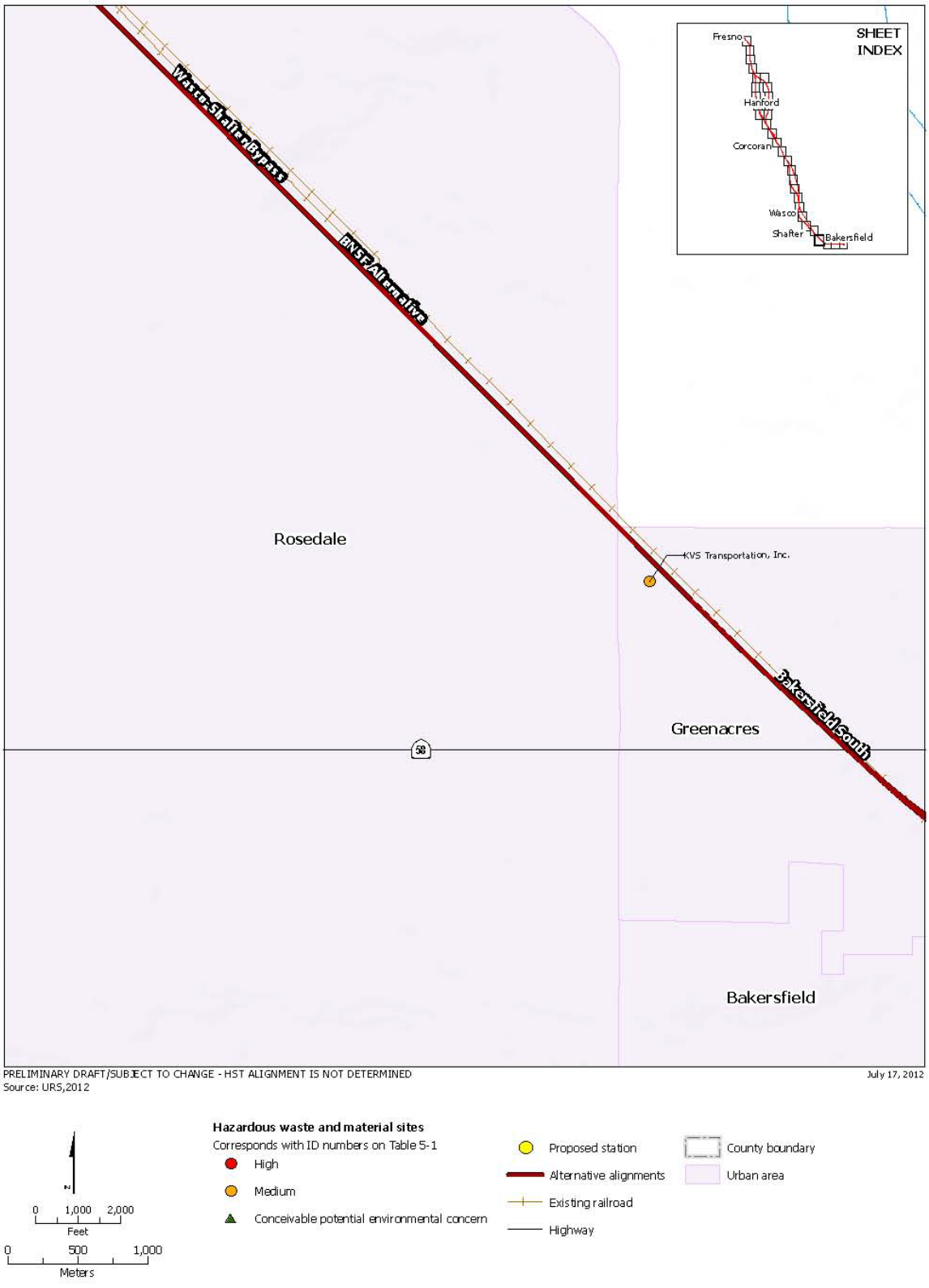

Figure 5-1
Sheet 28: Hazardous Waste and Materials in the Study Area

Figure 5-1
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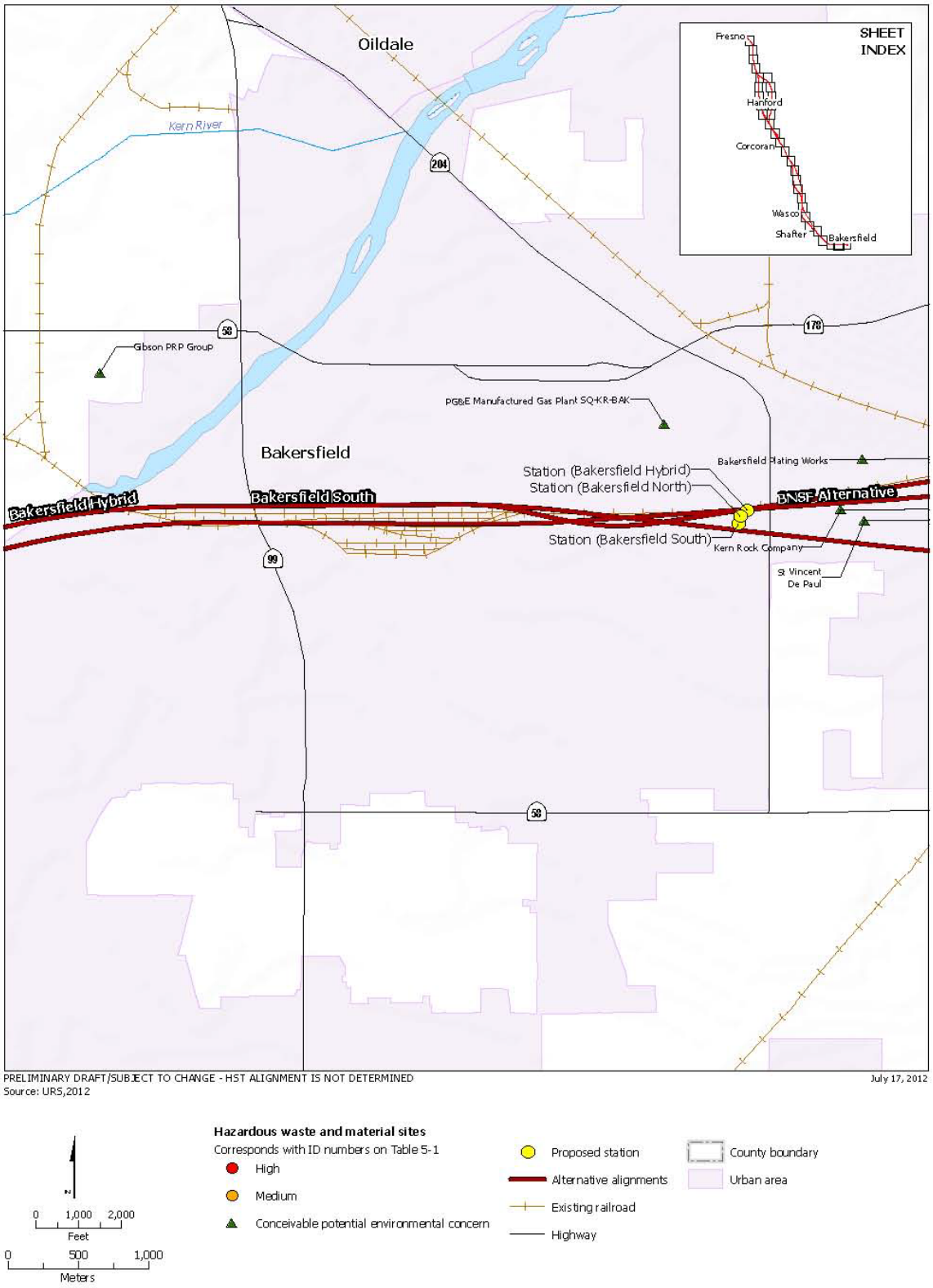

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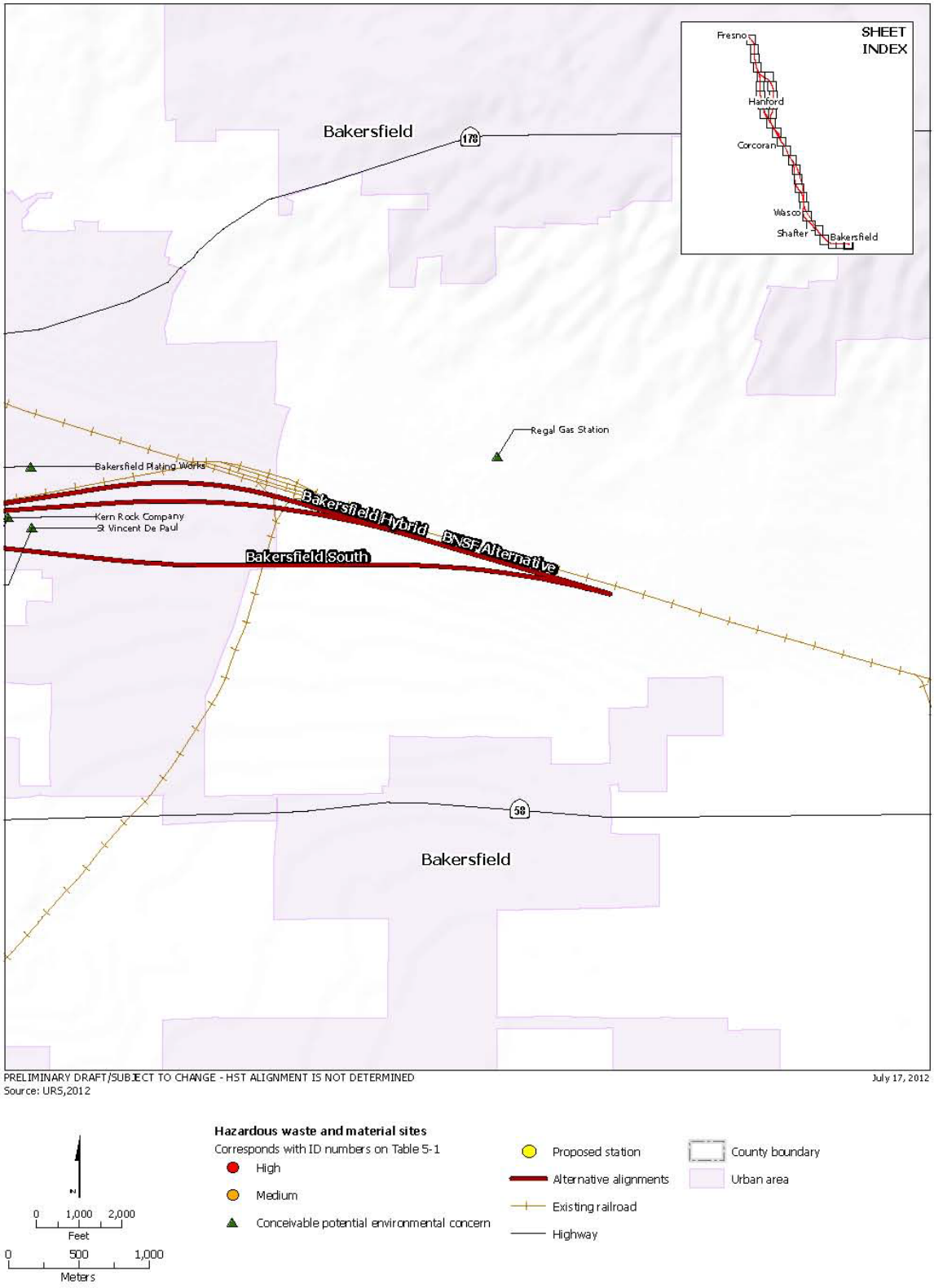

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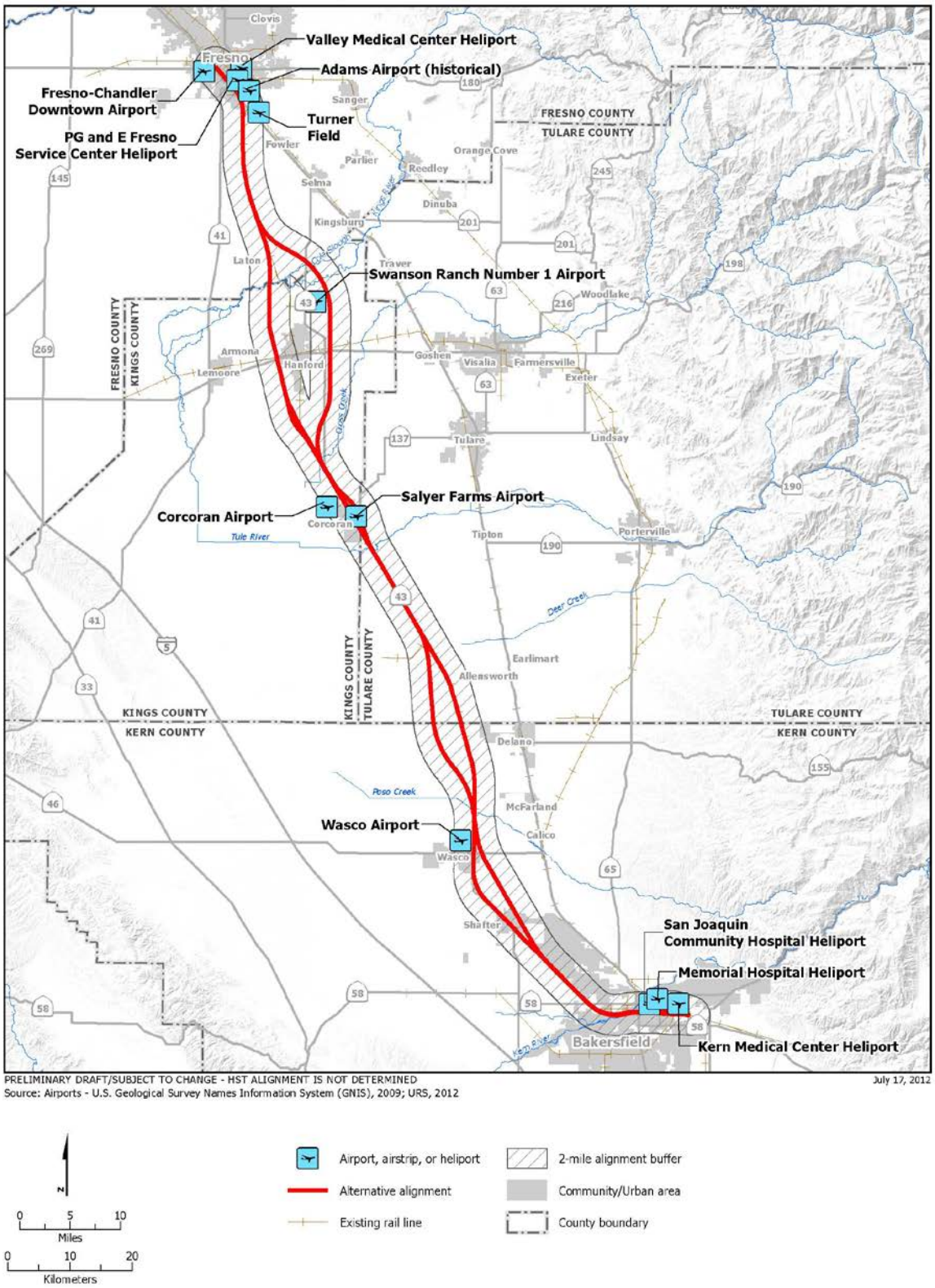

Figure 5-2
Airstrips, Airports, and Heliports in the Study Area

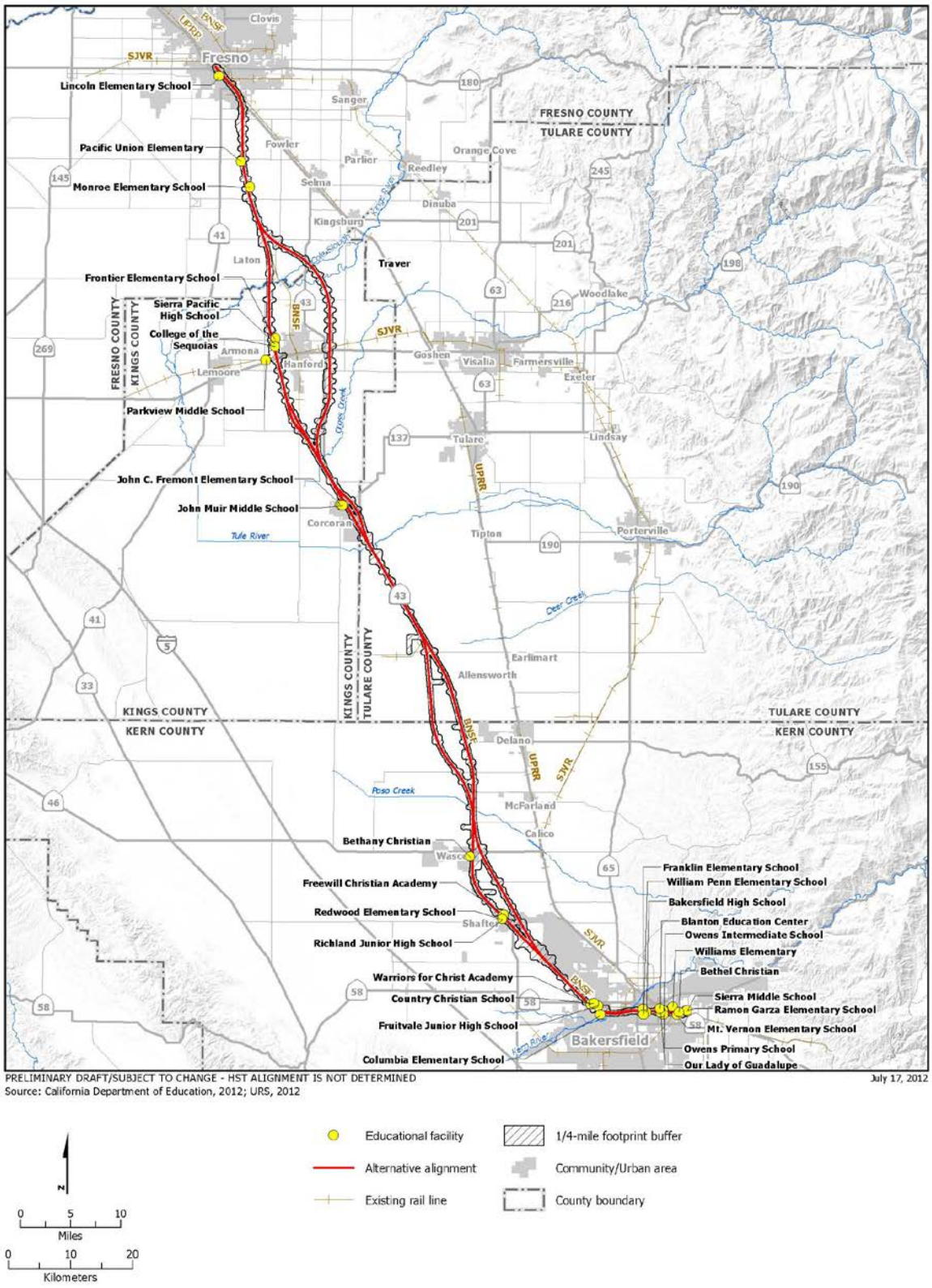

Figure 5-3
Educational Facilities in the Study Area

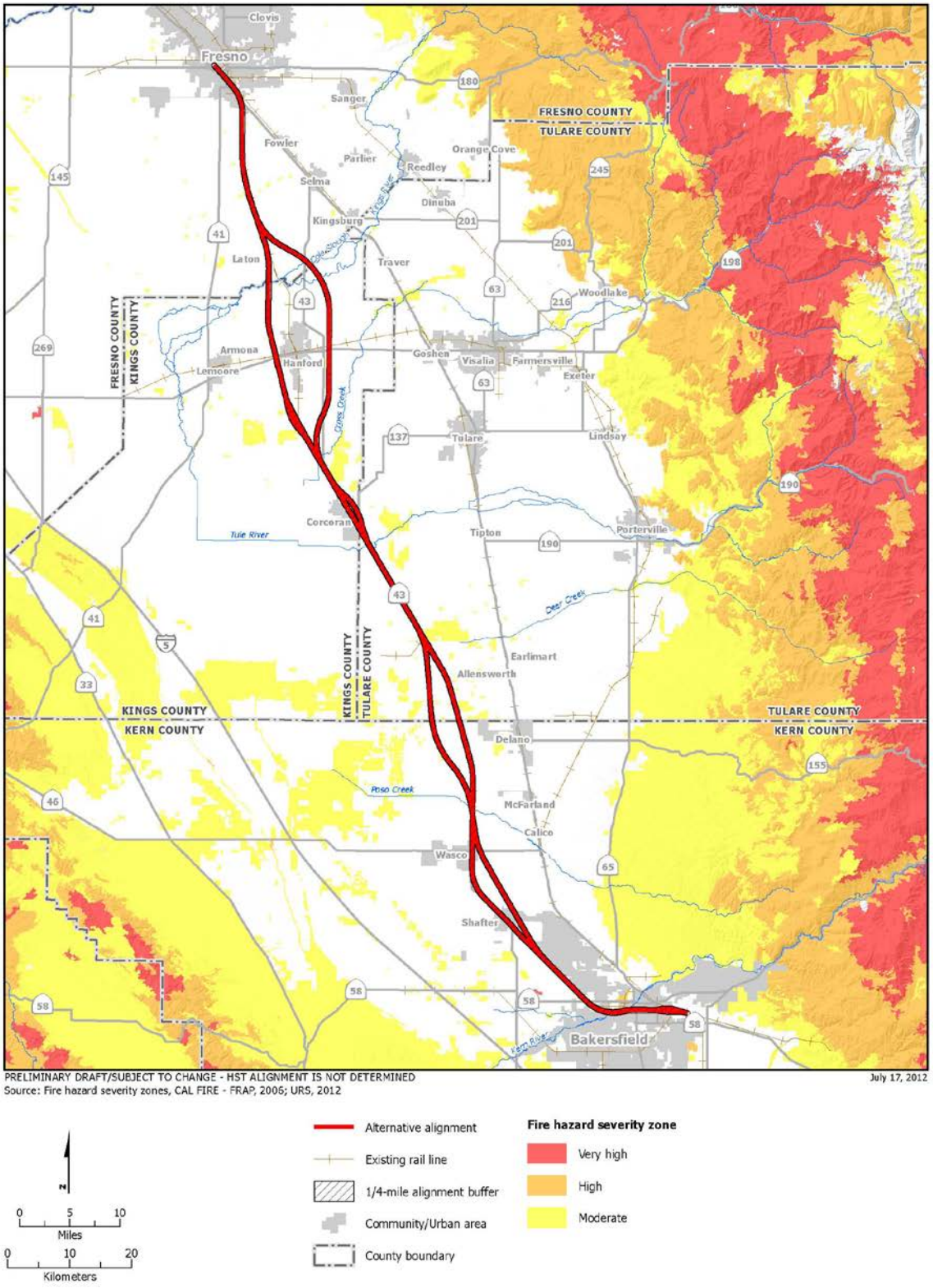

Figure 5-4
Fire Hazard Severity Zones

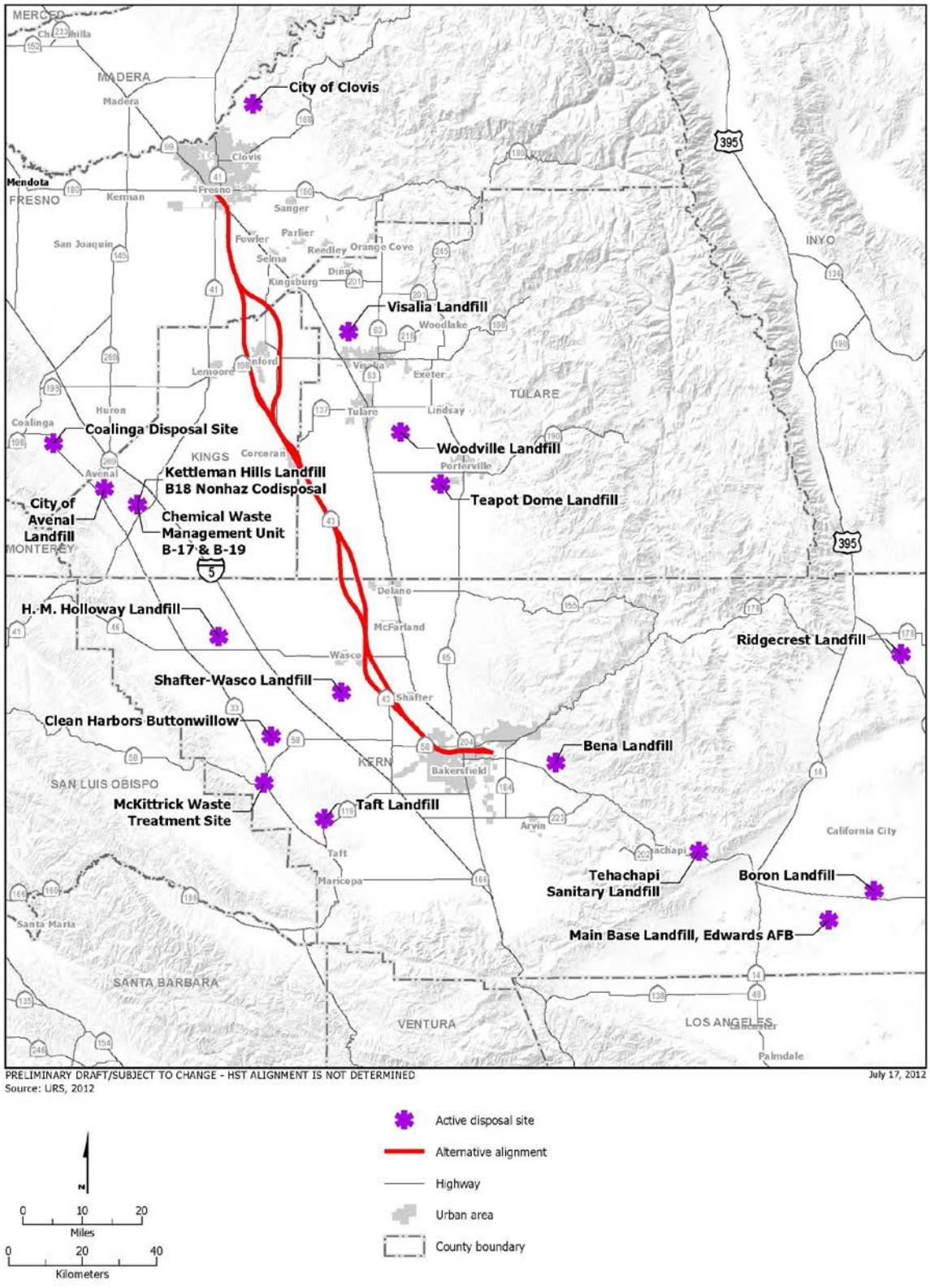

Figure 6-1
Active Waste Disposal Sites in the Study Area

APPENDIX A
Regulatory Database Search Report

(see separate document)

APPENDIX B
PEC Site Summaries with Sanborn® Map Review

(see separate document)

APPENDIX C
Sanborn® Maps and Historical Topographic Maps

(see separate document)

APPENDIX D
Site Reconnaissance Field Notes, Photographs, and Photo Logs
(see separate document)